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SCIENTIFIC FRAMEWORK OF HOMEOPATHY

Evidence Based Homeopathy

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Foreword

As we write to introduce you to this valuable document of Scientific Framework of Homoeopathy, we primarily have two things in mind.

One, in wake of the evidence building in favour of Homeopathy at clinical, biological, molecular and even nano-molecular level, a document that provides a critical overview of each of these aspects based on the major works in the respective fields, could come in handy for many arguments and counter arguments we might have to deal with as a homeopath or researcher in homeopathy. This overview, in each chapter, is followed by a list of most peer-reviewed works in that category. The subjects range from homeopathic pathogenetic trials, clinical verification and homeopathy in epidemic diseases to clinical research, basic research, and even the disciplines like veterinary homeopathy and homoeopathy in agricultural science. We are hopeful also that my colleagues will be able to find in this document their ready reference guide for basic information related to

Homeopathy framework, like situation and education of Homeopathy in world, how it is perceived as a model for healthcare delivery and the knowledge and attitude of the users of Homeopathy.

Secondly, we hope, after going through this document, more colleagues, be it at institutional level or independent, will feel inspired to contribute to the evidence basis of Homeopathy in their own way. It is not only at organisational levels that good researches happen. Research is a by-product of a series of dedicated observations and analyses, most of which is possible sitting at your treatment chambers, and adding to your clinical acumen a dash of basic methodology of research.

LMHI is dedicated to offer every possible service to the homeopathic profession. One of the ways is keeping you abreast with research in Homeopathy through this piece of work.

Thomas Peinbauer
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Renzo Galassi
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Preface

2016-17

This edition of Scientific Framework of Homeopathy has been revised keeping in view the recent developments and publications in the Homeopathy field. This edition runs in 330 pages, up 214 pages from the last edition. The revision has been done in terms of including more research papers to the repository in each chapter.

The papers included are the ones published in English language in the peer-reviewed journals during the period 2014-16. A new chapter 'Miscellaneous (Surveys/ Review papers etc.)' has been added, realising the papers falling in this category have their own significance, but are sometimes lost out in records since they do not as such capture a subject of hardcore research. A summary of 250 papers have been added in this chapter. In total, 452 papers have been added, out of which 106 belong to basic research, and 59 to

clinical research categories, thereby forming a major chunk of the addition. This document also includes 20 more meta-analyses/ systematic reviews published in the last two years, featured in the chapter under that name.

All in all, this revised edition is nothing short of a ready reckoner for the people inclined to do research in Homeopathy or are a part of science as a practitioner, educationist or policymaker.

Feedbacks on the content of this edition, as also of previous editions, are more than welcome and maybe sent to rkmanchanda@gmail.com.



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Preface

The first and foremost aim of this book, a joint production of Liga Medicorum Homoeopathica Internationalis, European Committee for Homeopathy (Belgium) and Central Council for Research in Homoeopathy (India), is to secure the position of homeopathy in today's world. Various chapters inside throw light on the current situation of homeopathy and its research in various fields. The arguments that surface in relation to homeopathy from the critics have also been tackled citing logical and scientific reasoning from various learned scientists whose works have brought scientific recognition to homeopathy. Additionally, the book will serve as a ready reckoner for the legal and educational framework of homeopathy.

For homeopathy to make further inroads in the future of medicine, extensive research is the order of the day. Of late, the advances in homoeopathic research have yielded encouraging results. A repertoire of homeopathic researches that heralds the 21st century for the science is presented in this book. These researches range from basic and fundamental to epidemiological and clinical. There is a dire need to understand the priority areas of research in homeopathy to build upon concrete evidence data for firm footing of the science in the medical world and to make homeopathy more visible on the globe.

LMHI takes regular initiatives to offer through its conventions and publications a platform where the diligent researches in various parts of the world can be converged, shared and discussed. Sharing of clinical experiences is equally important, for the service

rendered by a homeopath who is proving Sir Hahnemann right through every cure established on the human/plant/animal kingdom, is no less than that offered by a scientist working ardently in his laboratory with the same aim. This book, therefore, caters to both.

The scientific framework of homeopathy is a brainchild of my dear colleague and former Secretary for Research Dr. Michel Van Wassenhoven. The credit is due to him for bringing out the earlier editions of this vital document completely on his own. In the past year though, there have been numerous developments and achievements in homeopathic research. As Secretary for Research of LMHI, I feel privileged to present to you the revised edition of this publication, which is fortified with more information and evidence basis.

As we present this book to our fellow beings within homeopathy and outside, we hope that the cloud looming over the science element of homeopathy is melting away a little more; the world is getting to know about the prowess of Homeopathy a little more; and the gap between Homeopathy and its ultimate beneficiaries – all the beings that have life – is being bridged a little more too.



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Executive Summary

This piece of work intends to provide you with the information related to homeopathy in its varied aspects, ranging from its educational and legal framework to recent advances in terms of scientific establishment of homeopathy. The book begins with an overview of the current place of homeopathy in healthcare, with references from recent surveys. The declarations by WHO in support of the traditional and complementary medicine (T&CM) are presented next. This includes the recentmost declaration in Delhi, especially for South-east Asian region where T&CM is practised extensively.

A chapter on synoptic view of the users of homeopathy worldwide has special focus on the indicators like knowledge and attitude of the users towards homeopathy, which clearly reveals a need to improve the public access to this system. The chapter on educational framework lays out the status of the education of T&CM and throws light on the fact whether Homeopathy is taught as an independent degree or diploma course, or an additional one in T&CM curriculum. The level of education for Homeopathy, that is, graduation or above, is also mentioned wherever relevant.

Keeping in mind the growing concern over the ethical and safety issues of homeopathic medicines, this book features a separate chapter entailing the key issues that revolve around safety issues in broadly harmless homeopathic medicines. The ethical aspects explain how and why homeopathy is ethically required in today's times, as also the ethical responsibilities of homeopathy as a system.

Another highlight of the book is a chapter on basic research, with some literal mulling over the physicochemical and pharmacodynamic mysteries

behind Homeopathy. An overview of the latest in clinical research pointing out where are we headed in this area is yet another stimulating feature of the book.

The chapter on homeopathic pathogenetic trials and clinical verification provides a collection of the hallmark researches in the two fields.

The role of homeopathy in veterinary and agricultural streams is important, and its use equally beneficial to the ecological system and the science. More points regarding this are discussed inside in the related chapters. The chapter on homeopathy in epidemics is also updated.

An inventory of homeopathic researches is presented under respective chapters in the book, mostly highlighting their aims, findings and conclusions. However, the work of such huge stature cannot be converged into one tome, nor is this the intention of this publication in first place. Therefore, the readers are welcome to add to this inventory the researches that have escaped our notice, largely due to its publication in non-peer reviewed journals or in a language other than English. Comments or conclusion at the end of each chapter touch upon the thought-provoking points of the researches and suggest the way ahead.

The references used in the book are mentioned as footnotes for the ease of reading, while some definitions used in the chapters are given in the end.

A careful perusal of this book would provide the readers an overview about the status of homeopathy as well as orient them towards future action points required at varied ends in order to further elevate the level of homeopathy as a scientific system.

Chapter: I

Homeopathy in Healthcare

Homeopathy originated in disregard to the crude practices of the orthodox medicine back in the eighteenth century. Hahnemann saw leeching, bloodletting and other forms of crude practices intended to alleviate people's suffering, only adding to the misery and pain. An accomplished clinician himself, he discontinued this form of practice and resorted to his skills as chemist and translator to earn his means. However, the plight of the patients could not let 'clinician' in him rest. That was when a chapter on the therapeutic ability of Cinchona bark to cure malaria in the Cullen's *Materia Medica*, a book that Hahnemann was translating, turned a new leaf in the history of medical science. Homeopathy was eventually born as a scientific system of medicine, based solely on the concepts and methods derived from scientific experiments. In fact, historically, it turns out that Homeopathy was the most likely source for later placebo-controlled crossover and parallel group experiments. The first ever blind trial using placebo dates back to the 19th-century homeopathic therapeutic trials and provings. Single-blind placebo controls, still used today by both contemporary and CAM systems, was first put to biomedical use by Homeopathy.¹

Coming of age, Homeopathy has undergone many Randomised Controlled Trials (RCTs). A review of the 188 peer-reviewed RCT papers published in homeopathy from 1950-2013 revealed that 82 (44%) of these studies yielded positive findings; 10 (5%) were negative; 89 (47%) were non-conclusive; while 7 (4%) contained non-extractable data. The majority (153; 81%) of the 188 papers reported placebo-controlled studies, whilst the remaining 35 (19%) reported studies with a non-placebo comparator (e.g. usual medical care). Only 63 RCTs (34%) of the 188 papers studied individualised homeopathy (46 of those 63 were placebo-controlled); each of the other 125 papers (66%) studied non-individualised homeopathy (i.e. selected a single homeopathic medicine for investigation).²

¹ Dean ME. A homeopathic origin for placebo controls: 'an invaluable gift of God'. *Altern Ther Health Med*. 2000 Mar; 6(2):58-66.

² Faculty of Homeopathy; Research; Randomised controlled trials in homeopathy; URL:

<http://www.facultyofhomeopathy.org/research/randomised-controlled-trials-in-homeopathy/>; Accessed on 23rd June 2014

Global status

WHO considers homeopathy as one of the most commonly used forms of Traditional & Complementary Medicine (T&CM).³ According to a WHO document, there is a need to harness the potential contribution of all sorts of T&CM to health, wellness and people-centred health care and to promote safe and effective use of T&CM by regulating, researching and integrating T&CM products, practitioners and practice into health systems, where appropriate. Many states have made great efforts to advance T&CM, and established or developed national and regional policies and regulations to promote the safe and effective use of T&CM. The global distribution of homeopathy is encouraging, especially because it appears to be spreading further.⁴ There is a realisation of the fact that people will continue to use homeopathy and benefit from it, as homeopathy is a good medicine.⁵

Recognition and use by practitioners

In many countries all over the world homeopathy has gained official status. It has been officially recognized by the government as a system of medicine or medical specialty in Central and South America (Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Mexico), Asia (India, Pakistan, Sri Lanka) and Europe (Belgium, Bulgaria, Hungary, Lithuania, Portugal, Romania, Russia, United Kingdom). In some of these countries, namely Brazil, India, Mexico, Pakistan, Sri Lanka and the United Kingdom, homeopathy has been integrated into the national health care systems. In India, Pakistan and Sri Lanka, the legal standing of homeopathy is equivalent to that of conventional western (allopathic) medicine, many practitioners are certified in both homeopathy and allopathic medicine, and the primary care provider for many patients is a homeopathic doctor.⁶

³ WHO; Safety issues in the preparation of homeopathic medicines 2009; URL: www.who.int/medicines/areas/traditional/Homeopathy.pdf

⁴ Kayne S; Global perspectives; Charlton M., *Classical Homeopathy* 2003; pp 47-61

⁵ Specne D., *Good Medicine: Homeopathy*; BMJ 2012;345:e6184

⁶ Ulrich D. Fischer; Memorandum submitted by the

In Europe, the extent to which the countries have established a statutory regulation of homeopathy and how such regulation is performed varies widely. Homeopathic medicine as a distinct system of medicine is recognised by law in Belgium (1999), Bulgaria (2005), Germany (1998), Hungary (1997), Latvia (1997), Portugal (2003), Romania (1981), Slovenia (2007) and the United Kingdom (1950). The laws in Bulgaria, Hungary, Latvia, Romania and Slovenia explicitly allow the practice of homeopathic medicine to medical doctors only. In Belgium and Portugal the law does not exclude non-medical practitioners, but has not yet been implemented. In Slovenia, although the law permits medical doctors to practise homeopathic medicine, the medical association withdraws doctors' licenses if they actually practise it.⁷

In the European Union there are approximately 40,000 physicians who have taken a training course in homeopathy. Many more doctors in Europe prescribe homeopathic medicines without any homeopathic training: approximately 25–40% of the GPs from time to time, 6–8% of them on a more regular basis. In Germany doctors can obtain, after passing an examination, an additional qualification "Homoöpathischer Arzt" recognised by the Bundesärztekammer. A similar situation exists in Austria where the additional qualification "Homoöpathie" is recognized by the Österreichische Ärztekammer. In 1997 the French Medical Association (Ordre National des Médecins) recognised homeopathy as an existing therapeutic medical method and stated that homeopathic education should be installed at Universities. Further, a subspecialty under the term of "certificate of capacity in homeopathy" has been in place in Switzerland since 1998 in collaboration with the Swiss Medical Association FMH, for doctors holding a title of a current specialty such as General Medicine, Internal Medicine or Paediatrics.⁸

Despite the growing appreciation of homeopathy, the American Institute of homeopathy (AIH) has fewer than 500 members. This number is reported to be misleading

AIH membership is much rarer than the use of homeopathy among American physicians. In a national survey asking the physicians whether they had used homeopathy or would use it, 5.9% reported they did and another 29.4% reported they would use homeopathy, which amounts to a total of 33.8%. The figures by specialty were 26.3% for paediatrics, 29.4% for internal medicine, and 41.2% for family and general practice. Although growing rapidly, the use of homeopathy remains a minority, as do the CAM therapies. However, the rarity of medical homeopathy in America does not accurately reflect the presence of homeopathy in the world's medical community.⁹

In India alone, as in 2011, there were 2,24,279 registered homeopathic practitioners (185.8 practitioners per million population), trained and educated in hundreds of homeopathic medical colleges, recognized and supported by the Indian Government.¹⁰

In other parts of the world too, the practice of homeopathy is known. In Nigeria, the homeopathic practice is known to be existing for 40 years. In Malaysia, an organisation called the Registered Medical Practitioners Association established in 1985 has about 500 members. Singapore recognises homeopathy, but there is no legislative framework so far. Approximately 150 homeopaths practise in Australia, while Cuba too has well-organised homeopathic presence with a total of about 922 homeopaths. In Russia and Costa Rica too, homeopathy is available unofficially.¹¹

Besides, there are a few thousand veterinary surgeons in the world who provide homeopathic treatment to pets, food-producing and other animals. The International Association for Veterinary Homeopathy (IAVH) established minimum training standards and the requirements for teaching programmes, examinations and continuing education. In most EU Member States there are special homeopathic training programmes for veterinarians as well as for dentists and pharmacists.¹²

Liga Medicorum Homeopathica Internationalis (LMHI) (HO 31); Evidence Check 2: Homeopathy; House of Commons: Science and Technology Committee; Fourth Report of Session 2009–10; Ev 160-2; URL: http://www.homeowatch.org/policy/evidence_check.pdf

⁷European Committee for Homeopathy; Regulatory status; URL: <http://www.homeopathy-europe.org/regulatory-status>; Accessed on June 23, 2014

⁸Ulrich D. Fischer; Memorandum submitted by the Liga Medicorum Homeopathica Internationalis (LMHI) (HO 31); Evidence Check 2: Homeopathy; House of Commons: Science and Technology Committee; Fourth Report of Session 2009–10; Ev 160-2; URL:

http://www.homeowatch.org/policy/evidence_check.pdf

⁹Carlston M.; Homeopathy today; Carlston M., Classical Homeopathy 2003; pp 33-45

¹⁰Dept. of AYUSH, Homeopathy: Science of Gentle Healing; 2013; Govt. of India; URL: <http://www.ccrhindia.org/Dossier/content/cover.html>; Accessed on: June 23, 2014

¹¹Kayne S; Global perspectives; Charlton M., Classical Homeopathy 2003; pp 47-61

¹²Ulrich D. Fischer; Memorandum submitted by the Liga Medicorum Homeopathica Internationalis (LMHI) (HO 31); Evidence Check 2: Homeopathy; House of Commons: Science and Technology

Cost & Insurance cover

Homeopathic medicines are much less expensive than conventional prescription drugs, because they are generic, non-patented and non-patentable medicinal substances, produced at low costs. On average, homeopathic medicines cost less than Euro 1 per day in acute conditions and a few cents per day (sometimes a fraction of a cent) in chronic conditions.¹³ An analysis of data stretched over a decade in New Delhi, India, revealed that the cost of homeopathic treatment was still one-fourth of the expenditure incurred for allopathic treatment.¹⁴ Given the present set of studies, there is no denying that homeopathy could be an effective and relatively inexpensive addition/alternative to conventional medicine. Further, in a review of 14 studies¹⁵ assessing various aspects of economic evaluations of homeopathy, eight reported on improvement in patients' health after homeopathic treatment combined with some sort of cost savings, while four studies found that homeopathy patients proved more than or at least as much as patients in control groups, at comparable costs.¹⁶

In some areas of the United Kingdom homeopathic

treatment by doctors is covered by the National Health System. In Belgium and Latvia the fees for homeopathic treatment are partially covered by the statutory health insurance. In Austria, Belgium, Bulgaria, Germany, Hungary, Italy, Netherlands, Switzerland and the United Kingdom the cost is covered by private insurance companies. However, in Hungary, there is no possibility of reimbursement by the national health insurance. The costs for homeopathic medicines are covered by the statutory health insurance in Belgium (partially), France (partially), Portugal (only magistral formula) and Switzerland, by additional private insurance companies in Belgium, Germany, Hungary, the Netherlands and the United Kingdom.¹⁷ In Germany, all private insurances reimburse the fees for the consultations with a homeopathic MD, as well as the costs for homeopathic medicines. Homeopathic practitioners are commonly known to report that many patients with health insurance pay out of their pockets for homeopathic services because their insurance does not cover visits to a homeopath.¹⁸

Although India has a large number of public health care facilities, it is estimated that out of pocket expenditure

Committee ; Fourth Report of Session 2009–10; Ev 160-2; URL:

http://www.homeowatch.org/policy/evidence_check.pdf

¹³Ulrich D. Fischer; Memorandum submitted by the Liga Medicorum Homoeopathical Internationalis (LMHI) (HO 31); Evidence Check 2: Homeopathy; House of Commons: Science and Technology Committee ; Fourth Report of Session 2009–10; Ev 160-2; URL:

http://www.homeowatch.org/policy/evidence_check.pdf

¹⁴Manchanda R.K, Verma S.K, Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

¹⁵ As follows:

- Bachinger, A., Rappenhöner, B., Rychlik, R.: Socioeconomic effectiveness of Zeel comp.-therapy compared to patients with hyaluronic acid in patients suffering from osteoarthritis of the knee. [Zursozioökonomischen Effizienz einer Zeel comp.-Therapie im Vergleich zu Hyaluronsäure bei Patienten mit Gonarthrose.] [German] Z Orthop **134**(4) (1996)
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- Witt, C.M., Brinkhaus, B., Pach, D., Reinhold, T., Wruck, K., Roll, S., Jäkel, T., Staab, D., Wegscheider, K., Willich, S.N.: Homeopathic versus conventional therapy for atopic eczema in children: medical and economic results. Dermatology **291**, 329–340 (2009)

¹⁶Viksvveen P1, Dymitr Z, Simoens S.; Economic evaluations of homeopathy: A review; Eur J Health Econ. 2014 Mar;15(2):157-74

¹⁷<http://www.homeopathyeurope.org/regulatory-status>; Accessed on 23 June 2014

¹⁸Ulrich D. Fischer; Memorandum submitted by the Liga Medicorum Homoeopathical Internationalis (LMHI) (HO 31); Evidence Check 2: Homeopathy; House of Commons: Science and Technology Committee ; Fourth Report of Session 2009–10; Ev 160-2; URL: http://www.homeowatch.org/policy/evidence_check.pdf

on health services is of the tune of 85%, which is among the highest in the world. Even for homœopathy, with the availability of private practitioners, the patients tend to seek treatment in the private sector. Private practice, therefore, is highly popular and co-exists with the public health care facilities in almost all parts of the country.¹⁹

Hospitals

Several hospitals in Europe, in their out-patient departments, currently provide homeopathic treatment by physicians, ie Austria (7), France (2), Germany (5), Spain (2), Italy (some). There are five dedicated public sector homeopathic hospitals in the United Kingdom. In Hungary, however, there is no possibility of homeopathic care in hospitals. While in India, all homeopathic medical colleges have attached hospitals for homeopathic care. Besides, homeopathic wings exist in many multi-specialty hospitals and healthcare units, both private and government.

In India, healthcare services in homœopathy are provided by 215 hospitals and 6812 dispensaries run by state governments and municipal bodies, 35 dispensaries of Central Government Health Scheme, 39 of the labour ministry and 129 of the railway ministry. In the public sector, basic health care through homœopathic treatment is provided to the general public by homœopathic hospitals and dispensaries set up by the government. The network of 6812 homœopathic dispensaries run by the central and state governments and autonomous bodies of the Government including Municipal Councils provide primary health care services. Homœopathic treatment facilities are also provided by public sector undertakings such as Thermal Power Corporations, National Aluminum Corporation, Central Reserve Police Force, Border Security Force, etc. However, a majority of homeopathic practitioners in India operate singly through private clinics, which vary immensely in terms of available facilities and consultation costs and treatment costs. Small clinical

establishments with limited clinical facilities are there, as also, large multi specialty facilities, with inpatient, outpatient departments, laboratories, and para-clinical facilities. Homœopathic treatment is also available in large allopathic hospital establishments largely through the efforts of individual homeopathic practitioners in the private sector and through co-location of facilities in the government sector. Further, homœopathic hospitals in India operate along with educational colleges and independently providing an array of OPD and IPD services including radiological and pathological facilities. The numbers of hospitals in the country are, however, limited. These cater primarily to patients requiring long term care rather than intensive care. As such the uptake in these hospitals is limited.²⁰

Users

Over the past 30–40 years homeopathy has benefited from growing demand both from doctors and from the public in the majority of the European countries. According to a survey by European Commission order three Europeans out of four know about homeopathy and of these about 30% use it for their healthcare. In USA, a study reports of 6.7 million American adults using Homeopathy, which was 3.4% of the adult population.²¹ Another study reported that most homeopathic patients fell in the middle age of 25–44 years, had above-average incomes and were highly educated.²² In India, a secondary data analysis reflected the popularity of homeopathy was increasing among the users, with 58% rise in the patient inflow at the homeopathic primary healthcare units over a decade.²³

Patient outcome

Several studies exist to support the positive effects of Homeopathy in clinics. A review²⁴ of five clinical outcome studies in homeopathy focusing on diverse medical conditions like headache,²⁵ acute otitis media,²⁶ ADHD in children,²⁷ respiratory tract and ear complaints, including

¹⁹Carlston M.; Homeopathy today; Carlston M., Classical Homeopathy 2003; pp 33–45

²⁰Carlston M.; Homeopathy today; Carlston M., Classical Homeopathy 2003; pp 33–45

²¹Eisenberg D, Kessler RC, Foster C et al: Unconventional medicine in the United States, *N Engl J Med* 328:246–252, 1993

²²Goldstein M, Glik D: Use of and satisfaction with homeopathy in a patient population, *Altern Ther Health Med* 4: 60–65, 1998

²³Manchanda R.K, Verma S.K, Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810–2010): A comparison of practices; 91–104, 2013

²⁴Robert T Mathie; Clinical outcomes research: contributions to the evidence base for homeopathy; Homeopathy (2003) 92, 56–57

²⁵Muscari-Tomaoli G, Allegri F, Miali E, et al. Observational study of quality of life in patients with headache, receiving homeopathic treatment. *Br Hom J* 2001; 90: 189–197

²⁶Frei H, Thurneysen A. Homeopathy in acute otitis media in children: treatment effect or spontaneous resolution? *Br Hom J* 2001; 90: 180–182

²⁷Frei H, Thurneysen A. Treatment for hyperactive children: homeopathy and methylphenidate compared in a family setting. *Br Hom J* 2001; 90: 183–188.

allergies²⁸ and male infertility.²⁹ Each of the five studies concluded in favour of the clinical effectiveness of homeopathy.

WHO for CAM (including Homeopathy)

The level of acceptance for the homeopathic science in various parts of the world is varied, as is the knowledge and attitude towards the science. While in some parts, the science exists in an advanced stage and is taught, practised and researched for better validation, in some others it bears complete unfamiliarity. However, with WHO recognising the strengths of Traditional &

Complementary Medicine (T&CM) as a support system to the conventional therapy³⁰, this branch of medicine is being attended to more than ever. As a result, more and more parts of the globe are establishing acts for T&CM, making provisions for its education and integrating T&CM with the orthodox medicine for primary health care (PHC) delivery. Homeopathy, if integrated in the PHC system, can not only be an answer to most day to day illnesses reported in the OPD, but also an economically viable option. WHO's declarations regarding T&CM are given below which reveal WHO recognises the fact that T&CM needs to be formalised globally for better healthcare services

Beijing Declaration

Adopted by the WHO Congress on Traditional Medicine, Beijing, China, 8 November 2008

Participants at the World Health Organization Congress on Traditional Medicine, meeting in Beijing this eighth day of November in the year two thousand and eight:

- Recalling the International Conference on Primary Health Care at Alma Ata thirty years ago and noting that people have the right and duty to participate individually and collectively in the planning and implementation of their health care, which may include access to traditional medicine;
- Recalling World Health Assembly resolutions promoting traditional medicine, including WHA56.31 on Traditional Medicine of May 2003;
- Noting that the term "traditional medicine" covers a wide variety of therapies and practices which may vary greatly from country to country and from region to region, and that traditional medicine may also be referred to as alternative or complementary medicine;
- Recognizing traditional medicine as one of the resources of primary health care services to increase availability and affordability and to contribute to improve health outcomes including those mentioned in the Millennium Development Goals;
- Recognizing that Member States have different domestic legislation, approaches, regulatory responsibilities and

delivery models;

- Noting that progress in the field of traditional medicine has been obtained in a number of Member States through implementation of the WHO Traditional Medicine Strategy 2002-2005;

- Expressing the need for action and cooperation by the international community, governments, and health professionals and workers, to ensure proper use of traditional medicine as an important component contributing to the health of all people, in accordance with national capacity, priorities and relevant legislation;

In accordance with national capacities, priorities, relevant legislation and circumstances hereby make the following Declaration:

At the sixty-second World Health Assembly

22 May 2009 (WHA62.13 - Agenda item 12.4):

Having considered the report on primary health care, including health system strengthening (Document A62/8); Recalling resolutions WHA22.54, WHA29.72, WHA30.49, WHA31.33, WHA40.33, WHA41.19, WHA42.43, WHA54.11, WHA56.31 and WHA61.21; Recalling the Declaration on Alma-Ata which states, inter alia, that "The people have the right and duty to participate individually and collectively in the planning and implementation of their

²⁸ Riley D, Fischer M, Singh B, et al. Homeopathy and conventional medicine: an outcomes study comparing effectiveness in a primary care setting. *J Altern Complement Med* 2001; 7: 149–159.

²⁹ Gerhard I, Wallis E. Individualized homeopathic therapy for male infertility. *Homeopathy* 2002; 91: 133–144.

³⁰ WHO; WHO Traditional Medicine Strategy 2014-2023; (2013); URL: http://apps.who.int/iris/bitstream/10665/92455/1/9789241506090_eng.pdf?ua=1

health care” and “Primary health care relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community”;

Noting that the term “traditional medicine” covers a wide variety of therapies and practices which may vary from country to country and from region to region; Recognizing “traditional medicine” as one of the resources of primary health care services that could contribute to improved health outcomes, including those in the Millennium Development Goals;

Recognizing that Member States have different domestic legislation, approaches, regulatory responsibilities and delivery models related to primary health care;

Noting the progress that many governments have made to include “traditional medicine” into their national health care;

Noting that progress in the field of “traditional medicine” has been achieved by a number of Member States through implementation of the WHO traditional medicine strategy 2002-2005 (Document WHO/EDM/TRM/2002);

Expressing the need for action and cooperation by the international community, governments and health professionals and workers, to ensure proper use of “traditional medicine” as an important component contributing to the health of all people, in accordance with national capacity, priorities and relevant legislation;

Noting that the WHO Congress on “Traditional Medicine” took place from 7 to 9 November 2008, in Beijing, China, and adopted the Beijing Declaration on “Traditional Medicine”;

Noting that African Traditional Medicine Day is commemorated annually on 31 August in order to raise awareness and the profile of “traditional medicine” in the African region, as well as to promote its integration into national health systems,

1.	URGES Member States, in accordance with national capacities, priorities, relevant legislation and circumstance:
I.	to consider adopting and implementing the Beijing Declaration on Traditional Medicine in accordance with national capacities, priorities, relevant legislation and circumstances;

II.	to respect, preserve and widely communicate, as appropriate, the knowledge of traditional medicine, treatments and practices, appropriately based on the circumstances in each country, and on evidence of safety, efficacy and quality;
III.	to formulate national policies, regulations and standards, as part of comprehensive national health systems, to promote appropriate, safe and effective use of traditional medicine;
IV.	to consider, where appropriate, including traditional medicine into their national health systems based on national capacities, priorities, relevant legislation and circumstances, and on evidence of safety, efficacy and quality;
V.	to further develop traditional medicine based on research and innovation, giving due consideration to the specific actions related to traditional medicine in the implementation of the Global strategy and plan of action on public health, innovation and intellectual property;
VI.	to consider, where appropriate, establishing systems for the qualification, accreditation or licensing of traditional medicine practitioners and to assist traditional medicine practitioners to upgrade their knowledge and skill in collaboration with relevant health providers, on the basis of traditions and customs of indigenous peoples and communities;
VII.	to consider strengthening communication between conventional and traditional medicine providers and, where appropriate, establishing appropriate training programmes with content related to traditional medicine for health professionals, medical students and relevant researchers;
VIII.	to cooperate with other in sharing knowledge and practices of traditional medicine and exchanging training programmes on traditional medicine, consistent with national legislation and relevant international obligations;
2	REQUESTS the Director-General:
I.	to provide support to Member States, as appropriate and upon request, in implementing the Beijing Declaration on Traditional Medicine;
II.	to update the WHO traditional medicine strategy

	2002-2005, based on countries' progress and current challenges in the field of traditional medicine;
III.	to give due consideration to the specific actions related to traditional medicine in the implementation of the Global strategy and plan of action on public health, innovation and intellectual property and the WHO global strategy for prevention and control of non communicable diseases;
IV.	to continue providing policy guidance to countries on how to integrate traditional medicine into health systems, especially to promote, where appropriate, the use of traditional/indigenous medicine for primary health care, including disease prevention and health promotion, in line with evidence of safety, efficacy and quality

	taking into account the traditions and customs of indigenous peoples and communities;
V.	to continue providing technical guidance to support countries in ensuring the safety, efficacy and quality of traditional medicine; considering the participation of peoples and communities and taking into account their traditions and customs;
VI.	to strengthen cooperation with WHO collaborating centres, research institutions and non governmental organizations in order to share evidence-based information taking into account the traditions and customs of indigenous peoples and communities; and to support training programmes for national capacity building in the field of traditional medicine. Eighth plenary meeting, 22 May 2009 A62/VR/8

DELHI DECLARATION

12-14 February 2013, New Delhi

A. We, the Health Ministers of South-East Asian countries, representing the Governments of Bangladesh, Bhutan, India, Nepal, Minister of Indigenous Medicine Sri Lanka, and Vice Minister of Health, Timor-Leste, and the representatives of DPR Korea, Indonesia, Myanmar, Maldives and Thailand, met in New Delhi during the "International Conference on Traditional Medicine for South-East Asian Countries", and we –

1.	recalled the importance given at the International Conference on Primary Health Care at Alma Ata in 1978 for inclusion of access to Traditional Medicine in the planning and implementation of health care;
2.	noted the progress of Traditional Medicine in the countries of South East Asia Region, specifically after the World Health Organization (WHO) brought out the strategy for Traditional Medicine 2002-2005;
3.	considered the importance of various resolutions of the World Health Assembly (WHA) and of the South East Asia Regional Committee for promoting Traditional Medicine and Medicinal

	Plants, specifically WHA 56.31, WHA62.13 and SEA/RC56/R6;
4.	appreciated the diversity and richness of Traditional Medical Systems, their courses of study, status of research & development, regulatory frameworks and medicinal flora in the South-East Asian countries;
5.	recognized that Traditional Medicine and Traditional Medicine Practitioners have substantial potential to contribute for improving health outcomes in various countries of the world;
6.	acknowledged the fact that traditional medicine is culturally acceptable, generally available, affordable and widely used in various countries for the treatment of diseases;
7.	noted the fact that for millions of people often living in rural areas in different countries, traditional medicine is a significant source of health care;
8.	recognized the potential of traditional medicine in providing primary health care, and
9.	expressed the need for sharing of experience and knowledge for securing reliance on Traditional Medicine for public health benefits.

B. DECLARATION

In the light of the above, we hereby agree for cooperation, collaboration and mutual support amongst the South-East Asian Countries in all spheres of Traditional Medicine in accordance with national priorities, legislations and circumstances, and specifically agree to make collaborative efforts aiming at the following:

- I. to promote National policies, strategies and interventions for equitable development and appropriate use of traditional medicine in the health care delivery system;
- II. to develop institutionalized mechanism for exchange of information, expertise and knowledge with active cooperation with WHO on traditional medicine through workshops, symposia, visit of experts, exchange of literature etc.;
- III. to pursue harmonized approach for the education, practice, research, documentation and regulation of traditional medicine and involvement of traditional medicine practitioners in health services;
- IV. to explore the possibility of promoting mutual recognition of educational qualifications awarded by recognized Universities, pharmacopoeias, monographs and relevant databases of traditional medicine;
- V. to encourage development of common reference documents of traditional medicine for South East Asian countries;
- VI. to develop regional cooperation for training and capacity building of traditional medicine experts;

VII. to encourage sustainable development and resource augmentation of medicinal plants in the South East Asian regional countries;

VIII. to establish regional centers as required for capacity building and networking in the areas of traditional medicine and medicinal plants and

IX. to exchange views, experiences and experts for integration of traditional medicine into national health systems in accordance with national policies and regulations.

Conclusion

Given that Homeopathy has the potential to improve individual health at lesser cost and by safer means, its proper integration into national health systems will enable consumers to have a wider choice. Though integration of Homeopathy and conventional medicine may be of the greatest relevance to population living with chronic disease or in health promotion, in certain circumstances it may contribute to the treatment of acute disease. There exists a problem of harmonization between the conventional and non-conventional therapies, including Homeopathy. However, appropriate integration is possible, as also addressed by Dr Margaret Chan, Director-General of WHO, who stated in a T&CM convention in February 2013 that: "The two systems of traditional and Western medicine need not clash. Within the context of primary health care, they can blend together in a beneficial harmony, using the best features of each system, and compensating for certain weaknesses in each. This is not something that will happen all by itself. Deliberate policy decisions have to be made. But it can be done successfully".³¹

³¹ WHO; <http://www.who.int/medicines/areas/traditional/congress/congressopening/en/>: Accessed on

CHAPTER: II

Users of Homeopathy

The users of Homeopathy are a significant part of evolution of Homeopathy worldwide. As Homeopathy spread in different parts of world, its users grew. However, there is a need to contemplate on the reasons that make a patient choose Homeopathy over conventional medicine.

During the time of Hahnemann, the reason that can be traced was the crude treatment methods prevalent then and more personal time in case-taking, which indirectly meant being taken seriously. Within the period 1843-1960, the recognition of the fact that Homeopathy was a 'harmless' therapy encouraged self-medication, which became a major reason for the increase in its users. The trend of prescribing within the family and relatives caught up. The homeopathic pharmacies played a major role in training the laymen about Homeopathy through manuals, guides and pamphlets. However, as health awareness grew in the second part of nineteenth century, the need for trained homeopathic practitioners increased. Such was the demand from the homeopathic users that sometimes a doctor in a locality was moved to familiarise himself with homeopathy, and, in the process, overcame his initial prejudices. Organised patient groups and societies in Germany in the early twentieth century lobbied repeatedly for chairs of Homeopathy in universities and ensured the cost of homeopathic medicines remained low. In places like London, Munich and some parts of USA, homeopathic hospitals existed, which, owing to their well-developed infrastructure, only well-to-do patients visited. The attempts of single committed doctors or those of the patients' groups to develop smaller homeopathic hospitals proved to be

short-lived, with most of these centers turning into orthodox hospitals towards the end of twentieth century. This was basically due to the changing attitudes of the doctors who preferred a more attractive scientific medicine. However, the public demand for Homeopathy continued to increase and as a result, the homeopathic market grew even after 120 years of Hahnemann's death³².

With the advances in the late twentieth century, the orthodox medicine saw a greater optimism by the patients, where the tangible progress made by the system seemed to be capable of conquering all epidemics. On the flipside though, it was gradually observed that the medical practices were incurring much cost, spending less time per patient and shedding the 'holistic' element of treatment. This, in turn, was seen as a compromise in the patient autonomy, a subject that has gained more importance ever since.³³ Even today, one reason why patients opt for homeopathic treatment is because they feel they enjoy more respect as individuals in this therapy.^{34,35}

To understand the new age users of homeopathy, it is important to visualise the scenario globally. While some factors that drive a patient to a homeopath remain fairly consistent worldwide, others vary as per the geographic or ethnic considerations. Anywhere in the world, however, in selecting a treatment, it is likely that a patient wants to know what chance s/he has of getting better after consulting a practitioner.³⁶ There is a chance that a patient, before selecting a therapy which s/he has not tested before, would either follow a recommendation by a friend or a relative^{37,38,39}, or, as is

³²Dinges M., Patients in the History of homeopathy, European association for the History of Medicine and Health Publications' 2002; pp. 2-16

³³ Dinges M., Patients in the History of homeopathy, European association for the History of Medicine and Health Publications' 2002; pp. 2-16

³⁴Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital; British Journal of General Practice; November 2002, 52, 901-05

³⁵ Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; Homeopathy (2014) 103, 51-57

³⁵Sharples FMC., Haselen R.V., Fisher P., NHS patients' perspective on complementary medicine: a survey; Complementary therapies in Medicine (2003; 11, 243-48

³⁶Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

³⁷ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

³⁸ Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

³⁹ Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; Homeopathy (2014)..., 1-7 (in print)

true for more sophisticated individuals, would gather more information about the therapy.⁴⁰ While the former is reported as a trend in countries like Norway⁴¹ and India⁴², the latter is catching on in various parts of the world. It is seen that the education level of patients who see a homeopath is usually high, with evidence reported from U.K.^{43,44,45}, France⁴⁶, Germany⁴⁷, Austria,⁴⁸ Brazil^{49,50}, USA⁵¹ and Switzerland.⁵² The spread of Homeopathy in Europe is reflected in Fig. 1 and Table 1. On assessment of the age profile of the users of Homeopathy, the consistent trend reported across all

nations including U.K.^{53,54}, Norway⁵⁵, Germany⁵⁶, Switzerland⁵⁷, India⁵⁸, U.S.A.⁵⁹, Belgium⁶⁰ and France⁶¹, is that most users belong to the middle age group ranging 35-55 years. Also, it has recently been reported that the patients who see a homeopath have a healthier lifestyle and a positive attitude towards CAM.⁶² This, coupled with a decent education level, reflects that an average homeopathic user of today is capable of making an informed choice, and his or her choice of using Homeopathy can be no different.

⁴⁰Jennifer F.H., Dip S.A. and Nancy L.; Doctor-Patient Communication: A Review; *The Ochsner Journal*; 10:38–43, 2010

⁴¹ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; *Homeopathy* (2005) 94, 10-16

⁴²Manchanda R. K. and Kaur H.; Medical pluralism: past, present, future; *Medical Pluralism in Health Care – Experience from New Delhi* (2013); by Robert Jütte; pp 189-94

⁴³ Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital; *British Journal of General Practice*; November 2002, 52, 901-05

⁴⁴Spence D. and Thompson E.A.; Homeopathic treatment for chronic disease: A 6-year, university-hospital outpatient observational study; *The Journal of Alternative and Complementary Medicine*; 11(5); 2005; pp 793-98

⁴⁵Robinson T., Responses to homeopathic treatment in National Service general practice; *Homeopathy* (2006) 95; 9-14

⁴⁶ Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; *Homeopathy* (2014) 103, 51-57

⁴⁷Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; *Explore July/August 2010* 6(4), pp 237-245

⁴⁸ Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; *Proceedings of 66th Liga Medicorum Homoeopathica Internationalis Congress 2011*

⁴⁹ Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; *Homeopathy* (2014)...., 1-7 (in print)

⁵⁰ Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; *Proceedings of 66th Liga Medicorum Homoeopathica Internationalis Congress 2011*

⁵¹ Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; *Proceedings of 66th Liga Medicorum Homoeopathica Internationalis Congress 2011*

Congress 2011

⁵²Pedro M. et al; Prevalence and characteristics of homeopathy users in a representative sample of the Lausanne population: CoLaus study; *Pharmacoepidemiology and Drug Safety* 2008; 17: 209-13

⁵³ Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital; *British Journal of General Practice*; November 2002, 52, 901-05

⁵⁴ Spence D. and Thompson E.A.; Homeopathic treatment for chronic disease: A 6-year, university-hospital outpatient observational study; *The Journal of Alternative and Complementary Medicine*; 11(5); 2005; pp 793-98

⁵⁵ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; *Homeopathy* (2005) 94, 10-16

⁵⁶ Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; *Explore July/August 2010* 6(4), pp 237-245

⁵⁷ Pedro M. et al; Prevalence and characteristics of homeopathy users in a representative sample of the Lausanne population: CoLaus study; *Pharmacoepidemiology and Drug Safety* 2008; 17: 209-13

⁵⁸Manchanda R.K, Verma S.K, Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; *Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices*; 91-104, 2013

⁵⁹Jennifer J., Patient characteristics and practice patterns of physicians using homeopathy; *Arch Fam Med/ Vol. 7. Nov/Dec 1998*; 537-40

⁶⁰ Framework of the practice: Belgium as an example; *Scientific framework of homeopathy: Evidence Based Homeopathy 2013*; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

⁶¹Colin P., An epidemiological study of a homeopathic practice; *British Homeopathic Journal* (2000) 89; pp 116-21

⁶² Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; *Homeopathy* (2014) 103, 51-57

Fig. 1 Regulation systems in Europe**Table 1 Regulation in European countries (CAM-CANCER report)**

	« fully controlled systems » n=19	« partial controlled systems » n=10	
Countries	Austria, Belgium, Cyprus, Czech Republic, Estonia, France, Germany, Greece, Hungary, Latvia, Lithuania, Luxembourg, Italy, Poland, Portugal Spain, Slovenia, Slovakia, Switzerland	Denmark, Finland, Iceland, Liechtenstein, Ireland, Malta, The Netherlands, Norway, Sweden, UK	
who is allowed to treat?	Statutorily regulated individuals.	Statutorily regulated individuals.	Everybody
Authorized Medical Activities:	“risky” medical procedures treating serious diseases safe medical procedures preventive/prophylaxis	“risky” medical procedures treating serious diseases safe medical procedures preventive/prophylaxis	safe medical procedures preventive/prophylaxis

Female preponderance in the demographic profile is another consistent finding in most studies.^{63,64,65,66,67,68,69,70,71,72,73,74,75} It has also been seen that these females usually have higher education.⁷⁶ One study⁷⁷ relates this to the fact that young and middle age women first seek homeopathic care in their reproductive ages, and then, being the health watchers of their families, take it further to their children, also leading to higher children inflow at homeopathic clinics. This perhaps explains why another prominent age group of homeopathic users is below 15.⁶³⁻⁷⁵ A recent study verifies the fact that children usually are accompanied with female also the homeopath.⁷⁹

Further, it has been observed that patients who use Homeopathy, especially in U.S.A.⁸⁰ and France⁸¹, belong to rather affluent class and are usually into more refined professions like that of teachers or is the only driving force for the patients, especially

parent.⁷⁸ This speaks of Homeopathy commonly perceived as a gentle and effective therapy by mothers for their children. Yet, the study by Wassenhoven reveals statistically that the parents usually are not comfortable informing their paediatrician about seeking homeopathic treatment for their children. Around half of parents whose children were undergoing a parallel treatment did not tell their paediatrician about it. Only for 38.3% of patients, both the paediatrician and the homeopath were fully aware of the treatment the patient was taking and for some of these, the paediatrician was

those who can afford private insurances^{82,83} and pricier treatment options.

The morbidity profile of the users varies greatly, depending both on the location and the type of set up. While a collective study from four countries of Europe⁸⁴ and separate ones from U.K.⁸⁵, Norway,⁸⁶

⁶³Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; Proceedings of

⁶⁶thLiga Medicorum Homeopathica Internationalis Congress 2011

⁶⁴Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital; British Journal of General Practice; November 2002, 52, 901-05

⁶⁵Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

⁶⁶Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; Homeopathy (2014)...., 1-7 (in print)

⁶⁷Manchanda R.K., Verma S.K., Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

⁶⁸Spence D. and Thompson E.A.; Homeopathic treatment for chronic disease: A 6-year, university-hospital outpatient observational study; The Journal of Alternative and Complementary Medicine; 11(5); 2005; pp 793-98

⁶⁸Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

⁶⁹Robinson T., Responses to homeopathic treatment in National Service general practice; Homeopathy (2006) 95; 9-14

⁷⁰Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; Explore July/August 2010 6(4), pp 237-245

⁷¹Pedro M. et al; Prevalence and characteristics of homeopathy users in a representative sample of the Lausanne population: CoLaus study; Pharmacoepidemiology and Drug Safety 2008; 17: 209-13

⁷²Manchanda R.K., Verma S.K., Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

⁷³Jennifer F.H., Dip S.A. and Nancy L.; Doctor-Patient Communication: A Review; The Ochsner Journal; 10:38-43, 2010

⁷⁴Colin P., An epidemiological study of a homeopathic practice; British Homeopathic Journal (2000) 89; pp 116-21

⁷⁵Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; Homeopathy (2014) 103, 51-57

⁷⁶Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; Homeopathy (2014) 103, 51-57

⁷⁷Robinson T., Responses to homeopathic treatment in National Service general practice; Homeopathy (2006) 95; 9-14

⁷⁸Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; Homeopathy (2014)...., 1-7 (in print)

⁷⁹Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; Homeopathy (2014)...., 1-7 (in print)

⁸⁰Jennifer F.H., Dip S.A. and Nancy L.; Doctor-Patient Communication: A Review; The Ochsner Journal; 10:38-43, 2010

⁸¹Colin P., An epidemiological study of a homeopathic practice; British Homeopathic Journal (2000) 89; pp 116-21

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⁸³Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; Homeopathy (2014) 103, 51-57

⁸⁴Riley D., Fischer M., Singh B., Haidvogel M. and Heger M., Homeopathy and conventional medicine: An outcomes study comparing effectiveness in a primary care setting; The Journal of Alternative & Complementary Medicine; 7(2) 2001; pp 149-159

⁸⁵Sharples F.M.C., Haselen R.V., Fisher P., NHS patients' perspective on complementary medicine: a survey; Complementary therapies in Medicine (2003; 11, 243-48

⁸⁶Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre

Belgium,⁸⁷ France,⁸⁸ USA,⁸⁹ Germany⁹⁰ and India⁹¹ advocate the positive effects of Homeopathy on many chronic ailments, studies from France, Belgium and Norway also reveal that Homeopathy can be used to treat acute illnesses just as effectively. The users of Homeopathy mark their improvement as above average^{63-75,92} mostly, or more than 50% so to say, within six months.⁹³ Among the most reported problems lie infectious diseases (both acute and chronic and especially viral), psychological illnesses⁹⁴ like sleep, anxiety and depressive disorders (SADD), rheumatological illnesses, cardiovascular illnesses, dermatological problems, gynaecological problems, endocrinological problems and respiratory allergic illnesses⁶¹⁻⁷³. At least two studies^{95,96} reflect that a short time of 5-10 minutes duration, especially at primary healthcare centers or hospitals (where the set up and available time are different from the private clinics), was not a deterrent to providing adequate homeopathic consultation in most cases. A study revealed that the allocated time to a homeopathic physician was very similar to those for other chronic disease specialists like rheumatologists, neurologists and was substantially

shorter than what was allocated to psychiatrists. Yet another study from India revealed a rather ironical situation where a singly employed homeopathic doctor in a PHC is able to spend on an average only 5.2 minutes per patient due to the patient overload, as opposed to 12.9 minutes available to the conventional doctors, who are more in number in the same center. Nevertheless, the popularity of such clinics is increasing. These examples reflect the viability of Homeopathy as a workable model at the primary healthcare level. Further, such real-world examples counter argue the 'more consultation time' reasoning offered by the sceptics as one of the 'placebo' factors that make Homeopathy work.

Overall, the factors that primarily attract the patients to Homeopathy have been assessed as 'worried about side effects of other treatment methods'^{97,98,99,100,101}, 'no results from conventional medicine or evading its long term treatment'^{102,103} 'better consultation experiences'¹⁰⁴, 'personal

outcome study; Homeopathy (2005) 94, 10-16

⁸⁷ Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after

⁸⁸ Colin P., An epidemiological study of a homeopathic practice; British Homeopathic Journal (2000) 89; pp 116-21

⁸⁹ Jennifer F.H., Dip S.A. and Nancy L.; Doctor-Patient Communication: A Review; The Ochsner Journal; 10:38-43, 2010

⁹⁰ Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; Explore July/August 2010 6(4), pp 237-245

⁹¹ Manchanda R.K, Verma S.K, Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

⁹² Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

⁹³ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

⁹⁴ Grimaldi-Bensouda L, Engel P, Massol J, et al. Who seeks primary care for sleep, anxiety and depressive disorders from physicians prescribing homeopathic and other complementary medicine? Results from the EPI3 population survey. BMJ Open 2012;2:e001498. doi:10.1136/bmjopen-2012-001498

⁹⁵ Manchanda R.K, Verma S.K, Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

⁹⁶ Spence D. and Thompson E.A.; Homeopathic treatment for chronic

disease: A 6-year, university-hospital outpatient observational study; The Journal of Alternative and Complementary Medicine; 11(5); 2005; pp 793-98

⁹⁶ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; Homeopathy (2005) 94, 10-16

⁹⁷ Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy report of their children's health-related Quality of Life in six European countries and Brazil; Homeopathy (2014)...., 1-7 (in print)

⁹⁸ Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; Proceedings of 66th Liga Medicorum Homeopathical Internationalis Congress 2011

⁹⁹ Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; Explore July/August 2010 6(4), pp 237-245

¹⁰⁰ Sharples FMC., Haselen R.V., Fisher P., NHS patients' perspective on complementary medicine: a survey; Complementary therapies in Medicine (2003; 11, 243-48

¹⁰¹ Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; Homeopathy (2014) 103, 51-57

¹⁰² Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

¹⁰³ Sharples FMC., Haselen R.V., Fisher P., NHS patients' perspective on complementary medicine: a survey; Complementary therapies in Medicine (2003; 11, 243-48

¹⁰⁴ Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homeopathic Hospital; British Journal of General Practice; November 2002, 52, 901-05

preference or family trend'^{105,106,107,108} 'lesser cost'^{109,110}, 'overall well being'^{111,112,113,114,115}, 'traditional belief in the immaterial or holistic concept'^{116,117}, 'awareness about the lack of role of antibiotics in viral diseases'¹¹⁸ and 'distrust in conventional medicine'.^{119,120}

It can be concluded that Homeopathy is being preferred by its users for reasons that are partly due to increasing realisation by its users of its own virtues like 'holism, harmless therapy and cost-effectiveness', but also partly due to the rising distrust among the users for the existing practices in the conventional medicine.

¹⁰⁵ Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre outcome study; *Homeopathy* (2005) 94, 10-16

¹⁰⁶ Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

¹⁰⁷ Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; *Homeopathy* (2014)...., 1-7 (in print)

¹⁰⁸ Sharples F.M.C., Haselen R.V., Fisher P., NHS patients' perspective on complementary medicine: a survey; *Complementary therapies in Medicine* (2003; 11, 243-48

¹⁰⁹ Manchanda R.K., Verma S.K., Chhatre L.V., Kaur H., Homeopathy in Urban Primary Healthcare Units of the Delhi Government: An Assessment; Dinges M.; Medical Pluralism and Homeopathy in India and Germany (1810-2010): A comparison of practices'; 91-104, 2013

¹¹⁰ Spence D. and Thompson E.A.; Homeopathic treatment for chronic disease: A 6-year, university-hospital outpatient observational study; *The Journal of Alternative and Complementary Medicine*; 11(5); 2005; pp 793-98

¹¹¹ Stewart W. M., David R., Graham C.M.W., The importance of empathy in the enablement of patients attending the Glasgow Homeopathic Hospital; *British Journal of General Practice*; November 2002, 52, 901-05

¹¹² Steinsbekk A., and Ludtke R., Patients' assessments of the effectiveness of homeopathic care in Norway: A prospective observational multicentre

outcome study; *Homeopathy* (2005) 94, 10-16

¹¹³ Framework of the practice: Belgium as an example; Scientific framework of homeopathy: Evidence Based Homeopathy 2013; Revised edition after 67th LMHI Congress, September 2012 (Nara, Japan); pp 22-26

¹¹⁴ Dinges M., The next decade for Homeopathy: Any lessons from the last decade?; Proceedings of 66th Liga Medicorum Homeopathica Internationalis Congress 2011

¹¹⁵ Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; *Homeopathy* (2014) 103, 51-57

¹¹⁶ Arndt B., Thomas O., Christa R., and Peter F.M., Adaptive coping strategies and attitudes toward health and healing in German Homeopathy and Acupuncture users; *Explore* July/August 2010 6(4), pp 237-245

¹¹⁷ Lert et al; Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine; *Homeopathy* (2014) 103, 51-57

¹¹⁸ Colin P., An epidemiological study of a homeopathic practice; *British Homeopathic Journal* (2000) 89; pp 116-21

¹¹⁹ Wassenhoven M.V., Pediatric homeopathy: A prospective observational survey based on parent proxy reports of their children's health-related Quality of Life in six European countries and Brazil; *Homeopathy* (2014)...., 1-7 (in print)

¹²⁰ Pedro M. et al; Prevalence and characteristics of homeopathy users in a representative sample of the Lausanne population: CoLaus study; *Pharmacoepidemiology and Drug Safety* 2008; 17: 209-13

CHAPTER: III

EDUCATIONAL FRAMEWORK OF T&CM/ HOMEOPATHY

Education in Homœopathy aims to enable graduates to develop as independent and competent public health providers, to work in a variety of roles ranging from private practice to being an integrated member of a team of healthcare practitioners working in large scale clinical setting. Whereas India has adopted an organized university level education system, at par with corresponding conventional and other Indian medicine systems in the country, most other countries in the world are still to adopt independent educational courses.

The education system in many countries is well regulated and practitioners are trained medical practitioners. International Homœopathic associations such as LMHI, British Homeopathic Association (BHA), European Committee for Homeopathy (ECH) and several others in respective countries facilitate practice, learning, education and research. The standards of education and practice have been defined; e.g., ECH Homœopathic Medical Education Standards and accredited diploma courses are conducted by the LMHI. There is wide variation in educational standards and syllabi in different regions.

Austria:

- Officially recognized diploma as an additional qualification (medical doctor / veterinary doctor qualified in homeopathy). Postgraduate education. Optional introductory course on CAM during basic education at the universities of Vienna, Innsbruck and Graz.
- In 10 hospitals homeopathic care is possible on consultation.

Belgium:

- Post-graduate diploma delivered by private

schools. A National diploma exists delivered by the Homeopathic Faculty, grouping the different schools.

- A compulsory optional introductory course at the University of Leuven (U.C.L.)
- No official possibility for homeopathic care in hospitals but patient's rights include homeopathy as a possible patient choice in collaboration with the family medical doctor.

Bulgaria:

- Postgraduate diploma in private schools recognized by the medical association.
- No possibility of homeopathic care in hospitals.

Czech Republic:

- Postgraduate diploma in private schools.
- No possibility of homeopathic care in hospitals.

Denmark:

- Education in private schools open for everybody (no formal medical education required)
- No possibility of homeopathic care in hospitals.

Finland:

- Education in private schools, open for everybody (no foregoing medical education required)
- No possibility of homeopathic care in hospitals.

France:

- Officially recognized diploma as an additional qualification (medical doctor /veterinary doctor qualified in homeopathy). Post-graduate

education at the universities in Aix-Marseille, Besançon, Lille, Paris-Bobigny, Bordeaux II, Limoges, Poitiers and Lyon. Private schools also exist. Optional introductory course of CAM during the basis education at some universities

- In 2 hospitals patients can come for a homeopathic consultation: Hôpital St. Jacques en Hôpital St. Luc Paris.

Germany:

- Officially recognized diploma as an additional qualification (medical doctor /veterinary doctor qualified in homeopathy). Post-graduate education at the universities of Berlin, Düsseldorf, Hannover, Heidelberg and Freiburg. Private schools also exist
- Compulsory optional introductory course of CAM during the basic education at some universities
- In 1 hospital patients can come for a homeopathic consultation: 'Charité'hospital in Berlin.

Greece:

- Postgraduate diploma in private schools and some universities.
- No possibility of homeopathic care in hospitals.

Hungary:

- No homeopathic education for doctors and pharmacists on universities. Postgraduate diploma in private schools, recognised as a requirement for the university exam on homeopathy, which needs for official private praxis on homeopathy.
- No possibility for homeopathic care in hospitals.

Ireland:

- Postgraduate diploma in private schools, open for everybody (no foregoing medical education required).

- No possibility for homeopathic care in hospitals.

Italy:

- Officially recognized diploma as an additional qualification (medical doctor /veterinary doctor qualified in homeopathy). Post-graduate courses for medical doctors in Bologna, Roma, Siena (also dentists and pharmacists) Universities.
- Postgraduate diploma in private schools for medical doctors, dentists, veterinarians, pharmacists. Postgraduate diploma organized by the Provincial Medical College in Reggio Calabria.
- No possibility for homeopathic care in hospitals at this moment but announced.

Luxembourg:

- Postgraduate diploma in private schools.
- No possibility for homeopathic care in hospitals.

Netherlands:

- Postgraduate diploma in private schools.
- Optional introductory course of CAM during the basis education at some universities
- No possibility for homeopathic care in hospitals.

Norway:

- Education in private schools, open to everybody (no foregoing medical education required).

Poland:

- Officially recognized diploma as an additional qualification (medical doctor /veterinary doctor qualified in homeopathy). Post-graduate education at 8 universities. No possibility for homeopathic care in hospitals.

Portugal:

- Postgraduate diploma in private schools.
- No possibility for homeopathic care in hospitals.

Romania:

- Officially recognized diploma as an additional qualification (medical doctor/veterinary doctor qualified in homeopathy). Post-graduate education at 8 universities. Optional introductory course of CAM during the basis education at some private universities
- No possibility for homeopathic care in hospitals.

Slovenia:

- Postgraduate education at the private school of the Slovenian Homeopathic Society accredited by ECH.
- No possibility for homeopathic care in hospitals.

Spain:

- Officially recognized diploma as an additional qualification (medical doctor/veterinary doctor qualified in homeopathy). Post-graduate education at the universities of Sevilla, Murcia and Barcelona.
- Optional introductory course of CAM during the basis education at some universities
- No possibility for homeopathic care in hospitals.

Sweden:

- Education in private schools open for everybody (no foregoing medical education required).
- No possibility for homeopathic care in hospitals.

Switzerland:

- Postgraduate diploma in private schools. At the university of Bern education in CAM is available.
- Homeopathic care only in private hospitals.

Great-Britain:

- Officially recognized diploma as an additional qualification (medical doctor/veterinary doctor qualified in homeopathy). The official recognized “Faculty of Homeopathy” delivers the diplomas. Postgraduate education in private schools, open for everybody.
- Optional introductory course of CAM during the basis education at some universities
- In 4 hospitals homeopathic consultations are possible: London, Liverpool, Bristol and Glasgow.

Turkey:

- Homeopathy is now regulated within the Traditional and Complementary Medicine regulation which was released at the end of November 2014 in Turkey.
- There are no homeopathic doctors with additional qualification on homeopathy yet.
- Post-graduate courses only in universities with a Traditional and Complementary Medicine Department.
- Officially recognized certificates as an additional qualification (MD, dentists) is given by the Health Ministry only for the courses in the Universities
- Private schools are not recognized

South-east Asian Region (SEAR)

Bangladesh

- Educational Institutes of Traditional medicine offers 04 year diploma courses.
- Five Ayurvedic and ten Unani Institute are recognized by the Bangladesh Board of Unani & Ayurvedic System of Medicine.
- The Government established a Unani and Ayurvedic Degree College at Mirpur in 1989 which offers Bachelor Courses in respective fields.
- The Registrar of the Board serves as the Controller of Examinations.

- 44 homeopathic colleges for DHMS and 03 homeopathic colleges for BHMS degree under Bangladesh Homoeopathic Board.

Bhutan

- Officially recognized formal training of traditional medical doctors (drungtsho) began in 1978 with the establishment of a five-year drungtshoprogramme.
- In 1979, the programme became part of the National Institute of Traditional Medicine (NITM).
- The course now consists of five years of institutional training followed by a six-month internship. In 1998, NITM was upgraded to Institute of Traditional Medicine Services.

Burma

- Burma Homoeopathic Society (BHS) conducts classes and issues certificates.
- A one-year course teaches basic principles of Myanmar TM.
- The University of Traditional Medicine confers a Bachelor's degree after four years of training and a one-year internship.
- TM is included in the curriculum of third year M.B.B.S.

DPR Korea

- Pharmacologists of traditional medicines are trained.
- Koryo medicine is taught at the KM faculties of the medical universities having Koryo pharmacology departments.
- The duration of the course is 07 years

India

- In India, organized education in Homœopathy began in the pre-independence period, beginning in Calcutta with the establishment of first homœopathic college, 'Calcutta Homœopathic Medical College' in 1883.

Subsequent to the passing of the Central Council bill in both the houses of the parliament, the then President of India gave his assent to the Homœopathy Central Council Act 1973 on 19th December 1973. As per the provisions of the Act, the Government constituted the Central Council of Homœopathy (CCH) to regulate education and practice of the system.

- Following courses for homœopathic education are available in the country:
 - BHMS Course: The Bachelor of Homœopathic Medicine and Surgery (BHMS) is presently the basic educational qualification in Homœopathy. It is a regular full-time 5 ½ years graduate medical degree (including one year of compulsory internship training). The students are imparted training and teaching in pre-clinical, para-clinical and clinical subjects.
 - Post Graduate Degree Course: In 1989, the Homœopathy (Post Graduate Degree Course), Regulations were notified, through which post graduation was made available in 3 specialty subjects. In 2001, four new specialty subjects were included. Physicians with a basic graduate homœopathic degree can opt for Doctor of Medicine (Homœopathy) with options for specialization in the following subjects: Practice of Medicine, Pediatrics, Psychiatry, Homœopathic Pharmacy, Organon of Medicine & Homœopathic Philosophy, Materia Medica and Repertory.
 - Post-doctoral research programs (Ph. D.) in Homœopathy: This has of late been initiated by some universities.
- There are 260 UG, 67 PG colleges of Ayurveda; 14 UG colleges of Yoga & Naturopathy; 40 UG and 06 PG colleges of Unani; 07 UG and 03 colleges of Siddha and 183 UG and 39 PG colleges of Homeopathy. Education in respective discipline is regulated by the respective councils.

Indonesia

- Homeopathy Diploma Program is granted by the College
- Training courses in traditional medicine by Centre for Traditional Medicine Research and Directorate of Selected Community Health Development, also under the Ministry of Health and Social Welfare.
- A Diploma Programme in Traditional Medicine (three years, part of Study Programme of Medical Faculty), complementary and alternative clinics (eight clinics in government hospitals) and private hospitals, and Model Community Health Care Centre for Complementary and Alternative Services have been established.
- The Indonesian homoeopathic College under the auspices of the Association of Homoeopath Indonesia

Nepal

- Formal education in the ayurvedic system is under the supervision of the Institute of Medicine of Tribhuvan University.
- Ayurveda Campus trains Ayurveda graduates (BAMS, a 5½-year course) in the country.
- Mahendra Sanskrit University provides Ayurveda Certificate level training courses (30 months duration)
- Council of Technical Education and Vocational Training (CTEVT) provides 15 months.
- Nepal Homoeopathic Medical College is the first and only homeopathic college in Nepal, currently offering 4½ years of study and 1 year of internship. This leads to a B.H.M.S. (Bachelor of Homoeopathic Medicine and Surgery) degree.
- Homeopathic Health Assistant (HHA) program is also approved by Council for Technical Education and Vocational Training.

Sri Lanka

- There are two teaching institutes in Sri Lanka.
- National Institute of Traditional Medicine carries out educational and training programmes for traditional

and ayurvedic practitioners, school children, and the general public.

- The Department of Ayurveda provide alternative resources for Ayurvedic Medical Officers to obtain postgraduate qualifications through the Institute of Indigenous Medicine at the University of Colombo, Rajagiriya.
- Council is empowered to register and recognize homeopathic medical practitioners; recognize homeopathic teaching institutes, dispensaries, and hospitals; hold examinations and award degrees in homeopathic medicine; and arrange for postgraduate study in homeopathy

Thailand

- The systematic teaching of TTM including bachelor's education is imparted by various Institutes and Universities.
- 02 Years standard program of Certificate of Post Graduated in Homeopathy is offered by Homoeopathic Association of Thailand (HAT).

Summary:

In the world, the use of homeopathy has increased in many countries, which, in turn, is resulting in increased education needs of the science. In many parts of Europe, homeopathy, as other CAM therapies, is already partly regulated. Homeopathy is integrated in 6 of the 22 countries. Medical students get familiar with CAM by an introduction course in 9 of the 22 countries.

A postgraduate diploma in homeopathy is recognized in 18 of the 22 countries. In south-east Asia, the homeopathic status is more evolved with most countries imparting homeopathic education through government regulatory bodies. However, around the world, India remains the infrastructural leader with as many as 195 and 43 colleges for undergraduation and postgraduation in Homeopathy, respectively. Having said that, there is a need to devise a common path which enables a standardised framework for homeopathic education which is taught and recognised in every part of the world.

CHAPTER: IV

SAFETY ISSUES IN HOMEOPATHY

A general consensus exists on the fact that homeopathic treatment is safe and causes minimal to no adverse effects.¹²¹ This, in fact, is one of the unique assets of Homeopathy, which has worked in favour of the science, especially in today's era of adverse drug effects from long term treatment. Nonetheless, the researchers have tried to substantiate this existing truth with scientific data. Safety, as perceived by the medical science, has more meaning than one, with both direct and indirect risks included.¹²² A homeopathic treatment is said to be safe when:

1. It doesn't cause adverse drug effects (ADE) in the patient
2. Inadequate qualification of a practitioner doesn't come in the way of establishing a right diagnosis, which could debar the patient from right treatment or timely reference
3. The medicines are quality-assured, and, therefore, safe

Critics have argued that even though homeopathic medicines are ultra-diluted, incidence of ADE have been reported.¹²³ Nevertheless, these have largely been non-serious in nature. On the other hand, homeopathic aggravation is not to be confused with adverse drug effects, as it is a homeopathic phenomenon wherein a patient reports of slight worsening of the clinical symptoms, with a general sense of well being, followed by overall relief.¹²⁴ Such an occurrence is interpreted as a positive development in the course of homeopathic treatment. Interestingly, the incidence of homeopathic aggravation have been reported in research papers, which speaks in favour of the plausibility of homeopathy, with its ultra-diluted medicines stirring a response in an individual. Many homeopaths claim to have

observed aggravations in 60–70% of their cases. They emphasize that 'as a practitioner you have to ask the patients about aggravation, if you don't, they will seldom tell you'.¹²⁵ More logical rationale behind this concept is, however, wanting. Anyhow, most homeopathic aggravations, being self-limiting, do not call for any counteraction by the homeopathic physician, and hence are not taken into account as an adverse effect. In some cases, however, the response stirred can be out of proportion, mostly owing to frequent repetition or overdosage, and needs to be settled with an antidote. Such occurrences fall in the category of ADE and accounted as such. Besides, the homeopathic medicines, taken in a combined form with other medicines, don't remain purely homeopathic in nature and the adverse reactions from such medicines can not directly be attributed to the homeopathic medicines used.¹²⁶

What unfortunately remains a matter of concern is that not many clinical researches report of either ADE or homeopathic aggravation, thus barring the true analysis of the safety index of homeopathic treatment.¹²⁷ More researches focussing on this particular aspect would be a step in the right direction. Notwithstanding, so far, most researches and reviews carried out in this context conclude that homeopathic treatment is largely safe.¹²⁷⁻¹²⁹ However, there is a need to enhance understanding about clear cut differentiating points between ADE and homeopathic aggravation.

Further, ensuring adequate qualification of homeopathic physicians is another core action area to safeguard the right of the patients to safe treatment. It is important that no profession earns a bad name simply because a doctor wasn't

¹²¹Bornhoft G, Matthiessen PF. Homeopathy in healthcare—effectiveness, appropriateness, safety, costs. Berlin: Springer; 2011.

¹²²Ernst E. The safety of homeopathy. Editorial. Br Horn J 1995; 84: 193-4.

¹²³Posadzki P., Alotaibi A., Ernst E.. Adverse Effects of Homeopathy: A Systematic Review of Published Case Reports and Case Series; Int J Clin Pract. 2012;66(12):1178-1188.

¹²⁴Endrizzi C, Rossi E, Crudeli L and Garibaldi D; Harm in homeopathy: Aggravations, adverse drug events or medication errors?; Homeopathy (2005) 94, 233–240

¹²⁵Trine Stub, Anita Salomonsen, Terje Alraek; Is It Possible to

Distinguish Homeopathic Aggravation from Adverse Effects? A Qualitative Study; ForschKomplementmed 2012;19:13–19

¹²⁶Endrizzi C, Rossi E, Crudeli L and Garibaldi D; Harm in homeopathy: Aggravations, adverse drug events or medication errors?; Homeopathy (2005) 94, 233–240

¹²⁷F Dantas and H Rampes; Do homeopathic medicines provoke adverse effects? A systematic review; British Homeopathic Journal (2000) 89, Suppl 1, S35-38

able to diagnose a rather serious case with threatening prognosis leading to dire consequences, also breaching the patient ethics in turn. Lack of knowledge of a physician makes homeopathy, or any other treatment for that matter, indirectly unsafe.¹²⁸ Efforts are in progress to standardise the homeopathic education in the world to ensure patients' safety in this regard. LMHI & ECH have together taken some key initiatives to standardise the education scenario of homeopathy worldwide.¹²⁹

Additionally, with the worldwide increase in the use of homeopathic medicines and the rapid expansion of the

global market, the safety and the quality of homeopathic medicines has become a major concern for health authorities, pharmaceutical industries and consumers. To assure quality of homeopathic medicines, WHO has prepared a document on safety issues that stresses upon Good Manufacturing Practices (GMP) and mentions all the necessary guidelines required to be followed for manufacturing homeopathic medicines.¹³⁰ It should be the mandate of the drug regulatory body of every country to ensure the WHO guidelines are strictly adhered to by the homeopathic pharmaceutical industries.

¹²⁸Ernst E. The safety of homeopathy. Editorial. Br Horn J 1995; 84: 193-4.

¹²⁹Medical Homeopathic Education Standards for ECH And LMHI Allied Schools; European Committee for Homeopathy, 2001 & Liga Medicorum Homoeopathica Internationalis, 2005; Amended Version 2008

¹³⁰Safety issues in the preparation of homeopathic medicines; WHO Library Cataloguing-in-Publication Data; 2009

CHAPTER : V

ETHICAL ISSUES IN HOMEOPATHY

The Father of Medicine, Hippocrates, has left rich medical and ethical heritage. His collection of treatises *Corpus Hippocraticum*, from 5th and 4th centuries BC, comprise not only general medical prescriptions, descriptions of diseases, diagnoses, dietary recommendations etc., but also his opinion on professional ethics of a physician. The Hippocratic Oath, taken by ancient and medieval doctors, requires high ethical standards from medical doctors. Its principles are important in professional and ethical education of medical doctors even today.¹³¹ It is incredible to think that 'ethics' was talked of even 2000 years ago.

However, today ethics is a very large and complex field of study with many branches or subdivisions dealing with all aspects of human behaviour and decision-making. The focus of this chapter is medical ethics, especially concerning Homeopathy.¹³² A wide range of ethical issues that a homeopath is subject to is no different from the ones considered by the practitioners of the conventional medicine. Principle-based ethics, widely respected and followed in today's times, are divided into four categories, including – respect for autonomy, duty of beneficence, duty of non-maleficence and respect for justice. We shall see in the following text how homeopathic practice is in accordance with these ethics.

Respect for autonomy

Autonomy, or self-rule, requires the practitioner to respect the right of patients to make their own decision, be it with respect to their line of treatment, confidentiality, or anything else. The assumption is that mentally competent adults are able to make rational choices for themselves, based on adequate information. Such ethics, should not, however, come in way of autonomy of others. In respecting

this principle, a homeopath, makes sure that the patient is well informed about his illness and course of treatment and respects his or her autonomy when the patient seeks confidentiality, especially because s/he asks for more personal information from the patient for an analytical case-taking that guides correct prescription.

Duty of beneficence

The principle of beneficence is associated with benefiting patients through curing, helping and healing. For a homeopath, the term has a wider meaning as a homeopath does not only limit to benefiting a patient physically, but also mentally and emotionally. That makes his duty professionally broader demanding wider range of skills and competencies. This aspect also includes assessing the situation correctly and when the treatment ceases to provide benefit or is of limited benefit in comparison to some other line of treatment, it is ethically advisable to refer the patient or offer the treatment as only an adjuvant.

Duty of non-maleficence

The principle of non-maleficence, requires the practitioner to refrain from any behaviour which can cause harm to a patient. Overriding the patient's autonomy, for example, by disregarding their expressed wishes, will constitute harm. Emotional, physical, verbal or sexual abuse would certainly constitute harm. A homeopath, in order to avoid any harm to the patient at emotional level, besides the physical level, is skilled enough to handle a patient's emotions and illnesses with compassion. On another note, since Homeopathy offers one of the most gentle and harmless approaches towards treatment, it is logical to administer this therapy first along with other CAM options,

¹³¹Bujalkova M; Hippocrates and his principles of medical ethics; Bratisl Lek Listy 2001; 102 (2): 117-120

¹³²World Medical Association; Medical Ethics Manual; 2nd edition 2009; pp 9

with the technology of conventional medicine being used as a back up when needed.¹³³ However, severity of a patient's condition is given due consideration to decide which treatment is used first. For example, in a case of cancer, where chemotherapy is strongly advised, the drastic side effects resulting from it can be overlooked keeping in mind the likelihood of success.

Respect for justice

The 'respect for justice' imposes a duty on physician to act fairly and justly to all their clients regardless of age, gender, class or race. A homeopath is, therefore, ethically bound to distribute benefits and burdens to all his patients in a fair and even manner. This also includes the legal aspect of justicem, by which patients enjoy acknowledgement and compensation should something go wrong. Practitioners, in such a case, are expected to respond in a fair and even-handed manner to any complaints made against them.

On the whole, the homeopathic treatment and researches address all the ethical issues concerning its patients.

However, critics argue that the homeopathic treatment is unethical and its use in public should be stopped on this ground. They emphatically claim that even though Homeopathy is popular among the lay people and a significant number of medical professionals¹³⁴, it is best to discontinue its services as its laws are questionable and medicines not more than a placebo. The argument is stretched so far to say that providing homeopathic therapy to a patient is deceitful and a compromise of patient ethics. What is also argued is that since the evidence for efficacy of homeopathy is unsupportive, any expenditure of the

government on promotion or funding of Homeopathy, be it practice or research, or that of the patient on its treatment, is a waste of resources, and hence a breach of medical ethics^{135,136}

The actual situation is, however, different from what critics seem to project. As has been pointed out in many rejoinders to such arguments^{137,138,139,140}, Homeopathy can be anything but unethical, considering its 'harmless' and safe treatment. Going by the golden maxim used in medicine and also advocated by Hippocrates in his medical oath, 'Primum non nocere – Above all, do no harm', Homeopathy is one system of medicine that has offered most harmless treatments to mankind¹⁴¹. To say that its practitioners are banking upon the element of 'placebo' for healing and deceiving patients in the name of treatment, is making a defamatory statement which is in contradiction to the available facts. One can not simply overlook the fact that there exist not only several clinically recognised effects of Homeopathy, which has led to a following of 200 million worldwide¹⁴², but also that upto the end of 2011, 163 randomised controlled trials (RCTs) comparing homeopathy with placebo or conventional medicine have been published in peer-reviewed journals. In terms of statistically significant results, 78 of these were able to draw firm conclusions: 67 were positive for Homeopathy and 11 were negative¹⁴³. On the other hand out of many RCTs published in conventional medicine, an analysis reflects that a major 51% of the treatment belonged to the category of 'unknown effectiveness', while only 11% of it was clearly beneficial.¹⁴⁴ And if one adds to that the iatrogenic effects of the treatment, the figures do not speak very positive of the conventional treatment. In that

¹³³Stone J., *An ethical framework for Complementary & Alternative therapists*; Routledge 2002

¹³⁴Smith K.; *Against homeopathy – A utilitarian perspective*; Bioethics; 2012 Oct; 26(8):398-409

¹³⁵Smith K.; *Against homeopathy – A utilitarian perspective*; Bioethics; 2012 Oct; 26(8):398-409

¹³⁶Shaw D.; *Unethical aspects of homeopathic dentistry*; Br Dent J. 2010 Nov 27;209(10):493-6

¹³⁷Milgrom L1, Chatfield K.; *Is homeopathy really 'morally and ethically unacceptable'? A critique of pure scientism*; Bioethics. 2012 Nov;26(9):501-3

¹³⁸Eames S., Darby P.; *Homeopathy and its ethical use in dentistry*; Br Dent J. 2011 Apr 9;210(7):299-301.

¹³⁹Sebastian I. *Homeopathy and extraordinary claims--a response to Smith's*

utilitarian argument; Bioethics. 2012 Nov;26(9):504-5

¹⁴⁰Bellavite P.; *On the plausibility of homeopathic 'similitude'*; Bioethics; 2012 Nov;26(9):506-7

¹⁴¹Bornhoft G, Matthiessen PF. *Homeopathy in healthcare—effectiveness, appropriateness, safety, costs*. Berlin: Springer; 2011.

¹⁴²Bellavite P.; *On the plausibility of homeopathic 'similitude'*; Bioethics; 2012 Nov;26(9):506-7

¹⁴³British Homeopathic Association; *The research evidence Base for Homeopathy*. http://www.british-homeopathic.org/export/sites/bha_site/research/evidencesummary.pdf; Accessed on June 16, 2014

¹⁴⁴Sebastian I. *Homeopathy and extraordinary claims--a response to Smith's utilitarian argument*; Bioethics. 2012 Nov;26(9):504-5

sense, is it right to say that the conventional treatment is 'unethical' or trying to 'deceive'? It is not true because of the benefits it provides to the patients. In the same argument, it is then apt to say that Homeopathy, with a relatively established effectiveness and safety, cannot be termed as 'unethical' or ruled out of the treatment options in public domain on the basis of the factors like 'harmful' or 'placebo'.

As regards the expenditure on Homeopathy or its research being referred to as the waste of resources, and therefore unethical, it seems, considering the growing amount of evidence in favour of Homeopathy, both in humans and laboratory studies, funding for further research in Homeopathy is most warranted and ethically justifiable. The existing researches indicate that Homeopathy is not only plausible, but constitutes one of the frontiers of medical science, and more specifically of complexity science, biophysics, and nanopharmacology.¹⁴⁵ Further, the expenditure being incurred on Homeopathy by the government or patients for the purpose of treatment, is much lesser than the total portion of the budget that is

spent on public or individual healthcare, respectively, as also supported by many analyses.¹⁴⁶ In fact, Homeopathy is one of the most cost-effective treatment options available today. In contrast, many a time, a patient refers to Homeopathy after the conventional treatment has failed to relieve. In that case, will the amount spent on the treatment that failed to respond be called a waste of resources?

In conclusion, it is clearly evident that Homeopathy is an ethical system of medicine which provides safe, cost-effective and holistic treatment to its patients. Also, quite like the practitioners and researchers of other therapies, homeopathic professionals should ardently adhere to the ethical issues related to their patients or other subjects while carrying out a treatment or research. However, to make the medical stream more ethical as a whole, it is imperative that various therapies work together in an integrated fashion, so that the health and cost benefits to the patients are maximised and ill effects minimised. In all such interactions the well-being of patients should be the primary consideration.¹⁴⁷

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¹⁴⁶ Viksveen P1, Dymitr Z, Simoens S.; Economic evaluations of homeopathy: A

review; Eur J Health Econ. 2014 Mar;15(2):157-74

¹⁴⁷ Medical Ethics Manual; World Medical Association; 2nd edition 2009; pp 91

CHAPTER: VI

META ANALYSES - SYSTEMATIC REVIEW

The “gold standard”, accepted by everybody to evaluate the efficacy of a remedy is a meta-analysis or a systematic audit of RCTs. It is considered an apt method of review owing to its unique feature of providing heirachical evidence to a study (Table 2). Since 1991, six comprehensive reviews concerning homeopathy were published.

The conclusion of most comprehensive systematic reviews has been that homeopathy has a positive andspecific effect greater than placebo alone. Several randomized and controlled studies (RCT) showed a statistical significance difference between homeopathy and placebo. More research is justified.

Report about all comprehensive systematic reviews on homeopathic trials

Table 2

Level of evidence :

I = the existence of meta-analyses and/or systematic positive « reviews » of the literature. **Ila** = controlled multiplied experiments, randomised, positive results.

Ilb = some controlled experiments, randomised, positive results.

IIla = study with multiple cohorts, positive results.

IIlb = study with some cohorts, positive results.

IV = opinion of experts (clinical and daily cases)

- Kleijnen & al. 1991 British Medical Journal.¹⁴⁸

105 studies with interpretable results. Meta-analysis based on validated criteria.

77 % of the studies show positive result for homeopathy.

The results are mostly favourable for homeopathy regarding the quality of trials.

“There is a legal argument for further evaluation of homeopathy”.

- Boissel et al¹⁴⁹ 1996 Report for the European commission. 15 studies. Inclusion of only very rigorous studies (highest quality).

Combined p-values for the 15 studies is significant. (p = 0.0002).

“It is evident that homeopathy is more efficient than placebo”.

Little evidence for non-published negative results.

Further research is justified.

- Linde et al¹⁵⁰ 1997 The Lancet. 89 studies.

“Odds ratio” combined 2.45 (95 % CI, 2.05-2.93) in favour of homeopathy.

“Odds ratio” for the best 26 studies was 1.66.

It is not possible that the clinical effects of homeopathy are due completely to placebo.

- Linde and Melchart¹⁵¹ 1998 Journal of Alternative and Complementary Medicine. 32 studies, inclusion of

¹⁴⁸Kleijnen J, Knipschild P, ter Riet G. Clinical trials of homeopathy British Medical Journal 1991;302:316-323.

¹⁴⁹Boissel JP, Cucherat M, Haugh M, Gauthier E. Critical literature review on the effectiveness of homeopathy: overview of data from homoeopathic medicine

trials. Homoeopathic Medicine Research Group. Report to the European Commission. Brussels 1996, 195-210.

¹⁵⁰Linde K e.a. Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo-controlled trial. Lancet 1997;350:834-43

¹⁵¹Linde K, Melchart D. Randomized controlled trials of individualized homeopathy: a state-of-the art review. J Alter Complement Med 1998;4: 371-88.

studies on individualised homeopathy only.¹⁵²

Individualised homeopathy is more efficient than a placebo: the value of the combined coefficient was 1.62 (95 % CI, 1.17-2.23).

Further pragmatic research is justified.

- Cucherat et al¹⁵³ 2000 European Journal of Clinical Pharmacology. 16 trials representing 17 comparisons with placebo (based on data from the Boissel 1996 study).

Several studies have positive results. More trials have a positive result than would be expected to chance alone.

Publication bias is unlikely.

More clinical trials are needed.

- Shang et al¹⁵⁴ 2005 Lancet. 110 trials included, but the final conclusion is based on a selection of 8 trials.

Final conclusion (8 heterogeneous trials) : weak evidence for a specific effect of homeopathic remedies, but strong evidence for specific effects of conventional interventions.

Presented as comparison of homeopathy and carefully matched conventional trials, but data about conclusive trials were missing.

Quality of homeopathy trials is better: 21 (19 %) good quality trials for homeopathy, 9 (8 %) for

conventional medicine.

Homeopathy is effective for acute upper respiratory tract infections (odds ratio 0.36 [95 % CI 0.26–0.50]), based on 8 trials without indications for bias.

- Bornhöft G., Matthiesen P. 2011. Report for the Swiss Federal Office of Public Health. This report used the health technology assessment (HTA) method examining not only the efficacy of a particular intervention but also its “real world effectiveness”, its appropriateness, safety and costs. This report is fully in line with the principles of EBM, unlike assessments based only on RCTs.

In this assessment papers were selected also looking at the respect of the homeopathic fundamental rules such as similarity and individualisation of treatments. This report contains a systematic review for upper respiratory tract infections and allergies and concluded that a positive effect is not only apparent in placebo controlled studies, but especially also in the comparison with conventional treatments.¹⁵⁵

Other than these comprehensive systematic reviews, many reviews on specific clinical conditions were also done by various investigators. In conditions like Allergies and upper respiratory tract infections^{156,157}, Childhood diarrhoea¹⁵⁸, Influenza treatment¹⁵⁹, Post-operative ileus¹⁶⁰, Rheumatic diseases¹⁶¹, Seasonal allergic rhinitis (hay fever)^{162,163,164,165} and Vertigo¹⁶⁶ the outcomes are in

¹⁵²Boissel JP, Cucherat M, Haugh M, Gauthier E. Critical literature review on the effectiveness of homeopathy: overview of data from homeopathic medicine trials. Homeopathic Medicine Research Group. Report to the European Commission. Brussels 1996, 195-210.

¹⁵³Cucherat, M. et. al. Evidence of clinical efficacy of homeopathy. A metaanalysis of clinical trials. Eur J Clin Pharmacol 2000;56: 27-33.

¹⁵⁴Shang A, Huwiler-Muntener K, Nartey L, Juni P, Dorig S, Sterne JA, Pewsner D, Egger M. Are the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy. Lancet 2005;366(9487):726-32.

¹⁵⁵Bornhöft G., Matthiesen P. (2011). Homeopathy in Healthcare. Effectiveness, Appropriateness, Safety, Costs: An HTA report on homeopathy as part of the Swiss Complementary Medicine Evaluation Programme. Berlin, Heidelberg, New York: Springer-Verlag, 2011. Summary: Forschende Komplementärmedizin, 13 (2006) Suppl.2, 19-29.

¹⁵⁶Bornhöft G, Wolf U, Ammon K, et al. Effectiveness, safety and cost-effectiveness of homeopathy in general practice – summarized health technology assessment. Forschende Komplementärmedizin, 2006; 13 Suppl 2: 19–29.

¹⁵⁷Bellavite P, Orlolani R, Pontarollo F, et al. Immunology and homeopathy. 4. Clinical studies – Part 1. Evidence-based Complementary and Alternative Medicine: eCAM, 2006; 3: 293–301.

¹⁵⁸Jacobs J, Jonas WB, Jimenez-Perez M, Crothers D. Homeopathy for childhood diarrhea: combined results and metaanalysis from three randomized, controlled clinical trials. Pediatric Infectious Disease Journal,

2003; 22: 229–234.

¹⁵⁹Vickers A, Smith C. Homeopathic Oscillocoquinum for preventing and treating influenza and influenza-like syndromes (Cochrane review). In: The Cochrane Library. Chichester, UK: John Wiley & Sons, Ltd. CD001957, 2006.

¹⁶⁰Barnes J, Resch K-L, Ernst E. Homeopathy for postoperative ileus? A meta-analysis. Journal of Clinical Gastroenterology, 1997; 25: 628–633.

¹⁶¹Onas WB, Linde K, Ramirez G. Homeopathy and rheumatic disease. Rheumatic Disease Clinics of North America, 2000; 26: 117–123.

¹⁶²Wiesenauer M, Lütke R. A meta-analysis of the homeopathic treatment of pollinosis with Galphimia glauca. Forschende Komplementärmedizin und Klassische Naturheilkunde, 1996; 3: 230–236.

¹⁶³Taylor MA, Reilly D, Llewellyn-Jones RH, et al. Randomised controlled trials of homeopathy versus placebo in perennial allergic rhinitis with overview of four trial series. British Medical Journal, 2000; 321: 471–476.

¹⁶⁴Bellavite P, Orlolani R, Pontarollo F, et al. Immunology and homeopathy. 4. Clinical studies – Part 2. Evidence-based Complementary and Alternative Medicine: eCAM, 2006; 3: 397–409.

¹⁶⁵Ernst E. Homeopathic Galphimia glauca for hay fever: A systematic review of randomised clinical trials and a critique of a published meta-analysis. Focus on Alternative and Complementary Therapies, 2011; 16: 200–203.

¹⁶⁶Schneider B, Klein P, Weiser M. Treatment of vertigo with a homeopathic complex remedy compared with usual treatments: a meta-analysis of clinical trials. Arzneimittelforschung, 2005; 55: 23–29.

favor of Homeopathy. In conditions like Anxiety¹⁶⁷, Cancer side-effects¹⁶⁸, Chronic asthma¹⁶⁹, Dementia¹⁷⁰, Depression¹⁷¹, Fibromyalgia¹⁷², Headache and migraine treatment¹⁷³, HIV/AIDS¹⁷⁴, Induction of labour¹⁷⁵, Insomnia^{176,177}, Osteoarthritis¹⁷⁸ and Psychiatric disorders¹⁷⁹ outcomes were inconclusive due to lack of high quality study. And only in 06 reviews (Ailments of childhood and adolescence¹⁸⁰, Attention deficit hyperactivity disorder¹⁸¹, Cancer treatment¹⁸², Delayed-onset muscle soreness¹⁸³, Headache and migraine prevention¹⁸⁴, Influenza prevention¹⁸⁵) there is little or no evidence of effect of homeopathy.

A recent systematic review on thirty-two eligible RCTs studied 24 different medical conditions in total. Twelve trials were classed 'uncertain risk of bias', three of which displayed relatively minor uncertainty and were designated reliable evidence; 20 trials were classed 'high risk of bias'. Twenty-two trials had extractable data and were subjected to meta-analysis; OR = 1.53 (95% confidence interval (CI) 1.22 to 1.91). For the three trials with reliable evidence, sensitivity analysis revealed OR = 1.98 (95% CI 1.16 to 3.38). Thirty-two eligible RCTs studied 24 different medical conditions in total. Twelve trials were classed 'uncertain risk of bias', three of which displayed

relatively minor uncertainty and were designated reliable evidence; 20 trials were classed 'high risk of bias'. Twenty-two trials had extractable data and were subjected to meta-analysis; OR = 1.53 (95% confidence interval (CI) 1.22 to 1.91). For the three trials with reliable evidence, sensitivity analysis revealed OR = 1.98 (95% CI 1.16 to 3.38). The review considered only peer-reviewed publications and concluded that medicines prescribed in individualised homeopathy may have small, specific treatment effects. These findings are consistent with subgroup data available in a previous 'global' systematic review. However, the low or unclear overall quality of the evidence prompts caution in interpreting the findings. New high-quality RCT research is necessary to enable more decisive interpretation.¹⁸⁶

Comments on meta-analyses

Randomized Controlled Trials (RCTs) for homeopathy were originally meant to prove that homeopathy as a method is not a placebo effect, despite the questioned mechanism of action. For this purpose meta-analyses combined trials for different indications in one analysis. Despite heterogeneity that arises from such combinations, some positive evidence could be demonstrated in

¹⁶⁷Pilkington K, Kirkwood G, Rampes H, et al. Homeopathy for anxiety and anxiety disorders: A systematic review of the research. *Homeopathy*, 2006; 95: 151–162.

¹⁶⁸Kassab S, Cummings M, Berkovitz S, et al. Homeopathic medicines for adverse effects of cancer treatments (Cochrane Review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD004845, 2009.

¹⁶⁹McCarney RW, Linde K, Lasserson TJ. Homeopathy for chronic asthma (Cochrane Review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD000353, 2004.

¹⁷⁰McCarney R, Warner J, Fisher P, van Haselen R. Homeopathy for dementia (Cochrane Review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD003803, 2004.

¹⁷¹Pilkington K, Kirkwood G, Rampes H, et al. Homeopathy for depression: a systematic review of the research evidence. *Homeopathy*, 2005; 94: 153–163.

¹⁷²Perry R, Terry R, Ernst E. A systematic review of homeopathy for the treatment of fibromyalgia. *Clinical Rheumatology*, 2010; 29:457–464.

¹⁷³Owen JM, Green BN. Homeopathic treatment of headaches: A systematic review of the literature. *Journal of Chiropractic Medicine*, 2004; 3: 45–52.

¹⁷⁴Ullman D. Controlled clinical trials evaluating the homeopathic treatment of people with human immunodeficiency virus or acquired immune deficiency syndrome. *Journal of Alternative and Complementary Medicine*, 2003; 9: 133–141.

¹⁷⁵Smith CA. Homeopathy for induction of labour (Cochrane Review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD003399, 2004.

¹⁷⁶Cooper KL, Relson C. Homeopathy for insomnia: A systematic review of research evidence. *Sleep Medicine Reviews* 2010; 14: 329–337.

¹⁷⁷Ernst E. Homeopathy for insomnia and sleep-related disorders: A systematic

review of randomised controlled trials. *Focus on Alternative and Complementary Therapies*, 2011; 16: 195–199.

¹⁷⁸Long L, Ernst E. Homeopathic remedies for the treatment of osteoarthritis: a systematic review. *British Homeopathic Journal*, 2001; 90: 37–43.

¹⁷⁹Davidson JR, Crawford C, Ives JA, Jonas WB (2011). Homeopathic treatments in psychiatry: a systematic review of randomized placebo-controlled studies. *Journal of Clinical Psychiatry*, 72: 795–805.

¹⁸⁰Altunç U, Pittler MH, Ernst E. Homeopathy for childhood and adolescence ailments: systematic review of randomized clinical trials. *Mayo Clinic Proceedings*, 2007; 82: 69–75.

¹⁸¹Coulter MK, Dean ME. Homeopathy for attention deficit/hyperactivity disorder or hyperkinetic disorder (Cochrane Review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD005648, 2007.

¹⁸²Milazzo S, Russell N, Ernst E. Efficacy of homeopathic therapy in cancer treatment. *European Journal of Cancer*, 2006; 42: 282–289.

¹⁸³Ernst E, Barnes J. Are homeopathic remedies effective for delayed-onset muscle soreness? – A systematic review of Placebo-controlled trials. *Perfusion (Nürnberg)*, 1998; 11: 4–8.

¹⁸⁴Ernst E. Homeopathic prophylaxis of headaches and migraine? A systematic review. *Journal of Pain and Symptom Management*, 1999; 18: 353–357.

¹⁸⁵Vickers A, Smith C. Homeopathic Oscillocoquinum for preventing and treating influenza and influenza-like syndromes (Cochrane review). In: *The Cochrane Library*. Chichester, UK: John Wiley & Sons, Ltd. CD001957, 2006.

¹⁸⁶Mathie et al; Randomised placebo-controlled trials of individualised homeopathic treatment: systematic review and meta-analysis; *Systematic Reviews* 2014, 3:142; doi:10.1186/2046-4053-3-142; pp 1-27

a number of meta-analysis. We would like to stress that these analyses disregard the surplus value of homeopathy. Homeopathy is predominantly used by patients with chronic and recurrent complaints and is valued for the fact that it appears to have systemic effects, exceeding single indications as is common in conventional medicine.

Selecting subgroups in a limited number of trials readily leads to false negative results. The Cochrane Handbook for Systematic Reviews states "Reliable conclusions can only be drawn from analyses that are truly pre-specified before inspecting the trials' results".¹⁸⁷ The Cochrane Handbook further recommends, "Meta-analysis should only be considered when a group of trials is sufficiently homogeneous in terms of participants, interventions and outcomes to provide a meaningful summary". Pooling of results of studies on different conditions is also questionable if homeopathy works for some conditions and not for others.¹⁸⁸ Because of the questioned mechanism of action the evidence for homeopathy was scrutinized in a way that is not required for conventional therapies. Linde et al (1997) showed that the positive outcome for homeopathy cannot be explained by publication bias.¹⁸⁹ Shang et al (2005) showed that quality of homeopathy trials is better compared to conventional trials matched on indication.¹⁹⁰

The analysis by Shang, et al.(2005)

This analysis did not comply with the QUOROM guidelines that sufficient information should be given to reconstruct the conclusions. The authors did not reveal which trials (8 for homeopathy, 6 for conventional medicine) led to the final conclusion. Neither the summary nor the introduction clearly specified the aim

of the study. The meta-analysis does not compare studies of homeopathy versus studies of conventional medicine, but rather specific effects of these two methods in separate analyses.^{191,192,193,194} Therefore, a direct comparison must not be made from this study. Post-publication data revealed that the conclusion was not based on a comparison with matched conventional trials, as suggested by the authors.¹⁹⁵ The conclusion was based on 8 studies for 8 different indications; the inefficacy of one of these indications, muscle soreness in marathon runners, was already proven (38). The conclusive subset of 8 trials was based on a post hoc definition for 'larger trials', n=98 for homeopathy and 146 for conventional medicine. If 'larger' would have been defined as 'above median sample size', including 14 homeopathy trials, the outcome would be significantly positive. Excluding the indication 'muscle soreness in marathon runners' homeopathy is efficacious in most subsets of larger good quality studies.

Shang, et al., stated that the asymmetry of the funnel plot indicated inefficacy when compared with conventional medicine. This comparison was not rectified because of difference in quality, especially in smaller trials. For trials with sample size <100 homeopathy had 14 good quality trials and conventional medicine 2 (p=0.003). Stronger effect in smaller good quality trials is caused by better selection of patients and then asymmetry of the funnel plot is no indication for bias. Funnel plots are thought to detect publication bias, and heterogeneity to detect fundamental differences among studies. New evidence suggests that both of these common beliefs are badly flawed. Using 198 published meta-analyses, Tang and Liu demonstrate that the shape of a funnel plot is largely determined by the arbitrary choice of the method to construct the plot.¹⁹⁶

¹⁸⁷Higgins JPT, Green S, editors. Cochrane Handbook for Systematic Reviews of Interventions 4.2.5 [updated May 2005]. In: The Cochrane Library, Issue 3, 2005. Chichester, UK: John Wiley & Sons, Ltd.

¹⁸⁸Jonas WB, Kaptchuk TJ, Linde K. A critical overview of homeopathy. *Ann Intern Med* 2003; 138: 393-399

¹⁸⁹Linde K et al. Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo-controlled trial. *Lancet* 1997;350:834-43

¹⁹⁰Shang A, Huwiler-Müntener K, Nartey L, Juni P, Dorig S, Sterne JA, Pewsner D, Egger M. Are the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy. *Lancet* 2005;366(9487):726-32.

¹⁹¹Rutten ALB, Stolper CF. The 2005 meta-analysis of homeopathy: the importance of post-publication data. *Homeopathy* 2008;97:169-177

¹⁹²Frass M, Schuster E, Muchitsch I, Duncan J, Geir W, Kozel G, KastingerMayr C, Felleitner

AE, Reiter C, Endler C, Oberbaum M. Asymmetry in The Lancet meta-analysis. *Homeopathy* 2006;95:52-3

¹⁹³Oberbaum M, Singer SR, Frass M. Homeopathic research after the Lancet meta analysis—a moment for introspection. *Complement Ther Med* 2005;13:303-5

¹⁹⁴Frass M, Schuster E, Muchitsch I, Duncan J, Gei W, Kozel G, KastingerMayr C, Felleitner AE, Reiter C, Endler C, Oberbaum M. Bias in the trial and reporting of trials of homeopathy: a fundamental breakdown in peer review and standards? *J Altern Complement Med* 2005;11:780-2

¹⁹⁵Shang A, Juni P, Sterne JAC, Huwiler-Müntener K, Egger M. Author's reply. *Lancet* 2005;366:2083-2085

¹⁹⁶Tang J, Liu JL. Misleading funnel plot for detection of bias in meta-analysis. *J Clin Epidemiol* 2000; 53:477-484

When a different definition of precision and/or effect measure was used, the conclusion about the shape of the plot was altered in 37 (86 %) of the 43 meta-analyses with an asymmetrical plot suggesting selection bias.

As stated before, Shang, et al., were not clear about the aim of their analysis. The methodology of comparing homeopathy with conventional trials matched on indication was suited for comparison of quality. Comparing of effects of subgroups was not allowed because the matching was lost in forming subgroups. The only valid conclusion of this analysis is that quality of homeopathy trials is better than of conventional trials, for all trials ($p=0.03$), but also for smaller trials with $n<100$ ($p=0.003$).

Another interesting finding from Shang, et al., data was: "The eight trials of homeopathic remedies in acute infections of the upper respiratory tract that were included in our sample, the pooled effect indicated a substantial beneficial effect (odds ratio 0.36 [95% CI 0.26–0.50]) and there was neither convincing evidence of funnel-plot asymmetry nor evidence that the effect differed between the trial classified as of higher reported quality and the remaining trials". In 1997, Linde stated that, "homeopathy functioned not better than placebo in a specific disease". Thus the original hypothesis that homeopathy as a method is a placebo effect was reformulated towards specific indications. This hypothesis corresponds with systematic conventional research. The advantage is less heterogeneity in the set of analyzed trials, but it disregards the surplus value of homeopathy, see above.¹⁹⁷ Compare this surplus value with psychotherapy and Post Traumatic Stress

Disorder (PTSD) with symptoms like palpitations, flashbacks, headache and insomnia. Psychotherapy gets closer to the source of the disease than a combination of beta-blockers, painkillers and tranquillizers. It would make no sense to require RCT evidence that psychotherapy works better than beta-blockers. Likewise the same homeopathic medicine could cure headache, eczema and herpes lips in the same patient. The real problem with homeopathy was the implausibility. It makes no sense to prove that homeopathy is plausible for one indication, but not for another.

Nevertheless, there are a number of medical conditions with proof for homeopathy: this is a solution to the problem of heterogeneity of medical conditions. Seventeen systematic reviews or meta-analyses focused on RCTs of homeopathy in 15 specific areas were performed: anxiety, childhood diarrhea, chronic asthma, delayed-onset, muscle soreness, dementia, depression, headache and migraine, HIV/AIDS, induction of labor, influenza treatment and prevention, osteoarthritis, post-operative ileus, seasonal allergic rhinitis (hay fever) and vertigo.

This critical approach has been explained by Jonas, Kaptchuk and Linde in 2003.¹⁹⁸ The **level 1 of evidence** is reached for childhood diarrhea and seasonal allergic rhinitis. Other meta-analysis showed this same level for allergic rhinitis,¹⁹⁹ post-operative ileus,²⁰⁰ rheumatoid arthritis²⁰¹ and the protection from toxic substances.²⁰²

Level IIa of evidence is obtained for asthma,²⁰³ fibrositis,²⁰⁴ influenza,²⁰⁵ muscular pain,²⁰⁶ otitis media,²⁰⁷

¹⁹⁷Rutten ALB, Stolper E. «Proof» against homeopathy in facts supports homeopathy. *Homeopathy* 2006;95:57-61.

¹⁹⁸Jonas WB, Kaptchuk TJ, Linde K. A critical overview of homeopathy. *Ann Intern Med* 2003; 138: 393-399

¹⁹⁹Lüdtke R, Wiesenauer M. A meta-analysis of homeopathic treatment of pollinosis with *Galphimia glauca*. *Wien Med Wochenschr* 1997; 147: 323-7.

²⁰⁰Barnes J, Resch K-L, Ernst E. Homeopathy for postoperative ileus? A meta-analysis. *J Clin Gastroenterol* 1997; 25: 628-33.

²⁰¹Jonas WB, Linde K, Ramirez G. Homeopathy and rheumatic disease. *Rheum Dis Clin North Am* 2000; 26: 117-23.

²⁰²Szeta AL, Rollwagen F, Jonas WB. Raoid induction of protective tolerance to potential terrorist agents: a systematic review of low- and ultra-low dose research. *Homeopathy* 2004;93:173-178.

²⁰³Matusiewicz R. The effect of a homeopathic preparation on the clinical condition of patients with corticosteroid-dependent bronchial asthma. *Biomed Ther* 1997;15:70-4. & Reilly D, Taylor MA, Beattie NGM, et al. Is evidence for homeopathy reproducible? *Lancet* 1994;344:1601-6.

²⁰⁴Fisher P. An experimental double-blind clinical trial method in homeopathy. Use

of a limited range of remedies to treat fibrositis. *Br Homeopath J* 1986;75:142-7 & Fisher P, Greenwood A, Huskinson EC, et al. Effect of homeopathic treatment on fibrositis (primary fibromyalgia). *Br Med J* 1989;299:365-6 and Bell I et al Improved clinical status in fibromyalgia patients treated with homeopathy versus placebo. *Rheumatology* 2004;43(5):577-582.

²⁰⁵Ferley JP, Zmirou D, Adhemar D, Balduci F. A controlled evaluation of a homeopathic preparation in the treatment of influenza-like syndromes. *Br J Clin Pharmacol* 1989;27:329-35 & Papp R, Schuback G, Beck E, et al. Oscilloccinum in patients with influenza-like syndromes : a placebocontrolled double-blind evaluation. *Br Homeopath J* 1998;87 :69-76.

²⁰⁶Tveiten D, Bruseth S, Borchgrevink CF, Norseth J. Effects of the homeopathic remedy Arnica D30 on marathon runners: a randomized, double-blind study during the 1995 Oslo Marathon. *Complement Ther Med* 1998;6:74-4 & Hariveau E. La recherche clinique a l'institut Boiron. *Homéopathie* 1987; 5: 55-8.

²⁰⁷Harrison H, Fixsen A, Vickers A. A randomized comparison of homeopathic and standard care for the treatment of glue ear in children. *Complement Ther Med* 1999; 7: 132-5 & Jacobs J, Springer DA, Crothers D. Homeopathic treatment of acute otitis media in children: a preliminary randomized placebo-controlled trial. *Pediatr Infect Dis J* 2001; 20: 177-83.



several pain sensations,²⁰⁸ side effects of radiotherapy,²⁰⁹ strains²¹⁰ and infections of the ear, nose and throat.²¹¹

Level IIb of evidence is obtained in the treatment of anxiety,^{212,213} hyperactivity disorders,²¹⁴ irritable bowel,²¹⁵ migraine,²¹⁶ osteoarthritis of the knee,²¹⁷ premenstrual syndrome,²¹⁸ pain associated with unwanted post partum lactation,²¹⁹ prevention of nausea and vomiting during chemotherapy,²²⁰ septicemia,²²¹

post-tonsillectomy analgesia²²² and aphthous ulcers.²²³

The practical choice of a treatment for a specific patient is only little helped by the RCT results; they are obtained in “an ideal artificial situation” far from the personal context of the patient. The homeopathic diagnosis is more than a search to a disease; it is an approach including the whole person, with the aim of an individualized and global treatment. The method of evaluation has to be adapted to this reality; today Bayes’ statistics authorize such research

²⁰⁸Stam C, Bonnet MS, van Haselen RA. The efficacy and safety of a homeopathic gel in the treatment of acute low back pain: a multicentre, randomised, double-blind comparative clinical trial. *Br Homeopath J* 2001; 90: 21-8 & Ernst E, Saradeth T, Resch KL. Complementary treatment of varicose veins – a randomized, placebo-controlled, double-blind trial. *Phlebology* 1990; 5: 157-63.

²⁰⁹Balzarini A, Felisi E, Martini A, De Conno F. Efficacy of homeopathic treatment of skin reactions during radiotherapy for breast cancer: a randomised, double-blind clinical trial. *Br Homeopath J* 2000; 89: 8-12 & Kulkarni A, Nagarkar BM, Burde GS. Radiation protection by use of homeopathic medicines. *Hahnemann Homoeopath Sand* 1998; 12: 20-3.

²¹⁰Böhmer D, Ambrus P. Behandlung von Sportverletzungen mit TraumeelSalbe - Kontrollierte Doppelblindstudie. *Biol Med* 1992; 21: 260-8 & Zell J, Connert WD, Mau J, Feuerstake C. Treatment of acute sprains of the ankle joint. Double-blind study assessing the effectiveness of a homeopathic ointment preparation. *Fortschr Med* 1988; 106: 96-100.

²¹¹de Lange de Klerk ES, Blommers J, Kuik DJ, et al. Effect of homeopathic medicines on daily burden of symptoms in children with recurrent upper respiratory tract infections. *Br Med J* 1994; 309: 1329-32 & Weiser M, Clasen BPE. Controlled double-blind study of a homeopathic sinusitis medication. *Biol Ther* 1995; 13: 4-6.

²¹²McCutcheon LE. Treatment of anxiety with a homeopathic remedy. *J Appl Nutr* 1996; 48: 2-6.

²¹³Frei H, Everts R, von Ammon K, Kaufmann F, Walther D, Hsu Schmitz SF, Collenberg M, Steinlin M, Lim C, Thurneysen A. Randomised controlled trials of homeopathy in hyperactive children: treatment procedure leads to an unconventional study design. *Homeopathy*. 2007; 96: 35-41.

²¹⁴Lamont J. Homeopathic treatment of attention deficit hyperactivity disorder. A controlled study. *Br Homeopath J* 1997; 86: 196-200.

²¹⁵Rahlf VW, Mössinger P. Asa foetida in the treatment of the irritable colon: a double-blind trial. *Dtsch Med Wochenschr* 1979; 104: 140-3.

²¹⁶Brigo B, Serpelloni G. Homeopathic treatment of migraines: a randomized double-blind controlled study of sixty cases (homeopathic remedy versus placebo). *Berlin J Res Homeopath* 1991; 1: 98-106.

²¹⁷van Haselen RA, Fisher PAG. A randomized controlled trial comparing topical piroxicam gel with a homeopathic gel in osteoarthritis of the knee. *Rheumatology* 2000; 39: 714-9.

²¹⁸Yakir M, Kreidler S, Brzezinski A, et al. Effect of homeopathic treatment in women with premenstrual syndrome: a pilot study. *Br Homeopath J* 2001; 90: 148-53.

²¹⁹Berrebi A, Parant O, Ferval F, Thene M, Ayoubi JM, Connan L, Belon P. Homeopathic treatment of pain associated with unwanted post partum lactation. *J. Gynecol Biol Reprod* 2001; 30: 353-357.

²²⁰Genre D, Tarpin C, Braud AC, Camerlo J, Protiere C, Eisinger F, Viens P. Randomized, double-blind study comparing homeopathy (cocculine) to placebo in prevention of nausea/vomiting among patients receiving adjuvant chemotherapy for breast cancer. *Breast Cancer Research and Treatment* 2003; 82: sup 1, 637.

²²¹Frass M, Linkesch M, Banyai S, Resch G, Dielacher C, Löbl T, Endler C, Haidvogl M, Muchitsch I, Schuster E. Adjunctive homeopathic treatment in patients with severe sepsis: a randomized, double-blind, placebo-controlled trial in an intensive care unit. *Homeopathy* 2005; 94: 75-80.

²²²Robertson A, Suryanarayanan R, Banerjee A. Homeopathic Arnica Montana for post-tonsillectomy analgesia: a randomized placebo control trial. *Homeopathy*. 2007; 96: 17-21.

²²³Mousavi F, Mojaver Y.N, Asadzadeh M, Mirzazadeh M. Homeopathic treatment of minor aphthous ulcer: a randomized, placebo-controlled clinical trial. *Homeopathy* 2009; 98: 137-141.

(see further).

this complementary analysis of the Shang publication



Views concerning conclusions of “The Lancet” publication of Shang-Egger²²⁴

The best and most detailed critic of the Shang, et al., publication is a sensitivity analysis of obtained results and conclusions from the selected clinical trials in the final evaluation.²²⁵ If we consider the 21 trials of good quality, OR became 0.76 with IC 95 % of 0.59-0.99 and $p=0.039$, argument for a homeopathic efficacy significantly higher than the placebo effect. Looking at the sensitivity of this analysis, it appears that OR is significantly different of 1 for all combinations between 14 trials ($n = \text{threshold } 69$) and the whole 21 trials (exception: the combination of 17 trials with $n = \text{threshold } 50$). However, in most of these analyses, the funnel plot reveals a moderate (but non significant) asymmetry.²²⁶ The results of predicted OR values using the technique of meta-regression (normally preferred in case of significant asymmetry) show values near one, indicating a possible absence of significant difference between homeopathy and placebo. In addition,

reveals an important heterogeneity between the clinical trials (higher than 50 %, criteria making a meta-analyze null and void). In this case it is recommended to use the technique of meta-regression, see above, instead of a meta-analysis for traditional random purpose.²²⁷ This heterogeneity can have multiple reasons. One of these is probably the kind of considered diseases or conditions. A justified reproach can be done to Shang in the fact that he retained in his analysis trials where homeopathy has no demonstrated effect as “muscle soreness”, particularly when one of the trial finally retained by Shang contribute to increase considerably the heterogeneity of the sample. If this “muscle soreness” trial is omitted in the analysis, OR calculated on 7 trials (instead of 8) goes to 0.88/0.80 (even if this is still not significant: IC 0.61-1.05). However, in a sensitive analysis, the difference became significant if we consider 8 trials (rejecting muscle soreness, incorporating another trial on 80 people (OR = 0.75 IC 0.58-0.96 $p=0.025$) or 6 trials with inclusion criteria of 100 people (OR = 0.73 IC 0.59-0.91 $p=0.005$) instead of the 8

²²⁴Belgian Royal Medicine Academy: abstract from advice on homeopathy approved on 28 February 2009. www.armb.be

²²⁵Lüdtke R, Rütten ALB. The conclusions on the effectiveness of homeopathy highly depend on the set of analyzed trials. J Clin Epidemiol 2008, 61, 197-204.

²²⁶Egger M, Smith GD, Schneider M, Minder C. Bias in meta-analysis detected by a simple, graphical test. Br Med J, 1997, 315, 629-634.

²²⁷Egger M, Smith GD, Phillips AN. Meta analysis : principles and procedures. Br Med J, 1997, 315, 1533-1537.

trials selected by Shang (inclusion criteria 98 people). Conversely, the positive results with the 21 trials are mostly related to the presence of two large trials on influenza. If one of these two trials would be rejected, OR is no more significantly different of one. Another consequence of this important heterogeneity is the interpretation that can be done to the funnel plot aimed to exclude small sized trials.²²⁸ Indeed, rather than considering small sized trials as more bias sensitive (and as such eliminated for the final analysis), one alternative could be to consider these small sized trials as more effective because they are performed in condition where the effect of homeopathy is particularly clear and as such an important cohort of people is not needed to demonstrate this effect.²²⁹ If this is the case (and this situation cannot be excluded a priori), it is clear that the exclusion of small sized trials as Shang decided, is a major bias in the final conclusion. The sensitive analysis demonstrates clearly that the significance of the observed superiority effect of homeopathy compared to placebo depends, in a crucial way, on the number of trials taken into account in the analysis.

All published meta-analyses of controlled clinical trials in homeopathy are, more or less, subjects for critics and are controversial.²³⁰ Admittedly the Shang, et al analysis, published in the *Lancet* is very critical and cannot, as such, and, with it only, support the proposed final conclusion: "This finding is compatible with the notion that the clinical effects of homeopathy are placebo effects."²³¹ Nevertheless, the sensitive analysis of Lüdtke et al.,²³² is clear enough by concluding: "Our results do neither prove that homeopathic medicines are superior to placebo nor do they prove the opposite".

But there is more, if we compare the matched conventional and homeopathic RCT's proposed by Shang²³³ and considering only the most common reason for using homeopathy (see Chapter III: the upper respiratory tract infections) we can see that the efficacy of

homeopathy is at least equal to the conventional treatments' efficacy.

For homeopathy, 9 out of 21 publications showed statistically significant positive results, 2 negative, 4 were of high quality (Fig. 1).

Source:

www.ispm.ch/fileadmin/doc_download/1431.Study_characteristics_of_homeopathy_studies_corrected.pdf

For the conventional approaches, 11 out of 21 showed statistically significant positive results, 3 negative, 3 were of high quality (Fig. 2).

Source:

www.ispm.ch/fileadmin/doc_download/1431.Study_characteristics_of_allopathy_studies_corrected.pdf

Coming to the point, it is relevant to quote the conclusions of R.T. Mathie published in the journal *Homeopathy* (Vol 92, Issue 2, April 2003, Pages 84-91) after a review of the available literature "The available research evidence emphasizes the need for much more and better-directed research in homeopathy. A fresh agenda of enquiry should consider beyond (but include) the placebo-controlled trial. Each study should adopt research methods and outcome measurements linked to a question addressing the clinical significance of homeopathy's effects."

Prospective comparison surveys between medical approaches would be promoted (non-inferiority trials) in specific areas described further in this booklet. Randomized placebo-controlled trials are of course a reference for "the best evidence" but respect of the individualized homeopathic treatment and daily practice must always be considered (a very difficult point considering the individual approach in homeopathy).

Conclusion:

As such, we could conclude that more research is certainly needed considering the coherent beam of available results in specific areas described further in this booklet. All levels of evidence are needed.

²²⁸Egger M, Smith GD, Schneider M, Minder C. Bias in meta-analysis detected by a simple, graphical test. *Br Med J*, 1997, 315, 629-634.

²²⁹Lüdtke R, Rutten ALB. The conclusions on the effectiveness of homeopathy highly depend on the set of analyzed trials. *J Clin Epidemiol* 2008, 61, 197-204.

²³⁰Ernst E. A systematic review of systematic reviews of homeopathy. *Br J Clin Pharmacol*, 2002, 54, 577-582.

²³¹Shang A, Huwiler-Müntener K, Nartey L, et al. Are the clinical effects of

homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy. *Lancet* 2005, 366, 726-732.

²³²Lüdtke R, Rutten ALB. The conclusions on the effectiveness of homeopathy highly depend on the set of analyzed trials. *J Clin Epidemiol* 2008, 61, 197-204.

²³³Linde K, Melchart D. Randomized controlled trials of individualized homeopathy: a state-of-the-art review. *J Alter Complement Med* 1998;4: 371-88.

Meta-analyses & systematic reviews: New publications 2014-16

1. Mathie RT, Lloyd SM, Legg LA, Clausen J, Moss S, Davidson JR, Ford I. Randomised placebo-controlled trials of individualised homeopathic treatment: systematic review and meta-analysis. *Syst Rev*. 2014;3:142. doi: 10.1186/2046-4053-3-142. Background: A rigorous and focused systematic review and meta-analysis of randomised controlled trials (RCTs) of individualised homeopathic treatment has not previously been undertaken. We tested the hypothesis that the outcome of an individualised homeopathic treatment approach using homeopathic medicines is distinguishable from that of placebos. Methods: The review's methods, including literature search strategy, data extraction, assessment of risk of bias and statistical analysis, were strictly protocol-based. Judgment in seven assessment domains enabled a trial's risk of bias to be designated as low, unclear or high. A trial was judged to comprise 'reliable evidence' if its risk of bias was low or was unclear in one specified domain. 'Effect size' was reported as odds ratio (OR), with arithmetic transformation for continuous data carried out as required; OR > 1 signified an effect favouring homeopathy. Results: Thirty-two eligible RCTs studied 24 different medical conditions in total. Twelve trials were classed 'uncertain risk of bias', three of which displayed relatively minor uncertainty and were designated reliable evidence; 20 trials were classed 'high risk of bias'. Twenty-two trials had extractable data and were subjected to meta-analysis; OR = 1.53 (95% confidence interval (CI) 1.22 to 1.91). For the three trials with reliable evidence, sensitivity analysis revealed OR = 1.98 (95% CI 1.16 to 3.38). Conclusions: Medicines prescribed in individualised homeopathy may have small, specific treatment effects. Findings are consistent with sub-group data available in a previous 'global' systematic review. The low or unclear overall quality of the evidence prompts caution in interpreting the findings. New high-quality RCT research is necessary to enable more decisive interpretation.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4326322/pdf/13643_2014_Article_328.pdf

2. Shaddel F, Ghazirad M, Bryant M. What is the best

available evidence for using homeopathy in patients with intellectual disabilities? *Iran J Pediatr*. 2014;24(4):339-44. Objective: The debate about the effectiveness of homeopathy hits the headlines from time to time. Reported evidences for the role of homeopathy in psychiatric illness relevant to people with intellectual disabilities are patchy and inconsistent. In this review we summarize the best available evidence for the use of homeopathy to treat the psychiatric disorders common in this population. Methods: Systematic literature review was conducted through February 2012 to July 2012 in AMED, CINAHL, BNI, EMBASE, MEDLINE, PSYCHINFO and GOOGLE SCHOLAR. In the next steps thirty eight homeopathic associations were contacted and a top-up literature search was done on Scopus and World of Science databases till March 2014. Twelve relevant clinical trials were identified and included in this study. The quality of each trial was assessed by the Oxford quality scoring system (Known as Jadad score) as well as subjective review by two reviewers independently (good versus poor). Findings : The largest body of evidence pertained to the use of homeopathy in the treatment of attention deficit hyperactivity disorder (ADHD). There is heterogeneity in the quality of trials and also the outcome of studies but overall our findings suggest some potential for using homeopathy in ADHD. Current evidences do not support the use of homeopathy for treatment of speech and language difficulties. There was only one trial concerning the use of homeopathy in Autistic Spectrum Disorder. This was of a poor quality and unable to provide any recommendation. Conclusion: Whilst acknowledging the risk of publication and language bias in our study, the currently available evidences are neither conclusive nor comprehensive enough to give us a clear picture for the use of homeopathy in patients with intellectual disabilities. There are large gaps in the body of evidence concerning the role of homeopathy in the treatment of common disorders in intellectual disability, such as autism, challenging behavior or developmental arrest in childhood.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4339554/>

3. Mathie RT, Clausen J. Veterinary homeopathy: meta-analysis of randomised placebo-controlled trials. *Homeopathy*. 2015;104(1):3-8. doi: 10.1016/j.homp.2014.11.001. Background: Meta-analysis of randomised controlled trials (RCTs) of veterinary homeopathy has not previously been undertaken. For all

medical conditions and species collectively, we tested the hypothesis that the outcome of homeopathic intervention (treatment and/or prophylaxis, individualised and/or non-individualised) is distinguishable from corresponding intervention using placebos. Methods: All facets of the review, including literature search strategy, study eligibility, data extraction and assessment of risk of bias, were described in an earlier paper. A trial was judged to comprise reliable evidence if its risk of bias was low or was unclear in specific domains of assessment. Effect size was reported as odds ratio (OR). A trial was judged free of vested interest if it was not funded by a homeopathic pharmacy. Meta-analysis was conducted using the random-effects model, with hypothesis-driven sensitivity analysis based on risk of bias. Results: Nine of 15 trials with extractable data displayed high risk of bias; low or unclear risk of bias was attributed to each of the remaining six trials, only two of which comprised reliable evidence without overt vested interest. For all $N = 15$ trials, pooled $OR = 1.69$ [95% confidence interval (CI), 1.12 to 2.56]; $P = 0.01$. For the $N = 2$ trials with suitably reliable evidence, pooled $OR = 2.62$ [95% CI, 1.13 to 6.05]; $P = 0.02$). Conclusions: Meta-analysis provides some very limited evidence that clinical intervention in animals using homeopathic medicines is distinguishable from corresponding intervention using placebos. The low number and quality of the trials hinders a more decisive conclusion.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576265>

4. Schweitzer MC, Zoboli EL. Role of complementary therapies in the understanding of primary healthcare professionals: a systematic review. *Rev Esc Enferm USP*. 2014;48 Spec No:184-91. doi: 10.1590/S0080-623420140000500026. Abstract: Objective To identify the understanding of the healthcare professionals in relation to the role of complementary therapies in primary health care. Method Systematic review by way of the following information sources: PubMed, CINAHL, PeriEnf, AMED, EMBASE, Web of Science, Psycinfo and Psycodoc, using the keyword Primary Health Care alone, and associated with the following keywords: Medicinal Plants, Herbal Medicine, Homeopathy, Traditional Chinese Medicine, Acupuncture, Anthroposophical Medicine. Results Twenty-two studies from 1986 to 2011 were included. We identified three styles of practice: conventional medicine, complementary therapies and integrative medicine. Positioning professional practices within these three styles may

facilitate discussion of concepts of health care, enhancing the health care provided as a result. Conclusion The work process in primary care presents difficulties for conducting integrative and holistic health care, but this practice has been introduced over time by professionals who integrate conventional medicine and complementary therapies, concerned with the care and well-being of patients.

Source: <http://www.scielo.br/pdf/reeusp/v48nspe/0080-6234-reeusp-48-esp-188.pdf>

5. Mathie RT, Clausen J. Veterinary homeopathy: systematic review of medical conditions studied by randomised placebo-controlled trials. *Vet Rec*. 2014;175(15):373-81. doi: 10.1136/vr.101767. Abstract: A systematic review of randomised controlled trials (RCTs) of veterinary homeopathy has not previously been undertaken. Using Cochrane methods, this review aims to assess risk of bias and to quantify the effect size of homeopathic intervention compared with placebo for each eligible peer-reviewed trial. Judgement in seven assessment domains enabled a trial's risk of bias to be designated as low, unclear or high. A trial was judged to comprise reliable evidence if its risk of bias was low or was unclear in specified domains. A trial was considered to be free of vested interest if it was not funded by a homeopathic pharmacy. The 18 eligible RCTs were disparate in nature, representing four species and 11 different medical conditions. Reliable evidence, free from vested interest, was identified in two trials: homeopathic *Coli* had a prophylactic effect on porcine diarrhoea (odds ratio 3.89, 95 per cent confidence interval [CI], 1.19 to 12.68, $P=0.02$); and individualised homeopathic treatment did not have a more beneficial effect on bovine mastitis than placebo intervention (standardised mean difference - 0.31, 95 per cent CI, -0.97 to 0.34, $P=0.35$). Mixed findings from the only two placebo-controlled RCTs that had suitably reliable evidence precluded generalisable conclusions about the efficacy of any particular homeopathic medicine or the impact of individualised homeopathic intervention on any given medical condition in animals.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/25324413>

6. Boehm K, Raak C, Cramer H, Lauche R, Ostermann T. Homeopathy in the treatment of fibromyalgia--a comprehensive literature-review and meta-analysis. *Complement Ther Med*. 2014;22(4):731-42. doi: 10.1016/j.ctim.2014.06.005. Background: Coping with the

complex nature of fibromyalgia symptoms (FMS) still remains a challenge for patients. Taking into account the possible adverse events of pharmacological treatments patients often seek additional treatments for the management of fibromyalgia and turn towards complementary and alternative medicine (CAM). Objective: In this review, we aimed to investigate the current state of literature of homeopathy in the treatment of FMS. Methods: We searched Medline, the Cochrane Register of Controlled Trials, Embase, AMED, PsycInfo and CAMbase for the terms "fibromyalgia AND homeopath\$" through February 2013. In addition we searched Google Scholar, the library of the Carstens Foundation and that of the Deutsche Homöopathische Union (DHU). Standardized mean differences (SMD) with 95% confidence intervals (CI) were calculated and meta-analyzed using the generic inverse variance method. Results: We found 10 case-reports, 3 observational studies, 1 non-randomized and 4 randomized controlled trials (RCTs) on homeopathy for fibromyalgia. Both case reports and observational studies are naturally predominated by the use of qualitative and not validated outcome measures. Meta-analyses of CCTs revealed effects of homeopathy on tender point count (SMD=-0.42; 95%CI -0.78, -0.05; P=0.03), pain intensity (SMD=-0.54; 95%CI -0.97, -0.10; P=0.02), and fatigue (SMD=-0.47; 95%CI -0.90, -0.05; P=0.03) compared to placebo. Conclusion: The results of the studies as well as the case reports define a sufficient basis for discussing the possible benefits of homeopathy for patients suffering from fibromyalgia syndrome although any conclusions based on the results of this review have to be regarded as preliminary.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/25146079>

7. Banerjee K, Costelloe C, Mathie RT, Howick J. Homeopathy for allergic rhinitis: protocol for a systematic review. *Syst Rev*. 2014;3:59. doi: 10.1186/2046-4053-3-59. Background: Allergic rhinitis is a global health problem that is often treated with homeopathy. The objective of this review will be to evaluate the effectiveness of homeopathic treatment of allergic rhinitis. Methods/design: The authors will conduct a systematic review. We will search Medline, CENTRAL, CINAHL, EMBASE, AMED, CAM-Quest, Google Scholar and reference lists of identified studies up to December 2013. The review will include randomized controlled trials that evaluate homeopathic treatment of allergic rhinitis. Studies with participants of all ages, with acute or chronic comorbidities will be included. Patients

with immunodeficiency will not be included. The diagnosis will be based on the published guidelines of diagnosis and classification. Studies of all homeopathy modalities (clinical, complex and classical homeopathy, and isopathy) will be included. We will include trials with both active controls (conventional therapy, standard care) and placebo controls. The primary outcomes are: an improvement of global symptoms recorded in validated daily or weekly diaries and any scores from validated visual analogue scales; the total Quality of Life Score (such as the Juniper RQLQ); individual symptoms scores which include any appropriate measures of nasal obstruction, runny nose, sneezing, itching, and eye symptoms; and number of days requiring medication. Secondary outcomes selected will include serum immunoglobulin E (IgE) levels, individual ocular symptoms, adverse events, and the use of rescue medication. Treatment effects will be measured by calculating the mean difference and the standardized mean difference with 95% confidence interval (CI) for continuous data. Risk ratio or, if feasible, odds ratio will be calculated with 95% CI for dichotomous data. After assessing clinical and statistical heterogeneity, meta-analysis will be performed, if appropriate. The individual participant will be the unit of analysis. Descriptive information on missing data will be included about participants missing due to drop out, whether there was intention to treat or per protocol analysis and missing statistics. A number of subgroups, homeopathic potency, age groups, and types of allergic rhinitis (seasonal or perennial) will be analyzed. Sensitivity analysis will be performed to explore the impact of risk of bias on overall treatment effect. Systematic review registration: PROSPERO CRD42013006741.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4057901/pdf/2046-4053-3-59.pdf>

8. Bao Y, Kong X, Yang L, Liu R, Shi Z, Li W, Hua B, Hou W. Complementary and alternative medicine for cancer pain: an overview of systematic reviews. *Evid Based Complement Alternat Med*. 2014;2014:170396. doi: 10.1155/2014/170396. Background and Objective. Now with more and more published systematic reviews of Complementary and Alternative Medicine (CAM) on adult cancer pain, it is necessary to use the methods of overview of systematic review to summarize available evidence, appraise the evidence level, and give suggestions to future research and practice. Methods. A comprehensive search (the Cochrane Library, PubMed, Embase, and ISI Web of

Knowledge) was conducted to identify all systematic reviews or meta-analyses of CAM on adult cancer pain. And the evidence levels were evaluated using GRADE approach. Results. 27 systematic reviews were included. Based on available evidence, we could find that psychoeducational interventions, music interventions, acupuncture plus drug therapy, Chinese herbal medicine plus cancer therapy, compound kushen injection, reflexology, lycopene, TENS, qigong, cupping, cannabis, Reiki, homeopathy(Traumeel), and creative arts therapies might have beneficial effects on adult cancer pain. No benefits were found for acupuncture (versus drug therapy or sham acupuncture), and the results were inconsistent for massage therapy, transcutaneous electric nerve stimulation (TENS), and Viscum album L plus cancer treatment. However, the evidence levels for these interventions were low or moderate due to high risk of bias and/or small sample size of primary studies. Conclusion. CAM may be beneficial for alleviating cancer pain, but the evidence levels were found to be low or moderate. Future large and rigor randomized controlled studies are needed to confirm the benefits of CAM on adult cancer pain.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4003746/pdf/ECAM2014-170396.pdf>

9. Italia S, Wolfenstetter SB, Teuner CM. Patterns of complementary and alternative medicine (CAM) use in children: a systematic review. *Eur J Pediatr*. 2014;173(11):1413-28. doi: 10.1007/s00431-014-2300-z. Abstract: Utilization of complementary and alternative medicine (CAM) among children/adolescents is popular. This review summarizes the international findings for prevalence and predictors of CAM use among children/adolescents. We therefore systematically searched four electronic databases (PubMed, Embase, PsycINFO, AMED; last update in 07/2013) and reference lists of existing reviews and all included studies. Publications without language restriction reporting patterns of CAM utilization among children/adolescents without chronic conditions were selected for inclusion. The prevalence rates for overall CAM use, homeopathy, and herbal drug use were extracted with a focus on country and recall period (lifetime, 1 year, current use). As predictors, we extracted socioeconomic factors, child's age, and gender. The database search and citation tracking yielded 58 eligible studies from 19 countries. There was strong variation regarding study quality. Prevalence rates for

overall CAM use ranged from 10.9-87.6 % for lifetime use and from 8-48.5 % for current use. The respective percentages for homeopathy (highest in Germany, United Kingdom, and Canada) ranged from 0.8-39 % (lifetime) and from 1-14.3 % (current). Herbal drug use (highest in Germany, Turkey, and Brazil) was reported for 0.8-85.5 % (lifetime) and 2.2-8.9 % (current) of the children/adolescents. Studies provided a relatively uniform picture of the predictors of overall CAM use (higher parental income and education, older children), but only a few studies analyzed predictors for single CAM modalities. Conclusion: CAM use is widespread among children/adolescents. Prevalence rates vary widely regarding CAM modality, country, and reported recall period.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24782030>

10. Jin GL, Su YP, Liu M, Xu Y, Yang J, Liao KJ, Yu CX. Medicinal plants of the genus *Gelsemium* (Gelsemiaceae, Gentianales) - a review of their phytochemistry, pharmacology, toxicology and traditional use. *J Ethnopharmacol*. 2014;152(1):33-52. doi: 10.1016/j.jep.2014.01.003. Ethnopharmacological relevance: In the genus *Gelsemium*, *Gelsemium elegans* (Gardn. & Champ.) Benth. has been recognized as a toxic plant that is widely distributed in Southeast Asia and has been used as traditional Chinese medicine for the treatment of rheumatoid pain, neuropathic pain, spasticity, skin ulcers and cancers for many years. *Gelsemium sempervirens* (L.) J.St.-Hil. has been used since the nineteenth century in homeopathy for treating anxiety, neuralgia, migraine and spasmodic disorders, such as asthma and whooping cough in North America. This review aims to provide comprehensive information on the botany, traditional uses, phytochemistry, pharmacological research and toxicology of medicinal plants in the genus *Gelsemium*. The overall objective is to explore the evidence supporting its ethnopharmacological effectiveness. Materials and methods: A literature survey was performed by searching the scientific databases Pubmed, Google Scholar, SciFinder, Scopus, Web of Science and the Chinese CNKI, in addition to traditional Chinese medicine and homeopathic texts for information on *Gelsemium*. Results: Plants of the genus *Gelsemium* have been used in traditional medicine for the treatment of migraines, neuralgia, sciatica, cancer and various types of sores. Studies into the phytochemical composition of this genus have shown that all of the species are rich sources of monoterpene indole alkaloids and that

they have attracted the attention of many researchers due to their markedly diverse and complex architecture. To date, a total of 121 alkaloids have been isolated and identified from the genus. The crude extracts, as well as the monomeric compounds, from the genus possess anti-tumor, analgesic, anxiolytic, anti-inflammatory and immunomodulating pharmacological activities. Conclusion: It is evident from the available literature that *Gelsemium* species possess potential for use as a beneficial therapeutic remedy. However, the analysis of previous pharmacological research suggests that a clear assignment of active molecules and mechanisms of action is remain lacking. Due to their high toxicity, the studies available on toxicity and safety are inadequate for providing information on clinical utilization.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24434844>

11. Viksveen P, Dymitr Z, Simoens S. Economic evaluations of homeopathy: a review. *Eur J Health Econ*. 2014 Mar;15(2):157-74. doi: 10.1007/s10198-013-0462-7. Context: Economic evaluations of commonly used complementary and alternative medicine (CAM) therapies such as homeopathy are needed to contribute to the evidence base on which policy makers, clinicians, health-care payers, as well as patients base their health-care decisions in an era of constrained resources. Objectives: To review and assess existing economic evaluations of homeopathy. Methods: Literature search was made to retrieve relevant publications using AMED, the Cochrane Library, CRD (DARE, NHS EED, HTA), EMBASE, MEDLINE, and the journal *Homeopathy* (former *British Homoeopathic Journal*). A hand search of relevant publications was carried out. Homeopathy researchers were contacted. Identified publications were independently assessed by two authors. Results: Fifteen relevant articles reported on 14 economic evaluations of homeopathy. Thirteen studies reported numbers of patients: a total of 3,500 patients received homeopathic treatment (median 97, interquartile range 48-268), and 10 studies reported on control group participants (median 57, IQR 40-362). Eight out of 14 studies found improvements in patients' health together with cost savings. Four studies found that improvements in homeopathy patients were at least as good as in control group patients, at comparable costs. Two studies found improvements similar to conventional treatment, but at higher costs. Studies were highly heterogeneous and had several methodological weaknesses. Conclusions: Although the identified evidence of the costs and potential benefits

of homeopathy seemed promising, studies were highly heterogeneous and had several methodological weaknesses. It is therefore not possible to draw firm conclusions based on existing economic evaluations of homeopathy. Recommendations for future research are presented.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/23397477>

12. Bonamin LV, Cardoso TN, de Carvalho AC, Amaral JG. The use of animal models in homeopathic research--a review of 2010-2014 PubMed indexed papers. *Homeopathy*. 2015;104(4):283-91. doi: 10.1016/j.homp.2015.06.002. Background: In the 1990s, a study was performed on the effects of highly diluted thyroxine on frog metamorphosis. This model represented one of the most discussed examples of the biological effects of high dilutions over the next two decades. In 2010, another critical conceptual review of the use of animal models in homeopathy and high-dilution research was published. The main contribution of these studies was the elucidation of the biological features and phenomenology of the effects of high dilutions on living systems, representing an important step forward in our understanding of the mechanisms of action of homeopathic medicines. Methods: We performed a further review of this line of investigation using the same methods. Fifty-three articles that were indexed in the PubMed database and used 12 different animal species were systematically evaluated. Only a fraction of the studies (29/53) reported herein were performed with "ultra high" dilutions. The other studies were performed with dilutions in ranges below 10(-23) (14/53 articles) or commercial complexes (10/53 articles). Results: Only two articles reported negative results; both used in vivo protocols to test commercial complexes, one in fish and one in bees. The quality of the employed techniques improved in 2010-2014 compared with the studies that were reviewed previously in 2010, with the inclusion of more ethically refined protocols, including in vitro primary cell cultures and ex vivo studies (10/53 articles), often with three or more replicates and analyses of epigenetic mechanisms that were previously unknown in 2010. Conclusion: In our updated review of the past 5 years, we found further demonstrations of the biological effects of homeopathy using more refined animal models and in vitro techniques.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26678730>

13. Endler PC, Bellavite P, Bonamin L, Jäger T, Mazon S. Replications of fundamental research models in ultra high dilutions 1994 and 2015 - update on a bibliometric study. *Homeopathy*. 2015;104(4):234-45. doi: 10.1016/j.homp.2015.10.003. Introduction: This paper focuses exclusively on experimental models with ultra high dilutions (i.e. beyond 10(-23)) that have been submitted to replication scrutiny. It updates previous surveys, considers suggestions made by the research community and compares the state of replication in 1994 with that in 2015. Methods: Following literature research, biochemical, immunological, botanical, cell biological and zoological studies on ultra high dilutions (potencies) were included. Reports were grouped into initial studies, laboratory-internal, multicentre and external replications. Repetition could yield either comparable, or zero, or opposite results. The null-hypothesis was that test and control groups would not be distinguishable (zero effect). Results: A total of 126 studies were found. From these, 28 were initial studies. When all 98 replicative studies were considered, 70.4% (i.e. 69) reported a result comparable to that of the initial study, 20.4% (20) zero effect and 9.2% (9) an opposite result. Both for the studies until 1994 and the studies 1995-2015 the null-hypothesis (dominance of zero results) should be rejected. Furthermore, the odds of finding a comparable result are generally higher than of finding an opposite result. Although this is true for all three types of replication studies, the fraction of comparable studies diminishes from laboratory-internal (total 82.9%) to multicentre (total 75%) to external (total 48.3%), while the fraction of opposite results was 4.9%, 10.7% and 13.8%. Furthermore, it became obvious that the probability of an external replication producing comparable results is bigger for models that had already been further scrutinized by the initial researchers. Conclusions: We found 28 experimental models which underwent replication. In total, 24 models were replicated with comparable results, 12 models with zero effect, and 6 models with opposite results. Five models were externally reproduced with comparable results. We encourage further replications of studies in order to learn more about the model systems used.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26678723>

14. Mathie RT, Clausen J. Veterinary homeopathy: systematic review of medical conditions studied by randomised trials controlled by other than placebo. *BMC Vet Res*. 2015;11:236. doi: 10.1186/s12917-015-0542-2. Background: No systematic review has previously been

carried out on randomised controlled trials (RCTs) of veterinary homeopathy in which the control group was an intervention other than placebo (OTP). For eligible peer-reviewed RCTs, the objectives of this study were to assess the risk of bias (RoB) and to quantify the effect size of homeopathic intervention compared with an active comparator or with no treatment. Methods: Our systematic review approach complied fully with the PRISMA 2009 Checklist. Cochrane methods were applied to assess RoB and to derive effect size using standard meta-analysis methods. Based on a thorough and systematic literature search, the following key attributes of the published research were distinguished: individualised homeopathy (n = 1 RCT)/non-individualised homeopathy (n = 19); treatment (n = 14)/prophylaxis (n = 6); active controls (n = 18)/untreated controls (n = 2). The trials were highly diverse, representing 12 different medical conditions in 6 different species. Results: No trial had sufficiently low RoB to be judged as reliable evidence: 16 of the 20 RCTs had high RoB; the remaining four had uncertain RoB in several domains of assessment. For three trials with uncertain RoB and without overt vested interest, it was inconclusive whether homeopathy combined with conventional intervention was more or was less effective than conventional intervention alone for modulation of immune response in calves, or in the prophylaxis of cattle tick or of diarrhoea in piglets. Conclusion: Due to the poor reliability of their data, OTP-controlled trials do not currently provide useful insight into the effectiveness of homeopathy in animals.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4570221/pdf/12917_2015_Article_542.pdf

15. Catalá-López F, Hutton B, Núñez-Beltrán A, Mayhew AD, Page MJ, Ridao M, Tobías A, Catalá MA, Tabarés-Seisdedos R, Moher D. The pharmacological and non-pharmacological treatment of attention deficit hyperactivity disorder in children and adolescents: protocol for a systematic review and network meta-analysis of randomized controlled trials. *Syst Rev*. 2015;4:19. doi: 10.1186/s13643-015-0005-7. Background: Attention deficit hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders of children and adolescents, with a significant impact on health services and the community in terms of economic and social burdens. The objective of this systematic review will be to evaluate the comparative efficacy and safety of

pharmacological and non-pharmacological treatments in children and adolescents with ADHD. Methods: Searches involving PubMed/MEDLINE and the Cochrane Database of Systematic Reviews will be used to identify related systematic reviews and relevant randomized trials. Search results will be supplemented by reports from the regulatory and health technology agencies, clinical trials registers and by data requested from trialists and/or pharmaceutical companies. We will consider studies evaluating pharmacological interventions (e.g. stimulants, non-stimulants, antidepressants), psychological interventions (e.g. behavioural interventions, cognitive training and neurofeedback) and complementary and alternative medicine interventions (e.g. dietary interventions, supplement with fatty acids, vitamins, minerals, aminoacids, herbal treatment, homeopathy, and mind-body interventions including massage, chiropractic, acupuncture, yoga, meditation, Tai chi). Eligible control conditions will be placebo, waitlist, no treatment and usual care. Randomized controlled trials of a minimum of 3 weeks duration will be included. The primary outcomes of interest will be the proportion of patients who responded to treatment and who dropped out of the allocated treatment, respectively. Secondary outcomes will include treatment discontinuation due to adverse events, as well as the occurrences of serious adverse events and specific adverse events (decreased weight, anorexia, insomnia and sleep disturbances, anxiety, syncope and cardiovascular events). Two reviewers will independently screen references identified by the literature search, as well as potentially relevant full-text articles in duplicate. Data will be abstracted and risk of bias will be appraised by two team members independently. Conflicts at all levels of screening and abstraction will be resolved through discussion. Random-effects pairwise meta-analyses and Bayesian network meta-analyses will be conducted where appropriate. Discussion: This systematic review and network meta-analysis will compare the efficacy and safety of treatments used for ADHD in children and adolescents. The findings will assist patients, clinicians and healthcare providers to make evidence-based decisions regarding treatment selection. Systematic review registration: PROSPERO CRD42014015008 .

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4357151/pdf/13643_2015_Article_5.pdf

16. Stub T, Musial F, Kristoffersen AA, Alræk T, Liu J.

Adverse effects of homeopathy, what do we know? A systematic review and meta-analysis of randomized controlled trials. *Complement Ther Med.* 2016;26:146-63. doi: 10.1016/j.ctim.2016.03.013. Objectives: Homeopathy is a popular treatment modality among patient, however there is sparse research about adverse effects of homeopathy. A concept unique for homeopathy, is homeopathic aggravation that is understood as a transient worsening of the patients' symptoms before an expected improvement occurs. From a risk perspective it is vital that a distinction between homeopathic aggravations and adverse effects is established. There is a lack of systematic information on how frequent adverse effects and homeopathic aggravations are reported in studies. Therefore, a systematic review and meta-analysis were performed. Design and setting: Sixteen electronic databases were searched for Randomized Controlled Trials (RCTs). The searches were limited from the year 1995 to January 2011. Forty-one RCTs, with a total of 6.055 participants were included. A subtotal of 39 studies was included in the additional meta-analysis. Results: A total of 28 trials (68%) reported adverse effects and five trials (12%) reported homeopathic aggravations. The meta-analysis (including six subgroup comparisons) demonstrated that no significant difference was found between homeopathy and control with OR 0.99, 95% CI 0.86-1.14, I(2)=54%. More than two third of the adverse effects were classified as grade 1 (68%) and two third were classified as grade 2 (25%) and grade 3 (6%) according to the Common Terminology Criteria for Adverse Effects. Homeopathic aggravation was classified as grade 1 (98%) and grade 3 (2%), suggesting that homeopathic aggravations were reported to be less severe than adverse effects. The methodological quality according to a method recommended in the Cochrane handbook for RCTs, was high. Conclusion: Adverse effects including the concept of homeopathic aggravations are commonly reported in trials. The meta-analysis demonstrated that the proportion of patients experiencing adverse effects to be similar for patients randomized to homeopathic treatment compared to patients randomized to placebo and conventional medicine.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/27261996>

17. Marom T, Marchisio P, Tamir SO, Torretta S, Gavriel H, Esposito S. Complementary and Alternative Medicine Treatment Options for Otitis Media: A Systematic Review. *Medicine (Baltimore).* 2016;95(6):e2695. doi:

10.1097/MD.0000000000002695. Abstract: Otitis media (OM) has numerous presentations in children. Together with conventional medical therapies aimed to prevent and/or treat OM, a rising number of complementary and alternative medicine (CAM) treatment options can be offered. Since OM is common in children, parents may ask healthcare professionals about possible CAM therapies. Many physicians feel that their knowledge is limited regarding these therapies, and that they desire some information. Therefore, we conducted a literature review of CAM therapies for OM, taking into account that many of these treatments, their validity and efficacy and have not been scientifically demonstrated. We performed a search in MEDLINE (accessed via PubMed) using the following terms: "CAM" in conjunction with "OM" and "children. Retrieved publications regarding treatment of OM in children which included these terms included randomized controlled trials, prospective/retrospective studies, and case studies. The following CAM options for OM treatment in children were considered: acupuncture, homeopathy, herbal medicine/phytotherapy, osteopathy, chiropractic, xylitol, ear candling, vitamin D supplement, and systemic and topical probiotics. We reviewed each treatment and described the level of scientific evidence of the relevant publications. The therapeutic approaches commonly associated with CAM are usually conservative, and do not include drugs or surgery. Currently, CAM is not considered by physicians a potential treatment of OM, as there is limited supporting evidence. Further studies are warranted in order to evaluate the potential value of CAM therapies for OM.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4753897/pdf/medi-95-e2695.pdf>

18. Posadzki P, AlBedah AMN, Khalil MMK, AlQaed MS, Lee MS, Ernst E, Car J. Complementary and alternative medicine for the prevention and treatment of migraine headache: an overview of systematic reviews. *Focus on Alternative and Complementary Therapies* 2015;20(2):58–73. doi: 10.1111/fct.12185. Background: Complementary and alternative medicine (CAM) is very popular among migraineurs. Objectives: The aim of this article is to summarise and critically evaluate the evidence from systematic reviews (SRs) of CAM for the prevention and treatment of migraine headache. Method: Ten electronic databases were searched from 1946 to August 2014. Retrieved papers were also hand-searched for relevant

references. Systematic reviews were eligible for inclusion if they reported the prevention and treatment of migraine headache using any type of CAM. Oxman criteria were used to appraise the methodological quality of the included SRs. Results: Thirty-three SRs, with a total of 45 886 migraine sufferers, were included in the analyses. The majority (64%) of the SRs were of high methodological quality (mean Oxman score=4.87, SD=3.96). Most (60.6%) SRs arrived at positive conclusions (16 of which were of high quality); two (6.0%) SRs arrived at negative conclusions (of which one was of high quality), and 11 (33.3%) arrived at equivocal conclusions (of which four were of high quality). The majority of the high-quality SRs (Oxman score=6–9) were based on moderate-quality RCTs. For multiple SRs, unanimously positive conclusions were reached for acupuncture and biofeedback. There was conflicting evidence regarding the effectiveness of homeopathy, herbal medicines such as *Petasites hybridus* and *Tanacetum parthenium* L., and spinal manipulative therapy. Conclusion: The evidence from SRs evaluating the effectiveness of CAM for the prevention or treatment of migraine headache is mostly positive. However, several caveats should be taken into account, and only for acupuncture and biofeedback are the conclusions unanimously positive.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12185/abstract>

19. Aleixo DL, Bonamin LV, Ferraz FN, Veiga FKD, Araújo SMD. Homeopathy in parasitic diseases. *Int J High Dilution Res* 2014; 13(46): 13-27. Background: The use of homeopathic medicines has increased, partly because conventional drugs do not always elicit the desired effects, and partly because their side effects might compromise the patient's adherence to treatment. Several studies showed benefits in the use of highly diluted medicines for the treatment of infectious diseases. Aim: The aim of the present review was to perform a critical discussion about aspects of homeopathy and the current status of veterinary experimentation, as well as of the use of highly diluted drugs in infectious and parasitic diseases. The main aspects of effects, therapeutic regimens and / or dynamizations used in various models are discussed. Methods: Articles published since 2000 in journals included in databases PubMed and SciELO and specialized journals sought for and reviewed using keywords "parasitic diseases/homeopathy" and "parasitic diseases/ ultra-dilutions". Results: Several

recent experimental studies demonstrated the biological effect of highly diluted medications on parasitic infections, with reduction of the number of parasites and improvement of the clinical condition of the affected animals. Several articles exhibit problems in the description of methods, which threaten the reproducibility of experiments. Conclusion: The acknowledgment of homeopathy depends on the credibility of investigators. Although research on homeopathy has clearly increased in recent years, relative to both implementation of more consistent methods and description of data and methods, improvement is still required. Precise and detailed descriptions will contribute to advance the use of homeopathy, so that society at large might benefit in actual practice.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/683/688>

20. Sharma B, Narula RH, Manchanda RK. Homoeopathy for the management of Asthma - A review of Council's Clinical Research. Indian J Res Homoeopathy 2015;9:69-78. doi: 10.4103/0974-7168.159520. Objective:

To conduct a review of the Clinical Research work of the Council in the field of asthma.

Methods: A comprehensive manual search of Council's publications pertaining to asthma was conducted to identify publications on the research work undertaken by the Council including CCRH Quarterly Bulletins (1982 to 2005), Clinical Research studies series and Indian Journal of Research in Homoeopathy (IJRH). Relevant research was categorized by study type and appraised according to study design with their clinical outcomes. Results: Only 20 publications pertaining to Asthma were found and 10 were selected consisting of observational studies and drug oriented studies. Conclusion: The positive outcome in controlling acute episodes of asthma, reducing the frequency and intensity of subsequent episodes and weaning of bronchodilators and other allopathic drugs have been reported. As only observational studies have been conducted, further pragmatic trials including randomized control studies are desirable.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=2;spage=69;epage=78;aulast=Sharma>

Chapter: VII

Clinical research

The scope for research in Homeopathy is huge, with several issues either wanting of ample evidence or beyond the domain of existing knowledge. In the recent past, homeopathy has been researched for its viability in medical care through various means – the primary one being clinical research. This chapter shall first look into the available evidence in Homeopathy and then towards the end, discuss why research in homeopathy needs to be approached with different perspective altogether.

Randomised Control Trials

A review of clinical trials in homeopathy reported from 1975 to 2002 found 93 studies comparing homeopathy with placebo or other treatment.²³⁴ Positive effects of homeopathy were found in 50. There is replicated RCT evidence that homeopathy may be effective in childhood diarrhoea, fibromyalgia, influenza (treatment), otitis media, seasonal allergic rhinitis, sinusitis and vertigo. Reviewing 12 systematic reviews of homeopathy for specific medical conditions, reached similar conclusions: homeopathy may be effective for allergies, childhood diarrhoea, influenza and postoperative ileus, but not for treatment of migraine, delayed-onset muscle soreness or

prevention of influenza.²³⁵

There is also some evidence from individual RCTs that homeopathy may be effective in chronic fatigue syndrome, premenstrual syndrome, postpartum bleeding, sepsis, influenza, pain, side-effects of radio-/chemotherapy, sprains, upper respiratory tract infection and stomatitis. Among the single RCTs of homeopathy conducted in clinical areas, including asthma²³⁶, life-threatening sepsis²³⁷ and stomatitis induced by cancer chemotherapy²³⁸, chronic fatigue syndrome²³⁹, premenstrual syndrome²⁴⁰, postpartum bleeding²⁴¹ and Arnica for various clinical conditions^{242,243}, most have yielded positive results. In some clinical situations, both RCTs and clinical observational studies have been conducted, providing a fuller picture of the possible role of homeopathy. Such areas include upper respiratory tract and ear infections in children^{244,245,246}, attention deficit hyperactivity disorder^{247,248} and homeopathy for

²³⁴Mathie, R.T., The research evidence base for homeopathy: a fresh assessment of the literature, *Homeopathy* 92 (2003) 84–91

²³⁵Jonas, W.B.; Jimenez-Perez, M.; et al., Homeopathy for childhood diarrhea: combined results and metaanalysis from three randomized, controlled clinical trials, *Pediatr. Infect. Dis. J.* 22 (2003) 229–234

²³⁶White, A.; Slade, P.; Hunt, C.; et al., Individualised homeopathy as an adjunct in the treatment of childhood asthma: a randomised placebo controlled trial, *Thorax* 58 (2003) 317–321.

²³⁷Frass, M.; Linkesch, M.; Banyai, S.; et al., Adjunctive homeopathic treatment in patients with severe sepsis: a randomized, double-blind, placebo-controlled trial in an intensive care unit, *Homeopathy* 94 (2005) 75–80

²³⁸Oberbaum, M.; Yaniv, I.; Ben-Gal, Y.; et al., A randomized, controlled clinical trial of the homeopathic medication Traumeel S in the treatment of chemotherapy-induced stomatitis in children undergoing stem cell transplantation, *Cancer* 92 (2001) 684–690

²³⁹Weatherley-Jones, E.; Nicholl, J.P.; Thomas, K.J.; et al., A randomized, controlled, triple-blind trial of the efficacy of homeopathic treatment for chronic fatigue syndrome, *J. Psychosom. Res.* 56 (2004) 189–197

²⁴⁰Yakir, M.; Kreidler, S.; Brzezinski, A.; et al., Effects of homeopathic treatment in women with premenstrual syndrome: a pilot study, *British Homeopathic Journal* 90 (2001) 148–153

²⁴¹Oberbaum, M.; Galoyan, N.; Lerner-Geva, L.; et al., The effect of the homeopathic remedies Arnica and Bellisperennis on mild postpartum bleeding – a randomized, double-blind, placebo-controlled study –preliminary results,

Complement. Ther. Med. 13 (2005) 87–90

²⁴²Tveiten, D.; Bruseth, S.; Borchgrevink, C.F.; Norseth, J., Effects of the homeopathic remedy Arnica D30 on marathon runners: a randomized, double-blind study during the 1995 Oslo Marathon, *Complement. Ther. Med.* 6 (1998) 71–74

²⁴³Stevinson, C.; Devaraj, V.S.; Fountain-Barber, A.; et al., Homeopathic arnica for prevention of pain and bruising: randomized placebo-controlled trial in hand surgery, *J. R. Soc. Med.* 96 (2003) 60–65

²⁴⁴de Lange de Klerk, E.S.M.; Blommers, J.; Kuik, D.J.; et al., Effects of homeopathic medicines on daily burden of symptoms in children with recurrent upper respiratory tract infections, *Br. Med. J.* 309 (1994) 1329–1332

²⁴⁵Frei, H.; Thurneysen, A., Homeopathy in acute otitis media in children: treatment effect or spontaneous resolution? *Homeopathy* 90 (2001) 180–182

²⁴⁶Jacobs, J.; Springer, D.; Crothers, D., Homeopathic treatment of acute otitis media in children: a preliminary randomized placebo-controlled trial, *Pediatr. Infect. Dis. J.* 20 (2001) 177–183

²⁴⁷Frei, H.; Thurneysen, A., Treatment for hyperactive children: homeopathy and methylphenidate compared in a family setting, *Homeopathy* 90 (2001) 183–188.

²⁴⁸Frei, H.; Everts, R.; von Ammon, K.; et al., Homeopathic treatment of children with attention deficit hyperactivity disorder: a randomised, double blind, placebo controlled crossover trial, *Eur. J. Pediatr.* 164 (2005) 758–767

symptoms related to cancer treatment.^{249,250,251}

Replication of results, a reliable indicator in clinical research, is what remains largely elusive in Homeopathy. The group led by David Reilly has published an impressive series of trials of isopathy^{252,253,254,255} for respiratory allergies, including hayfever, perennial rhinitis and allergy, including a meta-analysis. However, there has been no independent positive replication of these findings still date. Migraine is another area in which there have been replicated studies: a study on 60 patients using classical individualized homeopathy, was reported as showing a highly significant positive result.²⁵⁶ But attempted replications have been much less positive.^{257,258} However, an uncontrolled observational study reported major improvement in quality of life in patients undergoing homeopathic treatment for headache²⁵⁹. Another observational study showed large effect sizes ($d = 2.44$) for improvement in headache days over the course of a year and in quality of life.²⁶⁰ Another model with independent replication is Arnica 30x to prevent delayed-onset muscle soreness. The results of two studies in the Oslo marathon have been pooled, and a small but significant effect on muscle soreness, but none on muscle enzymes, was shown.²⁶¹ However, a larger-scale study replication,

mostly on runners in the London marathon, was negative.²⁶² More recently the results of three linked studies of Arnica 30x in different types of knee surgery have yielded a positive result.²⁶³ The models are so divergent, however, that no common quantitative measure can be derived.

Paralytic postoperative ileus has also been studied repeatedly. In a study, patients were treated with Opium and Raphanus 6C; the time to resumption of intestinal transit was the outcome. Initial pilot studies were promising, but a large-scale multicentre study in France did not reproduce the initial results.²⁶⁴ The initial results were so strong, however, that a pooled analysis still yielded significant results.²⁶⁵ Another area with mixed replications is rheumatology. An initial study of individualized homeopathy in rheumatoid arthritis was positive²⁶⁶, but independent studies failed to confirm these results.^{267,268} A trial of a single homeopathic medicine (Rhus toxicodendron) in osteoarthritis with little or no individualization yielded a negative result.²⁶⁹ However, a replication, using the same homeopathic medicine but in a different rheumatological condition (fibromyalgia) and incorporating individualization, yielded

²⁴⁹Balzarini, A.; Felisi, E.; Martini, A.; et al., Efficacy of homeopathic treatment of skin reactions during radiotherapy for breast cancer: a randomized, double-blind clinical trial, *British Homeopathic Journal* 89 (2000) 8–12

²⁵⁰Thompson, E.; Reilly, D., The homeopathic approach to the treatment of symptoms of oestrogen withdrawal in breast cancer patients. A prospective observational study, *Homeopathy* 92 (2003) 131–134

²⁵¹Jacobs, J.; Herman, P.; Heron, K.; et al., Homeopathy for menopausal symptoms in breast cancer survivors: a preliminary randomized controlled trial, *J. Altern. Complement. Med.* 11 (2005) 21–27

²⁵²Reilly, D.T.; Taylor, M.A., Potent placebo or potency? A proposed study model with initial findings using homeopathically prepared pollens in hayfever, *British Homeopathic Journal* 74 (1985) 65–75

²⁵³Reilly, D.T.; Taylor, M.A.; McSharry, C.; et al., Is homeopathy a placebo response? Controlled trial of homeopathic potency, with pollen in hayfever as model, *Lancet* ii (1986) 881–885

²⁵⁴Reilly, D.; Taylor, M.A.; Beattie, N.G.M.; et al., Is evidence for homeopathy reproducible? *Lancet* 344 (1994)

²⁵⁵Taylor, M.A.; Reilly, D.; Llewellyn-Jones, R.H.; et al., Randomised controlled trials of homeopathy versus placebo in perennial allergic rhinitis with overview of four trial series, *Br. Med. J.* 321 (2000) 471–476

²⁵⁶Brigo, B.; Serpelloni, G., Homeopathic treatment of migraines – A randomized double-blind controlled study of sixty cases (homeopathic remedy versus placebo), *Berlin Journal of Research in Homeopathy* 1 (1991) 98–106

²⁵⁷Whitmarsh, T.E.; Coleston-Shields, D.M.; Steiner, T.J., Double-blind randomized placebo-controlled study of homeopathic prophylaxis of migraine, *Cephalgia* 17 (1997) 600–604

²⁵⁸Walach, H.; Häusler, W.; Lowes, T.; et al., Classical homeopathic treatment of chronic headaches, *Cephalgia* 17 (1997) 119–126

²⁵⁹Muscari-Tomaoli, G.; Allegri, F.; Miali, E.; et al., Observational study of quality of life in patients with headache, receiving homeopathic treatment,

Homeopathy 90 (2001) 189–197

²⁶⁰Witt, C.M.; Lüdtke, R.; Willich, S.N., Homeopathic treatment of chronic headache (ICD-9: 784.0) – a prospective observational study with 2 year follow-up, *Forsch. Komplementärmed.* 16 (2009) 227–235

²⁶¹Tveiten, D.; Bruset, S., Effect of Arnica D30 in marathon runners. Pooled results from two double-blind placebo controlled studies, *Homeopathy* 92 (2003) 187–189

²⁶²Vickers, A.J.; Fisher, P.; Wyllie, S.E.; et al., Homeopathic Arnica 30X is ineffective for muscle soreness after long-distance running: a randomized, double-blind, placebo-controlled trial, *Clin. J. Pain* 14 (1998) 227–231

²⁶³Brinkhaus, B.; Wilkens, J.M.; Lüdtke, R.; et al., Homeopathic arnica therapy in patients receiving knee surgery: Results of three randomised double-blind trials, *Complement. Ther. Med.* 14 (2006) 237–246

²⁶⁴GRECHO (Groupe de recherches et d'essais cliniques en homéopathie), Evaluation de deux produits homéopathiques sur la reprise du transit après chirurgie digestive – Un essai contrôlé multicentrique. [Evaluation of the effect of two homeopathic products on the restoration of intestinal peristalsis – A multicentre controlled trial.], *Presse Méd.* 18 (1989) 59–62

²⁶⁵Barnes, J.; Resch, K.L.; Ernst, E., Homeopathy for postoperative ileus? A meta-analysis, *J. Clin. Gastroenterol.* 25 (1997) 628–633

²⁶⁶Gibson, S.; MacNeill, A.D.; et al., Homeopathic therapy in rheumatoid arthritis; evaluation by double-blind clinical therapeutic trial, *Br. J. Clin. Pharmacol.* 9 (1980) 453–459

²⁶⁷Andrade, L.; Ferraz, M.; Atra, E.; et al., A randomized controlled trial to evaluate the effectiveness of homeopathy in rheumatoid arthritis, *Scand. J. Rheumatol.* 20 (1991) 204–208

²⁶⁸Fisher, P.; Scott, D.L., A randomized controlled trial of homeopathy in rheumatoid arthritis, *Rheumatology* 4 (2001) 1052–1055

²⁶⁹Shipley, M.; Berry, H.; Broster, G.; et al., Controlled trial of homeopathic treatment of osteoarthritis, *Lancet* i (1983) 97–98

a positive result.²⁷⁰ Subsequently there have been two further positive results from RCTs of homeopathic treatment of fibromyalgia, but these have used different methods and outcomes: one looked at individualized homeopathy²⁷¹ and the other at the entire 'package' of homeopathic care, including consultation and medicine, compared to normal care.²⁷²

For anxiety, childhood asthma, insect bites, menopausal symptoms in breast cancer, migraine, muscle soreness, prevention of upper respiratory tract infection, stroke and warts, the current RCT evidence is inconclusive or negative. For other medical conditions the current published evidence is fragmentary. However, it is interesting to note that the evidence overall becomes less positive when filtered for 'internal' trial validity and sample size. It can nevertheless be counter-argued that many of these studies were of poor homeopathic quality, for instance lacking individualization or with unrealistic outcomes.²⁷³ Overall, the data from RCTs do not seem to reflect the true picture of the effectiveness of homeopathic treatment. Although a widely respected format for conventional studies, the RCTs most certainly do not encompass the 'homeopathic' features of treatment to yield results which are as encouraging as observational studies which is more patient-oriented. A further probing of this point is done elsewhere in the chapter.

Clinical observational studies

Unfortunately, the clinical areas in which research on homeopathy has been done do not match well with those for which it is used in practice. For instance, homeopathy is commonly used to treat psychiatric problems, including anxiety and depression in France, Germany, the UK and USA,^{274,275,276,277} yet as mentioned above, clinical trial evidence is scant. Reasons for this include model simplicity (for instance, isopathic treatment of allergies has been relatively extensively investigated because it is a simple model), expediency and commercial motives.⁴⁰ In practice homeopathy is frequently used for clinical problems, for instance dermatological or gastrointestinal conditions where there is little or no RCT evidence. A comprehensive observational study at the Bristol Homoeopathic Hospital included over 6500 consecutive patients with over 23 000 attendances in a 6-year period.²⁷⁸ At follow-up, 70% of patients reported improved health, 50% major improvement. The best treatment responses were reported in childhood eczema or asthma, and in inflammatory bowel disease, irritable bowel syndrome, menopausal problems and migraine. A study at a public-sector clinic in Italy yielded similar results.²⁷⁹ In a prospective, multicentre cohort study in Germany and Switzerland, 73% of 3709 patients with 8-year follow-up contributed data. The most frequent diagnoses were allergic rhinitis and headache in adults, and atopic dermatitis and multiple recurrent infections in children. Disease severity decreased significantly ($P < 0.001$) between baseline, 2 years and 8 years. Younger age, female gender and more severe disease at baseline correlated with better outcomes.²⁸⁰ A 500-patient survey at the Royal London Homoeopathic Hospital showed that

²⁷⁰Fisher, P.; Greenwood, A.; Huskisson, E.C.; et al., Effect of homeopathic treatment on fibrositis (primary fibromyalgia), *Br. Med. J.* 299 (1989) 365–366

²⁷¹Bell, I.R.; Lewis, D.A.; Brooks, A.J.; et al., Improved clinical status in fibromyalgia patients treated with individualized homeopathic remedies versus placebo, *Rheumatology* 43 (2004) 577–582

²⁷²Relton, C.; Smith, C.; Raw, J.; et al., Healthcare provided by a homeopath as an adjunct to usual care for fibromyalgia (FMS): results of a pilot randomised controlled trial, *Homeopathy* 98 (2009) 77–82

²⁷³Fisher P., Mathie R.T., Walach H. and Jonas W.B., *Scientific Research in Homeopathy*; Special issues in establishing CAM research quality; Elsevier Ltd. 2011; pp 169–97

²⁷⁴Davidson, J.; Rampes, H.; Eisen, M.; et al., Psychiatric disorders in primary care patients receiving complementary medical treatments, *Compr. Psychiatry* 39 (1998) 16–20

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²⁷⁶Trichard, M.; Lamure, E.; Chaufferin, G., Study of the practice of homeopathic general practitioners in France, *Homeopathy* 92 (2003) 135–139

²⁷⁷Becker-Witt, C.; Ludtke, R.; Weissshuhn, T.E.R.; et al., Diagnoses and treatment in homeopathic medical practice, *Forsch. Komplementärmed. Klass. Naturheilkd.* 11 (2004) 98–103

²⁷⁸Spence, D.; Thompson, E.A.; Barron, S.J., Homeopathic treatment for chronic disease: a 6-year university hospital based outpatient observational study, *J. Altern. Complement. Med.* 5 (2005) 793–798

²⁷⁹Rossi, E.; Endrizzi, C.; Panozzo, M.A.; et al., Homeopathy in the public health system: a seven-year observational study at Lucca Hospital (Italy), *Homeopathy* 98 (2009) 142–148

²⁸⁰Witt, C.; Ludtke, R.; Mengler, N.; et al., How healthy are chronically ill patients after eight years of homeopathic treatment? Results from a long term observational study, *BMC Public Health* 8 (2008) 413

many patients were able to reduce or stop conventional medication following homeopathic treatment.²⁸¹ The size of the effect varied between diagnoses: for skin complaints, for example, 72% of patients reported being able to stop or reduce their conventional medication; there was no reduction for cancer patients. In both these surveys, many of the patients were suffering from difficult-to-treat 'effectiveness gap' conditions.²⁸²

Although these observational studies showed significant and persistent outcomes, it is important to remember that the extent to which the observed effects are due to differential dropout, spontaneous improvement, regression to the mean, lifestyle changes, placebo or context effects is unknown and needs clarification in future explanatory studies. Further, the challenge to reproduce these results at a larger scale, without the involvement of the previous researcher and in another geographic boundary, remains largely unattended. Most studies replicated so far have either included one or more of the previous researchers or similar geographical settings.²⁸³ Still, it is evident that observational studies have consistently been yielding more positive results for Homeopathy than the methodological RCTs. The reason why the results of these loosely methodological study design of observational studies are not always able to convert into the strict RCT design, and almost never as strongly, is rather intricate and needs deep analysis. The following part of the chapter discusses this issue at length.

Personalised medicine and prognosis research

Another type of observational study is prognosis research, studying effect modifiers: variables that influence outcome of treatment. This type of research becomes increasingly important in medicine since the emergence of

pharmacogenomics, learning that the medicine should not only fit the indication, but also the person (personalised or stratified medicine).²⁸⁴ This principle of personalised medicine has always been the core of homeopathic philosophy. Prognosis research resembles diagnosis research: several symptoms and personal characteristics increase or decrease the probability that a specific medicine will work, instead of the probability of a specific diagnosis.

As in conventional medicine prognosis research is becoming more important. There have been retrospective observational studies,^{285, 286} and a prospective observational study.²⁸⁷

Place of Randomised Control Trials in Homeopathy

There is a need to understand why Homeopathy, which has managed to survive 200 years unscathed, despite the attacks of sceptics and non-believers, fails to convert its clinically acknowledged results in a systematically staged research model like RCT. Many explanations exist, some pertaining to understanding of the disease concept and factors that contribute in its recovery, some to more complex approach in homeopathic treatment, and still some other to the design of the research models, particularly RCTs. We shall deal with all one by one.

As far as the understanding for disease is concerned, the assumption that disease is merely a pathological change, the recovery of which can be marked by a specific effect of a drug on a diagnostically assessable parameter is a

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²⁸²Fisher, P.; van Haselen, R.; Hardy, K.; et al., Effectiveness Gaps: A new concept for evaluating health service and research needs applied to complementary and alternative medicine, *J. Altern. Complement. Med.* 10 (2004) 627–632

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²⁸⁴Hingorani AD, Windt DA van der, Riley RD, Abrams K, Moons KGM. Prognosis research strategy (PROGRESS) 4.

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²⁸⁵Wassenhoven M van. Verification of homeopathic symptoms. 2008 B Jain Archibell pub. Assesse, Belgium

²⁸⁶Rutten ALB, Frei H. Frequently occurring polar symptoms assessed by successful cases. *Homeopathy* 2012;101:103–111

²⁸⁷Rutten ALB, Stolper CF. Diagnostic test evaluation by patient-outcome study in homeopathy: balancing of feasibility and validity. *J Eval Clin Practice* 2009;15:1230–1235

result of the Virchow's cellular pathology model of disease. However, this model has long been superseded by the psychosocial model of disease and health.^{288,289} An understanding needs to be developed that disease is a phenomenon of multifaceted causality and can be influenced by a number of possible routes, pharmacological specificity being only one of them. The effects of a therapy that lead to changes in the quantifiable parameter are the specific effects, while those that influence the disease through other routes achievable through more holistic treatment and counselling, are called non-specific effects. All therapies yield non-specific and specific effects, with a variable ratio of the two. Homeopathy, being a holistic medicine, relies on a self-regulation process where only the defence mechanism of an individual is stimulated to act in defence of the disease. It could also be hypothesized that most CAM therapies including Homeopathy, by instilling hope, which could be a conjoined result of prolonged counselling, holistic treatment, freedom from side effects etc., influences psycho-neuro-endocrinological axis,²⁹⁰ or redress a delicate balance of physiological systems.²⁹¹ In conventional medicine too, the non-specific effects of a treatment are sometime reported to be more productive.^{292,293,294} Going by this understanding of treatment, the result of a therapy needs to be additive of both the specific and non-specific effects, which is not possible to infer from blinding methods in a control study.

Homeopathic treatment, so to speak, has more to deal within its scope of recovery than mere removal of a specific pathology. Additionally, the points to be focused in a case are rather individualistic and bear reflection of both mental and physical states. It is, therefore, improper to take into account only the specific effects reflected physically by patients of a homogenous group for interpreting the results of such complex treatment, in which the medication would vary from person to person,

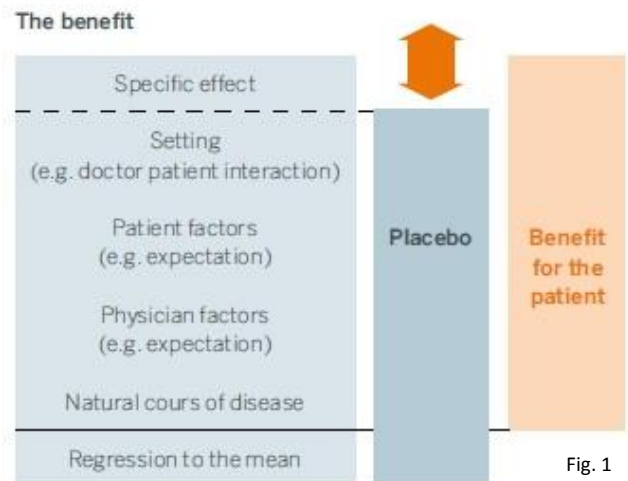


Fig. 1

even if they belong to same disease classification. Conversely, a set of individuals suffering from different diseases could also be given the same medicine, if other characteristic symptoms indicate so. To say then that Homeopathy, which treats an individual in a relatively complex manner than its conventional counterpart, doesn't work because it fails in RCTs, where only cause-and-effect relationship is studied, is drawing a far-fetched conclusion.

As it is, in the real world situation, the validity of various research designs, especially RCTs has been challenged. A successful RCT, with maximum internal validity and highly accurate specific effects, found in a homogenous group of patients, has a limited viability in a real-world situation where the patients are usually co-morbid and with varied levels of severity. Further, the blinding posed by the design is often breached, mostly at the doctors' end, who can easily guess the treatment group because of the resulting side effects. Although this impacts the results of the studies, such shortcomings are rarely addressed when evaluating the evidence. Further, with the funding springing from the pharmaceutical industries, the results could be positively biased to suit their needs.²⁹⁵

²⁸⁸Engel GL 1981 The need for a new medical model: a challenge for biomedicine. In: Capla AL, Engelhardt T, McCartney J (eds) Concepts of health and disease. Addison-Wesley, Reading, MA

²⁸⁹Engel GL 1982 The biopsychosocial model and medical education. New England Journal of Medicine 306: 802-05

²⁹⁰Frank JD 1989 Non-specific aspects of treatment: The view of a psychotherapist. In: Shepherd M, Sartorius N (eds) Non-specific aspects of treatment. Huber, Berne, pp 95-114

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²⁹³Kirsch I, Sapirstein G 1998; Listening to Prozac but hearing placebo: a meta-analysis of antidepressant medication. Prevention and Treatment: <http://journals.apa.org/prevention1:2a>

²⁹⁴Walach H, Maidoff C 1999 Is the placebo effect dependent on time? In: Kirsch I (ed) Expectancy, experience, and behaviour. American Psychological Association, Washington DC, pp 321-32

²⁹⁵ Walach H., Jonas W.B. and Lewith G.: The role of outcomes research in

Therefore, if we want to evaluate Homeopathy, or any other medical science, in a pragmatic manner, the real-world analysis is necessary. RCT may not be the best option to produce the maximal therapeutic response, especially in homeopathy, and may even be ethically questionable considering the lopsided design of this model. It is argued that outcomes studies and non-randomised, quasi-experimental comparisons are the most reliable research designs, if Homeopathy were to be studied for its benefits. The outcomes of such studies will also impact the general public more than the RCTs that are generally considered gold-standard in research but fail to immediately benefit the public at large due to their low external validity (Fig. 1). Blinded, placebo-controlled RCTs must, therefore, be backed with outcome and comparison data, which, in turn, would mean higher investment and more time. On the contrary, the outcomes studies and non-randomised, quasi-experimental comparison studies are not valued scientifically owing to the chance of running into bias and subjective comparability. However, these studies are often more worthwhile from a practical, patient-oriented and political point of view. Also, it goes without saying that no single method is capable of solving all the problems. RCTs and outcome studies can also be executed together, by nesting one within the other or following a RCT with a long-term observational phase.²⁸⁵

It can be concluded that outcomes research is a valuable tool in evaluating homeopathy. It cannot replace controlled and well-established trial methodology but it can and should complement it. It adds the element of practical relevance and external validity to the otherwise detached research efforts of RCTs. Further, it enables gathering data which RCTs are not designed for. Also, the patients who do not wish to be randomised, or have strong preferences and belief systems in Homeopathy can also be a part of this study. The outcomes research also allows one to study the long-term effects of a treatment, which is another important aspect not covered by RCT. As such, the scientific community needs to be more open-minded about unconventional methods for homeopathic research, as these could lead to a different outcome altogether.

evaluating complementary and alternative medicine; Lewith G., Jonas W.B. and Walach H.; Clinical research in complementary therapies; 1st edition; 2002; pp 29-45

²⁹⁶Mathie. R.T. & all (2012). "Method for appraising model validity of

Model Validity – A tool to assess homeopathic research

BioMedCentral Medical Research and Methodology systematic reviews of homeopathic publications

This method was carved out to validate a research through not only the scientific quality of a publication but also by giving equal importance to the homeopathic medical approach. To allow this assessment in a systematic way, a group of researchers (ISCHI) elaborated and tested a new method for appraising model validity of randomized controlled trials of homeopathic treatment: multi-rater concordance study.

A paper²⁹⁶ on this describes a method for assessing the model validity of RCTs of homeopathy. To date, only conventional standards for assessing intrinsic bias (internal validity) of trials have been invoked, with little recognition of the special characteristics of homeopathy. They aimed to identify relevant judgmental domains to use in assessing the model validity of homeopathic treatment (MVHT). We define MVHT as the extent to which a homeopathic intervention and the main measure of its outcome, as implemented in a randomized controlled trial (RCT), reflect 'state-of-the-art' homeopathic practice.

To reach this goal they used an iterative process, within an international group of experts. They developed a set of six judgmental domains, with associated descriptive criteria. The domains address:

- (I) the rationale for the choice of the particular homeopathic intervention;
- (II) the homeopathic principles reflected in the intervention;
- (III) the extent of homeopathic practitioner input;
- (IV) the nature of the main outcome measure;
- (V) the capability of the main outcome measure to detect change;
- (VI) the length of follow-up to the endpoint of the study.

Six papers reporting RCTs of homeopathy of varying design were randomly selected from the literature. A

randomized controlled trials of homeopathic treatment: multi-rater concordance study." BMC Medical Research Methodology 2012, 12-49.

standard form was used to record each assessor's independent response per domain, using the optional verdicts 'Yes', 'Unclear', 'No'. Concordance among the eight verdicts per domain, across all six papers, was evaluated using an appropriated statistical method. (65)

The six judgmental domains enabled MVHT to be assessed with 'fair' to 'almost perfect' concordance in each case. For the six RCTs examined, the method allowed MVHT to be classified overall as 'acceptable' in three, 'unclear' in two, and 'inadequate' in one.

They concluded that future systematic reviews of RCTs in homeopathy should adopt the MVHT method as part of

a complete appraisal of trial validity. This work is ongoing now.

In the *Journal Homeopathy* (2013);102:3-24, Mathie, R.T. & all published the next step. Looking at randomised controlled trials of homeopathy in humans and characterising the research journal literature available for systematic review, they concluded that from the 489 available records, 226 needs to be rejected as non-journal, minor or repeat publications, or lacking randomisation and/or controls and/or a 'homeopathic' intervention. The 263 accepted journal papers will be the basis for a forthcoming programme of systematic reviews.

Homeopathy in various specialties

Considering homeopathy's individualize patient approach, the scientific framework is much broader than could be expected. Homeopathic physicians are mostly focused on research about individualization, similarity and globality. That does not exclude research on some diagnoses and a lot of indications are reaching a IIIb level of evidence and would be further considered for more research.

Examples without reference are from the 63rd LMHI Congress on Evidence Based Homeopathy (2008); later publications are referenced:

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- Relton C, Smith C, Raw J, Walters C, Adebajo AO, Thomas KJ, Young TA. Healthcare provided by a homeopath as an adjunct to usual care for Fibromyalgia (FMS): results of a pilot RCT. Homeopathy. 2009; 98:77-82.
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Traumatology – Toxicology

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in the treatment of post-traumatic stress disorder. Review of results in three homeopathic practices in Gröningen. Retrospective study of 23 patients.

- This list is not exhaustive. A lot of cases series are regularly published in all areas of medicine. Topics are various and are linked to the main questions in medicine.

Tables for clinical research and cost-effectiveness studies

S.No	Study	Design	Intervention	Results
1.	Zanasi A, Mazzolini M, Tursi F, Morselli-Labate AM, Paccapelo A, Lecchi M. Homeopathic medicine for acute cough in upper respiratory tract infections and acute bronchitis: a randomized, double-blind, placebo-controlled trial. <i>Pulm Pharmacol Ther.</i> 2014;27(1):102-8. doi: 10.1016/j.pupt.2013.05.007.	A randomized, double-blind, placebo-controlled trial	A homeopathic syrup	In each group cough scores decreased over time, however, after 4 and 7 days of treatment, cough severity was significantly lower in the homeopathic group than in the placebo one ($p < 0.001$ and $p = 0.023$, respectively). In both groups its viscosity significantly decreased after 4 days of treatment ($p < 0.001$); however, viscosity was significantly lower in the homeopathic group ($p = 0.018$). Instead, the subjective evaluation did not significantly differ between the two groups ($p = 0.059$).
2.	Jong MC, Ermuth U, Augustin M. Plant-based ointments versus usual care in the management of chronic skin diseases: A comparative analysis on outcome and safety. <i>Complement Ther Med.</i> 2013;21:453-9	Prospective mono-centric comparative analysis	Homoeopathic medicine	After two years, the main outcome of responders to treatment was 52.3% (95%-CI: 36.1-64.9) in the ointment and 41.2% (95%-CI: 20.4-42.2) in the UC group. Change in SF-12 was not significantly different between both groups; PO: 5.4 (95%-CI: 3.4-7.3) versus UC: 3.2 (95%-CI: 1.5-4.9). The adjusted EQ-5D was found to be significantly different between the two groups after two years, in favour of the ointment group; PO: 0.113 (95%-CI: 0.052-0.174) and UC: -0.008 (95%-CI: -0.055-0.038). Other secondary outcome parameters such as patient satisfaction and number of adverse drug reactions were comparable.
3.	Wassenhoven MV. Clinical verification in homeopathy and allergic conditions. <i>Homeopathy</i> 2013;102:54-8	Cohort	Individualized homeopathy	For preventive treatments in hay fever patients, Arsenicum album was the most effective homeopathic medicine followed by Nux vomica, Pulsatilla pratensis, Gelsemium, Sarsaparilla, Silicea and Natrum muriaticum. For asthma patients, Arsenicum iodatum appeared most effective, followed by Lachesis, Calcarea arsenicosa, Carbo vegetabilis and Silicea. For eczema and urticaria, Mezereum was most effective, followed by Lycopodium, Sepia, Arsenicum iodatum, Calcarea carbonica and Psorinum.
4.	Nayak C, Oberai P, Varanasi R, Baig H, Raveender Ch, Reddy GRC, et al. A prospective multi-centric open clinical trial of homeopathy in diabetic distal symmetric polyneuropathy. <i>Homeopathy</i> 2013;102:130-8	Prospective multi-centric clinical observational study	Individualized homeopathy	A statistically significant improvement in DDSPPS total score ($p = 0.0001$) was found at 12 months from baseline. Most objective measures did not show significant improvement. Lycopodium clavatum ($n = 132$), Phosphorus ($n = 27$) and Sulphur ($n = 26$) were the medicines most frequently prescribed.

S.No	Study	Design	Intervention	Results
5.	Wadhvani GG. Homeopathic drug therapy homeopathy in chikungunya fever and post-chikungunya chronic arthritis: an observational study. Homeopathy 2013;102:193-8	Prospective observational study	Individualized homeopathy	Complete recovery was seen in 84.5% cases in a mean time of 6.8 days. 90% cases of PCCA recovered completely in a mean time of 32.5 days.
6.	Coppola L, Montanaro F. Effect of a homeopathic-complex medicine on state and trait anxiety and sleep disorders: a retrospective observational study. Homeopathy 2013;102:254-61	Open-label, retrospective, observational study	Homeopathic complex medicine	Compared to baseline, the average State-Trait Anxiety Inventory (STAI)-state score at visit 2 decreased by more than 6 points, while the STAI-trait score decreased by more than 3 points. This was statistically significant ($p < 0.0001$) for both subscales. These findings were stable in subgroup analyses (gender, age and anxiety level). The average number of hours slept per night increased significantly at visit 2 compared to baseline (from 5.1 ± 1.1 to 5.56 ± 0.9 h, $p < 0.0001$). A marked decrease in the average number of night-time awakenings was also observed at the second visit (-42%, $p < 0.0001$)
7.	Oberoi P, Balachandran I, Nair KRJ, Sharma A, Singh VP, Singh V, Nayak C. Homoeopathic management in depressive episodes: a prospective, unicentric, non-comparative, open-label observational study. Ind J Res Hom. 2013;7(3):116-25	Prospective, non-comparative, open label, observational study	Individualized homeopathy	A statistically significant ($P = 0.0001$, $P < 0.05$) difference in the mean scores of HDRS, using the paired t-test, was observed. The mean scores at baseline and at end were 17.98 ± 4.9 and 5.8 ± 5.9 , respectively. Statistically significant differences were also observed in the BDI and CGI scales. The most frequently used medicines were: Natrum muriaticum ($n = 18$), Arsenicum album ($n = 12$), Pulsatilla nigricans ($n = 11$), Lycopodium clavatum ($n = 7$) and Phosphorus ($n = 6$).
8.	Danno K, Colas A, Masson JL, Bordet MF. Homeopathic treatment of migraine in children: results of a prospective, multicenter, observational study. J Alt Complement Med. 2013;19(2):119-23.	Observational, prospective, open, nonrandomized, noncomparative, multicenter study	Individualized homeopathy	The frequency, severity, and duration of migraine attacks decreased significantly during the 3-month follow-up period (all $p < 0.001$). Preventive treatment during this time consisted of homeopathic medicines in 98% of cases (mean = 2.6 medicines/patient). Children spent significantly less time off school during follow-up than before inclusion (2.0 versus 5.5 days, respectively; $p < 0.001$). The most common preventive medicines used were Ignatia amara (25%; mainly 9C), Lycopodium clavatum (22%), Natrum muriaticum (21%), Gelsemium (20%), and Pulsatilla (12%; mainly 15C). Homeopathy alone was used for the treatment of migraine attacks in 38% of cases. The most commonly used medicines were Belladonna (32%; mainly 9C), Ignatia amara (11%; mainly 15C), Iris versicolor (10%; mainly 9C), Kalium phosphoricum (10%; mainly 9C), and Gelsemium (9%; mainly 15C and 30C).

S.No	Study	Design	Intervention	Results
9.	Roll S, Reinhold T, Pach D, Brinkhaus B, Icke K, Staab D, et al. Comparative effectiveness of homeopathic vs. conventional therapy in usual care of atopic eczema in children: long-term medical and economic outcomes. PLoS ONE 2013;8(1):e54973.	Prospective multi-centre comparative observational non-randomized rater-blinded study	Individualized homeopathy	The adjusted mean SCORAD showed no significant differences between the groups at 36 months (13.7 95% CI [7.9-19.5] vs. 14.9 [10.4-19.4], $p = 0.741$). The SCORAD response rates at 36 months were similar in both groups (33% response: homeopathic 63.9% vs. conventional 64.5%, $p = 0.94$; 50% response: 52.0% vs. 52.3%, $p = 0.974$). Total costs were higher in the homeopathic versus the conventional group (months 31-36 200.54 Euro [132.33-268.76] vs. 68.86 Euro [9.13-128.58], $p = 0.005$)
10.	Koley M, Saha S, Ghosh S, Mukherjee R, Kundu B, Mondal R, et al. Evaluation of patient satisfaction in a government homeopathic hospital in West Bengal, India. Int J High Dilution Res. 2013;12(43):52-61	Institutional, cross-sectional, observational study	--	Patients' satisfaction appeared to be high.
11.	Elio R, Marco P, Paola B, Marialessandra P, Mariella DS, Monia P, Monica DF. Homeopathy in the public health system: Outcome data from the Homeopathic Clinic of the Campo di Marte Hospital, Lucca, Italy (1998-2010). European J Integr Med. 2013 (article in press)	Data collection survey	Different forms of homeopathy	The most common presentations were for symptoms concerning respiratory (29.4%), digestive tract (17%) and dermatological (14.7%) diseases. A total of 47% of patients reported major improvement or even resolution of their clinical picture (GHHOS +3+4); an extremely low percentage of treatment with no results (10%); and a negligible percentage of worsening (0.5%). The younger the age the more successful the therapy outcome ($p < 0.001$) and longer treatment appeared to give better results ($p < 0.001$)
12.	Farrer S, Baitson ES, Gedah L, Norman C, Darby P, Mathie RT. Homeopathic prescribing for chronic and acute periodontal conditions in 3 dental practices in the UK. Homeopathy 2013; 102:242-7	Data collection survey	Individualized homeopathy	At least one follow-up (FU) appointment was reported for each of 46 patients (22 chronic [6 with IDS, 16 without IDS]; 24 acute [10 with IDS, 14 without IDS]). In chronic cases, strongly positive outcomes (score of +2 or +3) were reported by 2 (33.3%) of 6 IDS patients and by 1 (6.3%) of 16 non-IDS patients. In acute cases, strongly positive outcomes were reported by 7 (70%) of 10 IDS patients and by 8 (57.2%) of 14 non-IDS patients (no statistically significant difference between sub-groups). The FU conditions most frequently treated with homeopathy were chronic periodontitis (19 patients) and acute periodontal abscess (11 patients).

S.No	Study	Design	Intervention	Results
13.	Ghosh S, Mundle M, Chakraborty B, Saha S, Koley M, Hossain SI. Treatment Of Symptomatic Leiomyoma Of Uterus: An Open Observational Pilot Study. Homeopathic Links, Spring 2014;27(1): 50-55.	Open Observational Pilot Study	Individualized homeopathy	The most frequently consulted alternative therapists for uterine fibroids (leiomyomas) are the homeopaths; however, there is a paucity of research evidence. Based on a study involving 45 recruited patients with symptomatic uterine fibroids, the authors conclude that individualized homeopathy can be regarded as effective in this condition; however, randomised controlled trials are worth investigating. Source: http://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-0033-1350967
14.	Kalampokas T et al. Homeopathy for Infertility Treatment: A Case Series. Clinical And Experimental Obstetrics And Gynecology, 2014;41(2):158-159.	Case series	Homeopathic medicine.	Homeopathy has been used in the past for treating a broad aspect of diseases. In gynaecology, its use remains limited. Taking under consideration its clinical aspects, the authors attempted to use it for treating female sub fertility problems. With this study, the authors present five cases of female infertility treated successfully with the use of homeopathic treatment in a large obstetrics-gynaecology Hospital in Athens. http://www.ncbi.nlm.nih.gov/pubmed/24779242
15.	Rodríguez-van Lier ME, Simón LM, Gómez RE, Escalante IP. Integrative Health Care Method Based On Combined Complementary Medical Practices: Rehabilitative Acupuncture, Homeopathy and Chiropractic. African Journal of Traditional, Complementary and Alternative Medicine, 2013;11(1):180-186.	Survey	Acupuncture, homeopathy and chiropractic	64 patients rotated by the 3 areas taking an average of 30 meetings with rehabilitative acupuncture, 12 with homeopathy and 10 with chiropractic in January 2012 - 2013. The authors included the environmental aspects, biological, emotional, and behavioural to identify, recognize and integrate the form of manifestation of the disease. Later, it was ordered in a coherent way the etiologic factors, precipitating factors and identified the vulnerability of the patients as well as the structural alterations, classifying them in immediate, mediate and late. The changes in each meeting were submitted clinical attitudinal, behavioural, clinical and organic. The model of care was multifaceted and interdisciplinary with a therapeutic approach of individualization and a holistic view to carry out a comprehensive diagnosis and provide quality health care to the population. http://www.ncbi.nlm.nih.gov/pubmed/24653575
16.	Poruthukaren KJ, Palatty PL, Baliga MS, Suresh S. Clinical evaluation of	pilot study	Homeopathic medicine	Viscum album, an infrequently used antihypertensive in homeopathy, is evaluated by 1-group pre-test post-test model in primary hypertension. The drug was

S.No	Study	Design	Intervention	Results
	Viscum album mother tincture as an antihypertensive: a pilot study. Journal of Evidence Based Complementary and Alternative Medicine. 2014;19(1):31-5. doi: 10.1177/2156587213507726.			administered for 12 weeks at a dosage of 10 drops 3 times a day. Using paired t test, a significant drop in blood pressure ($P < .0001$) and serum triglyceride ($P < .0001$) was observed in the treatment group. This dual effect of Viscum album shows promise in optimizing therapy for primary hypertension. http://www.ncbi.nlm.nih.gov/pubmed/24647376 ; http://chp.sagepub.com/content/19/1/31.full.pdf+html
17.	Gaitan-Sierra C, Hyland ME. Common Factor Mechanisms in Clinical Practice and Their Relationship with Outcome. Clinical Psychology and Psychotherapy, 2014. doi: 10.1002/cpp.1894.	--	Homeopathic medicine	This study investigates three common factor mechanisms that could affect outcome in clinical practice: response expectancy, the affective expectation model and motivational concordance. Clients attending a gestalt therapy clinic (30 clients), a sophrology (therapeutic technique) clinic (33 clients) and a homeopathy clinic (31 clients) completed measures of expectancy and the Positive Affect and Negative Affect Schedule (PANAS) before their first session. After 1 month, they completed PANAS and measures of intrinsic motivation, perceived effort and empowerment. Expectancy was not associated with better outcome and was no different between treatments. Although some of the 54 clients who endorsed highest expectations showed substantial improvement, others did not: 19 had no change or deteriorated in positive effect, and 18 had the same result for negative effect. Intrinsic motivation independently predicted changes in negative affect ($\beta = -0.23$). Intrinsic motivation ($\beta = 0.24$), effort ($\beta = 0.23$) and empowerment ($\beta = 0.20$) independently predicted positive affect change. Expectancy ($\beta = -0.17$) negatively affected changes in positive affect. Clients found gestalt and sophrology to be more intrinsically motivating, empowering and effortful compared with homeopathy. Greater improvement in mood was found for sophrology and gestalt than for homeopathy clients. These findings are inconsistent with response expectancy as a common factor mechanism in clinical practice. The results support motivational concordance (outcome influenced by the intrinsic enjoyment of the therapy) and the affective expectation model (high expectations can lead for some clients to

S.No	Study	Design	Intervention	Results
				<p>worse outcome). When expectancy correlates with outcome in some other studies, this may be due to confound between expectancy and intrinsic enjoyment. Common factors play an important role in outcome. Intrinsic enjoyment of a therapeutic treatment is associated with better outcome. Active engagement with a therapeutic treatment improves outcome. Unrealistic expectations about a therapeutic treatment can have a negative impact on outcome.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24634051</p>
18.	<p>Saha S, Koley M, Arya JS, Choubey G, Ghosh S, Ganguly S, Ghosh A, Saha S, Mundle M. Medicine Prescription Practices of Homeopathic Undergraduate Students in West Bengal, India. Journal of Integrative Medicine, 2014;12(1):7-12.</p>	Cross-sectional study	Homeopathic medicines	<p>The authors aimed to determine the practice and attitudes of prescription by homeopathic undergraduate students. A cross-sectional study was carried out involving all the students from four government homeopathic schools of West Bengal, India using self-administered questionnaires. Chi-square tests and logistic univariate regression analyses were performed to identify associations and differences. A total of 328 forms were completed. Of these, 264 (80.5%) homeopathic undergraduate students admitted of prescribing medicines independently. The most common reasons for this were 'urgency of the problem' (35.2%), 'previous experience with same kind of illness' (31.8%), and 'the problem too trivial to go to a doctor' (25.8%). About 63.4% of the students thought that it was alright to independently diagnose an illness while 51.2% thought that it was alright for them to prescribe medicines to others. Common conditions encountered were fever, indigestion, and injury. Students who prescribed medicines were more likely to belong to Calcutta Homeopathic Medical College and Hospital (OR 5.8; 95% CI 2.247-14.972). Prescription by students gradually increased with academic years of homeopathic schools. Prescription of medicines by homeopathic undergraduate students is quite rampant and corrective measures are warranted.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24461590;</p>

S.No	Study	Design	Intervention	Results
				http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964(14)60004-2.pdf
19.	Lert F et al. Characteristics Of Patients Consulting their Regular Primary Care Physician According to their Prescribing Preferences for Homeopathy and Complementary Medicine. Homeopathy, 2014;103(1): 51-57.	Survey	Complementary Alternative Medicine	<p>The objective of this study was to describe and compare patients visiting physicians in general practice (GPs) who prescribe only conventional medicines (GP-CM), regularly prescribe homeopathy within a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). The EPI3-LASER study was a nationwide observational survey of a representative sample of GPs and their patients from across France. Physicians recorded their diagnoses and prescriptions on participating patients who completed a self-questionnaire on socio-demographics, lifestyle, SF-12 questionnaire and the complementary and alternative medicine beliefs inventory (CAMBI). A total of 6379 patients (participation rate 73.1%) recruited from 804 GP practices participated in this survey. Patients attending a GP-Ho were slightly more often female with higher education than in the GP-CM group and had markedly healthier lifestyle. They did not differ greatly in their co-morbidities or quality of life but exhibited large differences in their beliefs in holistic medicine and natural treatments, and in their attitude toward participating to their own care. Similar but less striking observations were made in patients of the GP-Mx group. Patients seeking care with a homeopathic GP did not differ greatly in their socio-demographic characteristics but more so by their healthier lifestyle and positive attitude toward CAM.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24439455</p>
20.	Gruber M, Ben-Arye E, Kerem N, Cohen-Kerem R. Use of Complementary Alternative Medicine in Paediatric Otolaryngology Patients: A Survey. International Journal of Paediatric	cross-sectional survey	Complementary Alternative Medicine	<p>The authors investigated the pattern of CAM use among children and adolescents attending a paediatric otolaryngology clinic in a cross-sectional survey, using anonymous questionnaires filled-in by the parents accompanying young patients. Parents were asked about their general attitude toward CAM and whether they had ever consulted or considered a consultation with a CAM therapist. Subsequently, CAM users were asked to provide</p>

S.No	Study	Design	Intervention	Results
	Otorhinolaryngology, 2014; 78(2):248-252.			<p>details on CAM modalities used and on their overall satisfaction with CAM therapy. Of 308 questionnaires administered, 294 parents responded (95% response rate). 32% reported considering CAM, or previous or current CAM use. Homeopathy was reported to be used by 36% parents. CAM users assessed success rate as being: successful (37%), unsuccessful (24%) or undetermined (39%). In most cases parents stated that the primary physician was aware of CAM use by the child (74%). The otolaryngologist awareness of parents' preference and interest may contribute to decision making regarding pediatric patients' management.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24332665</p>
21.	Gottschling S, Meyer S, Längler A, Scharifi G, Ebinger F, Gronwald B. Differences In Use of Complementary and Alternative Medicine Between Children and Adolescents With Cancer in Germany: A Population Based Survey. Pediatric Blood Cancer, 2014; 61(3):488-492	Population Based Survey	Homeopathy and Bach flower remedies	<p>Use of complementary and alternative medicine (CAM) in children with cancer is increasing, however, data concerning differences between children and adolescents focusing on prevalence, reasons for use/non-use, costs, adverse effects, and socio-demographic factors are lacking. A population-based survey over a 1 year period with 497 participants was conducted. Of the 457 respondents (92%) 322 were children and 135 adolescents with malignancies. 31% reported CAM use from the time when being diagnosed, compared to an overall lifetime prevalence rate of 41% before cancer diagnosis. Homeopathy and Bach flower remedies were among the most frequently used CAM therapies. The main reasons for use were to reduce therapy-related side effects, to strengthen the immune system, to achieve physical stabilization and to increase healing chances. Socio-demographic factors associated with CAM use were higher parental education and higher family income. A majority of CAM users (97%) would recommend CAM use. Most users (78%) informed a physician about CAM use. Side effects were rarely reported (5%), minor and self-limiting. Clinical care and the physician-patient relation would profit from an enhanced</p>

S.No	Study	Design	Intervention	Results
				<p>understanding of CAM and a greater candidness towards the parental needs.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24038864</p>
22.	<p>Bonacchi et al. Use and Perceived Benefits of Complementary Therapies by Cancer Patients Receiving Conventional Treatment in Italy. Journal of Pain Symptoms Management, 2014;47(1):26-34.</p>	Survey	Complementary Alternative Medicine	<p>This study aimed to investigate the demographic and psychological characteristics of Italian cancer patients who use complementary therapies (CTs) and the perceived benefit of users. 803 patients from six Italian oncology departments were interviewed about CT use and completed two questionnaires to explore psychological distress and the resilience trait called sense of coherence (SOC). Patients included in the study had different primary tumor sites and were in different phases of the disease and care process. At the time of measurement, 37.9% of patients were using one or more types of CTs. Homeopathy was one of the most frequently (6.4%) used CTs. The Italian context is characterized by a high percentage of patients who informed their physicians about CT use (66.3%) and who experienced benefits (89.6%); 75.2% of the patients had used CTs in the past. Multivariate analysis revealed that young, female patients, who previously used CAM in the past, appear more likely to use at least one type of CT in the present. Predictors of the use of CTs varied according to the type of CT. Among psychological factors, SOC was positively associated with both past and present CT use. Overall prevalence of CTs among Italian cancer patients is high and is in accordance with the European average. In addition to clinical and socio-demographic factors, the resilience trait SOC also was associated with CT use.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/23916679</p>
23.	<p>Galicia-Connolly E. Cam use in Paediatric Neurology: An Exploration of Concurrent use with Conventional Medicine.</p>	Survey	Complementary Alternative Medicine	<p>A survey instrument was developed to inquire about use of CAM products and therapies, including reasons for use, perceived helpfulness, and concurrent use with conventional medicine, and administered to patients or their parents/guardians at the Stollery Children's Hospital in Edmonton and the Children's Hospital of Eastern Ontario (CHEO) in Ottawa, Canada. Overall CAM</p>

S.No	Study	Design	Intervention	Results
	PLoS One, 2014;9(4):94078.			<p>use at the Stollery was 78%, compared to 48% at CHEO. Homeopathy was identified as one of the commonest CAM used products (24%) and practice (16%). Many patients used CAM products at the same time as conventional medicine but just over half (57%) discussed this concurrent use with their physician. CAM use is common in pediatric neurology patients and most respondents felt that it was helpful, with few or no harms associated. However, this use is often undisclosed, increasing possibility of interactions with conventional drugs.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24736474</p> <p>http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0094078&representation=PDF</p>
24.	Gaertner K et al. Additive Homeopathy in Cancer Patients: Retrospective Survival Data from a Homeopathic Outpatient Unit at the Medical University of Vienna. Complementary Therapies in Medicine, 2014;22(2):320-332.	Retrospective Survival Data	Homeopathic treatment complementary to conventional	<p>Data from cancer patients who had undergone homeopathic treatment complementary to conventional anti-cancer treatment at the Outpatient Unit for Homeopathy in Malignant Diseases, Medical University Vienna, Department of Medicine I, Vienna, Austria, were collected, described and a retrospective subgroup-analysis with regard to survival time was performed. In four years, a total of 538 patients visited OPD, 62.8% were women, nearly 20% had breast cancer. 53.7% had undergone at least three homeopathic consultations and 18.7% fulfilled inclusion criteria for survival analysis. The surveyed neoplasms were glioblastoma, lung, cholangiocellular and pancreatic carcinomas, metastasized sarcoma, and renal cell carcinoma. Median overall survival was compared to expert expectations of survival outcomes by specific cancer type and was prolonged across observed cancer entities ($p<0.001$).</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24731904</p>
25.	Koehl B et al. Survey Of German Non-Medical Practitioners Regarding Complementary And	Survey	Complementary Alternative Medicine	<p>A survey was conducted by using an online questionnaire on the 1,500 members of the non-medical practitioner (NMP) associations, of which 299 took part. The treatments were found to be</p>

S.No	Study	Design	Intervention	Results
	Alternative Medicine In Oncology. Oncol Res Treat. 2014;37(1-2):49-53.			<p>heterogeneous. Homeopathy was used by 45% of the NMPs; 10% believed it to be a treatment directly against cancer. Many therapies provided by NMPs were biologically based and therefore might interfere with conventional cancer therapy. Thus, patients were at risk of interactions, especially as most NMPs did not adjust their therapies to those of the oncologist. Moreover, risks might arise from these CAM methods as NMPs partly believed them to be useful anticancer treatments. This might lead to the delay or even omission of effective therapies.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24613909</p>
26.	Schmacke N, Müller V, Stamer M. What Is It About Homeopathy That Patients Value? And What Can Family Medicine Learn From This? Quality in Primary Care. 2014;22(1):17-24.	Survey	Complementary Alternative Medicine	<p>The survey in Germany was conducted on 21 women and 5 men suffering from chronic conditions by using questionnaire-based, semi-structured expert interviews about their views on the medical care provided by homeopathic medical practitioners. The 'fit' between therapist and patient proved to be particularly important. Both the initial homeopathic consultation and the process of searching for the appropriate medication were seen by patients as confidence-inspiring confirmations of the validity of homeopathic therapy which they considered desirable in this personalised form. The possible adoption by family medicine of elements of homeopathy may be seen as controversial, but this study again indicates the vital importance of successful communication to ensure a sustainable doctor-patient relationship.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24589147</p>

S.No	Study	Design	Intervention	Results
27.	Thanner M, Nagel E, Loss J. Complementary and Alternative Medicine In The German Outpatient Setting: Extent, Structure And Reasons For Provision. Das Gesundheitswesen, 2014	Survey	Complementary and Alternative Medicine	<p>A standardised questionnaire was developed addressing reasons and patterns of CAM provision. The questionnaire was sent by post to 2396 general practitioners and specialists in 9 selected German districts, of which 553 (23%) physicians participated in the survey. 63% of the respondents (n=350) answered that they had provided some sort of CAM to their patients within a period of 12 months preceding the study. The one of the most frequently provided methods was homeopathy. In the sample, 90% of the orthopaedists were CAM providers, the highest rate among the participating disciplines. Several reasons for offering CAM were identified: conviction of therapeutic effectiveness regarding the patient's situation (68%), aspects of therapeutic freedom (47%) or less harmful side effects than conventional therapies (34%) and 6% provide CAM for monetary reasons. Findings suggest that the provision of CAM is widespread in the German outpatient setting. However, it has to be taken into account that a selection bias may apply which may lead to an overestimation of CAM provision.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24566840</p>
28.	Buhling KJ, Daniels BV, Studnitz FS, Eulenburg C, Mueck AO. The Use of Complementary and Alternative Medicine by Women Transitioning Through Menopause in Germany: Results of a Survey of Women Aged 45-60 Years. Complementary Therapies in Medicine, 2014;22(1):94-98.	Survey	Complementary Alternative Medicine	<p>A self-administered questionnaire was sent to 9785 randomly selected women in Germany aged between 45 and 60 year of which total of 1893 (19.3%) questionnaires have been sent back. 81% (n=1517) of the responding women stated that they had experienced menopausal complaints at least once. Symptoms ranged from vasomotor symptoms, including hot flushes and night sweats, in 71.2% of cases, to bladder problems in 42.7%. The average symptom score (MRS II total score, range 1-44) among the respondents was 12.76±9.6. More than half (56%; n=1049/1872) of the responding women had used some form of therapy to alleviate their symptoms at least once. The majority of women undertaking a therapy (64.8%; n=679/1049) had used only CAM interventions (either one or more type of CAM), 14.2% (n=149) had used hormone replacement therapy (HRT) only, while 21.1% (n=221/1049) had tried both CAM</p>

S.No	Study	Design	Intervention	Results
				<p>and HRT. Homeopathy (14.9%) was one of the popular and perceived to be effective (73.7%; n=205) CAM interventions stated by the respondents. CAM interventions to alleviate menopausal complaints are popular among German women, with 48.2% (n=900/1872) of respondents reporting having used CAM either alone or in combination with HRT.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24559823</p>
29.	Saghatchian M, Bihan C, Chenailler C, Mazouni C, Dauchy S, Delalogue S. Exploring Frontiers: Use Of Complementary And Alternative Medicine Among Patients With Early-Stage Breast Cancer. Breast, 2014, pii: S0960-9776(14)00010-1.	Observational study	Complementary Alternative Medicine	<p>The transversal, prospective study evaluated the use of CAM among patients receiving adjuvant chemotherapy or endocrine therapy for early stage breast cancer. 69/184 responders (37.5%) reported using at least one CAM. CAM use was associated with younger age ($p = 0.03$) and higher education level ($p < 0.001$). Pharmacological substances (e.g., homeopathy, phytotherapy) were the most commonly used (79.7%). A total of 65.8% of users felt that these treatments have demonstrated evidence of efficacy and 74.8% that they were not associated with side effects. The main goal for use was improvement of treatment-related symptoms (28.3%); secondary goal was increasing the general health status (20.5%). Patients reported high needs for information on CAMs. CAM use was associated with mild differences in secondary adverse events reported by patients. Breast cancer patients are common users of CAM concomitantly to their conventional cancer treatments and should be investigated regarding their current consumption of CAM. Furthermore, they need advice evidence-based data on these treatments and potential interactions with on-going treatments.</p> <p>Source:http://www.ncbi.nlm.nih.gov/pubmed/24529905</p>
30.	Stewart D, Pallivalappila A, Shetty A, Pande B, McLay J. Healthcare Professional Views And Experiences of Complementary and Alternative Therapies in	Prospective Questionnaire Survey	Complementary Alternative Medicine	<p>A prospective questionnaire based survey on all healthcare professionals (135) involved in the care of pregnant women (midwives, obstetricians, anaesthetists) in Maternity services in Grampian, North East Scotland, to investigate the use of complementary and alternative medicines (CAMs)</p>

S.No	Study	Design	Intervention	Results
	Obstetric Practice In North East Scotland: A Prospective Questionnaire Survey. British Journal of Obstetrics and Gynecology, 2014, doi: 10.1111/1471-0528.12618.			therapy by UK healthcare professionals involved in the care of pregnant women, and to identify key predictors of use. Out of 87% respondents, 32.5% had recommended (prescribed, referred, or advised) the use of CAMs to pregnant women. Homeopathy (50%) was one of the most frequently recommended CAMs. Although univariate analysis identified that those who recommended CAMs were significantly more likely to be midwives who had been in post for more than 5 years, had received training in CAMs, were interested in CAMs, and were themselves users of CAMs. Despite the lack of safety or efficacy data, a wide variety of CAM therapies are recommended to pregnant women by approximately a third of healthcare professionals, with those recommending the use of CAMs being eight times more likely to be personal CAM users. Source: http://www.ncbi.nlm.nih.gov/pubmed/24512627
31.	Grimaldi-Bensouda L et al. Management of Upper Respiratory Tract Infections by Different Medical Practices, Including Homeopathy, And Consumption Of Antibiotics In Primary Care: The Epi3 Cohort Study In France 2007-2008. PLoS One, 2014;9(3):89990.	Cohort study	Homeopathy, conventional treatment	Prescribing of antibiotics for upper respiratory tract infections (URTI) varies substantially in primary care. The authors intended to describe and compare antibiotic and antipyretic/anti-inflammatory drugs use, URTI symptoms' resolution and occurrence of potentially-associated infections in patients seeking care from general practitioners (GPs) who exclusively prescribe conventional medications (GP-CM), regularly prescribe homeopathy within a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). The EPI3 survey was a nationwide population-based study of a representative sample of 825 GPs and their patients in France (2007-2008). GP recruitment was stratified by self-declared homeopathic prescribing preferences. Adults and children with confirmed URTI were asked to participate in a standardized telephone interview at inclusion, 1, 3, and 12-month follow up. Study outcomes included medication consumption, URTI symptoms' resolution and potentially-associated infections (sinusitis or otitis media/externa) as reported by patients. Analyses included calibration to account for non-respondents and groups were compared using multivariate analyses adjusting for

S.No	Study	Design	Intervention	Results
				<p>baseline differences with a propensity score. 518 adults and children with URTI (79.3% rhinopharyngitis) were included (36.9% response rate comparable between groups). As opposed to GP-CM patients, patients in the GP-Ho group showed significantly lower consumption of antibiotics (OR = 0.43, 95% CI 0.27-0.68) and antipyretic/anti-inflammatory drugs (OR = 0.54, 95% CI: 0.38-0.76) with similar evolution in related symptoms (OR = 1.16, 95% CI: 0.64-2.10). An excess of potentially-associated infections (OR = 1.70, 95% CI: 0.90-3.20) was observed in the GP-Ho group (not statistically significant). No difference was found between GP-CM and GP-Mx patients. Patients who chose to consult GPs certified in homeopathy used less antibiotics and antipyretic/anti-inflammatory drugs for URTI than those seen by GPs prescribing conventional medications. No difference was observed in patients consulting GPs within mixed-practice. A non-statistically significant excess was estimated through modelling for associated infections in the GP-Ho group and needs to be further studied.</p> <p>Source: http://www.ncbi.nlm.nih.gov/pubmed/24642965 http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0089990&representation=PDF</p>
32.	Miglani A, Manchanda RK. Observational study of <i>Arctium lappa</i> in the treatment of acne vulgaris. Homeopathy. 2014; 103(3): 203-7. doi: 10.1016/j.homp.2013.12.002	Uncontrolled observational interventional study	Homeopathic medicine	<p>Objective assessment was change in acne lesion counts supplemented with Global Acne Grading System (GAGS) and subjective assessment by using Acne-Specific Quality of Life questionnaire (Acne-QoL). Out of 34 human subjects, 32 completed the follow-up. Statistical significant results were seen in lesion counts, GAGS and Acne-QoL score (p value <0.001). <i>Lappa</i> has shown positive effects in the treatment of acne especially of inflammatory type.</p> <p>Source: http://www.ncbi.nlm.nih.gov/pubmed/24931753</p>
33.	France Lert, Lamiae Grimaldi-Bensouda, Frederic Rouillon, Jacques Massol, Didier Guillemot, Bernard Avouac, Gerard Duru, Anne-Marie	Survey	Complementary & Alternative Medicine	<p>Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine;</p>

S.No	Study	Design	Intervention	Results
	Magnier, Michel Rossignol, Lucien Abenheim and Bernard Begaud Homeopathy (2014) 103, 51-57			
34.	Chand K. S., Manchanda RK, Batra S., Mittal R. Homeopathy In The Treatment Of Tubercular Lymphadenitis (TBLN) – An Indian Experience; Homeopathy (2011) 100, 157-167	Observational study	Homeopathic medicine	In India, patients with tubercular lymphadenitis (TBLN) often consult homeopaths but such cases are seldom documented. The objective of the present study is to document such experience. A retrospective exploratory study of 25 positively diagnosed cases of TBLN has led to the development of a homeopathic regime consisting of a patient specific constitutional medicine, one disease specific biotherapy (Tuberculinum) and Silicea 6x as supportive medicine. Homeopathy can be used as a complement to conventional antitubercular treatment (ATT) with beneficial results.
35.	Chand KS, Manchanda RK, Mittal R, Batra S, Banavaliker JN, De I. Homeopathic treatment in addition to standard care in multi drug resistant pulmonary tuberculosis: a randomized, double blind, placebo controlled clinical trial. Homeopathy. 2014;103(2):97-107. doi: 10.1016/j.homp.2013.12.003	Randomized, double blind, placebo controlled clinical trial	Standard Regimen plus individualized homeopathic medicine	120 diagnosed MDR-TB patients (both culture positive and negative) were enrolled and randomized to receive Standard Regimen + individualized homeopathic medicine (SR + H) or Standard Regimen + identical placebo (SR + P). There was an improvement in all the outcome measures as per intention to treat (ITT) and per protocol (PP) analyses. ITT analyses revealed sputum culture conversion from positive to negative in 23 (38.3%) in SR + H; 23 (38.3%) patients in SR + P group; ($p = 0.269$) and 27 (55.1); 21 (42.8%), $p = 0.225$ as PP analyses. The mean weight gain in SR + H group was 2.4 ± 4.9 and in SR + P was 0.8 ± 4.4 ; [$p = 0.071$], reduction in ESR in SR + H was -8.7 ± 13.2 ; SR + P was 3.9 ± 15.4 [$p = 0.068$]. The mean increase in hemoglobin was by 0.6 ± 1.7 in SR + H & 0.3 ± 2.3 [$p = 0.440$] in SR + P group at 95% confidence interval. Statistically significant improvement was seen in CXR in 37 (61.7%) in SR + H and 20 (33.3%) patients in SR + P group ($p = 0.002$). Subgroup analyses of culture positive patients showed statistically significant improvement in CXR ($p = 0.0005$), weight gain ($p = 0.026$), increase in hemoglobin ($p = 0.017$) and reduction in ESR ($p = 0.025$) with add on homeopathy. The cure rate was 11.4% more in SR + H group as compared to placebo group. Change in sputum culture conversion, was not statistically significant. Source: http://www.ncbi.nlm.nih.gov/pubmed/24685414

S.No	Study	Design	Intervention	Results
36.	Poole j. Individualised homeopathy after cancer treatment. Nurs times. 2014 oct 8-14;110(41):17-9.	Community-based study	Homeopathy	Fifteen survivors of any type of cancer scored their total, physical and emotional wellbeing using the functional assessment of chronic illness therapy for cancer (facit-g) before and after receiving four individualised homeopathy (ih) sessions. Eleven women had statistically positive results for emotional, physical and total wellbeing based on facit-g scores. Findings support previous research, suggesting cam or ih could be beneficial for survivors of cancer. Source: http://www.ncbi.nlm.nih.gov/pubmed/26012051
37.	Danno K, Cognet-Dementhon B, Thevenard G, Duru G, Allaert FA, Bordet MF. Management of the early symptoms of influenza-like illnesses and ear, nose and throat (ENT) disorders by pharmacists. Homeopathy. 2014 Oct;103(4):239-49. doi: 10.1016/j.homp.2014.04.001	prospective, observational study	Homeopathy combines with allopathic medicine	573 patients (mean age: 42.5 ± 16.2 years; 61.9% female) were recruited by 133 pharmacies. Two-thirds of patients (63.2%) visited the pharmacy early (<24 h) after symptom onset. The most common symptoms were runny nose (56.4%), sore throat (54.6%) and cough (49.0%). Patients were given 2.6 ± 1.2 medications; 98.4% of patients received allopathic (usually paracetamol, 33.5%) and 25.3% homeopathic (Oscillococcinum, 56.6%) treatment, usually combined with allopathy. Compliance was good and 77.2% of patients continued treatment for 3 days. Most symptoms improved significantly after 3 days and quality of life was enhanced. 85.9% of patients were satisfied with the advice received. The clinical improvement and high patient satisfaction observed validate the role of the pharmacist as a health professional of first resort. Source: http://www.ncbi.nlm.nih.gov/pubmed/25439040
38.	Chauhan VK, Manchanda RK, Narang A, Marwaha RK, Arora S, Nagpal L, Verma SK, Sreenivas V. Efficacy of homeopathic intervention in subclinical hypothyroidism with or without autoimmune thyroiditis in children: an exploratory randomized control study. Homeopathy. 2014 Oct;103(4):224-31. doi: 10.1016/j.homp.2014.08.004	Exploratory, randomized, placebo controlled, single blind trial.	Individualized homeopathy	Based on primary outcome measures (TSH and/or antiTPOab) three major groups were formed: Group A - SCH + AIT (n = 38; high TSH with antiTPOab+), Group B - AIT (n = 47; normal TSH with antiTPOab+) and Group C - SCH (n = 109; only high TSH) and were further randomized to two subgroups-verum and control. Individualized homeopathy or identical placebo was given to respective subgroup. 162 patients completed 18 months of study. Baseline characteristics were similar in all the subgroups. The post treatment serum TSH (Group A and C) returned to normal limits in 85.94% of verum and 64.29% of controls (p < 0.006), while serum AntiTPOab titers (Group A and B) returned within normal limits in 70.27% of verum and 27.02% controls (p < 0.05). Eight children (10.5%) progressed to overt hypothyroidism (OH) from control group. A statistically significant decline in serum TSH values and antiTPOab titers indicates that the homeopathic intervention has not only the potential to treat SCH with or without antiTPOab but may also prevent progression to OH. Source: http://www.ncbi.nlm.nih.gov/pubmed/25439038

S.No	Study	Design	Intervention	Results
39.	Brulé D, Sule L, Landau-Halpern B, Nastase V, Jain U, Vohra S, Boon H. An open-label pilot study of homeopathic treatment of attention deficit hyperactivity disorder in children and youth. <i>Forsch Komplementmed</i> . 2014;21(5):302-9. doi: 10.1159/000368137.	Open-label pilot study	Individualized homeopathy	ADHD symptoms were assessed using the Conners 3 - Parent Questionnaire administered at each consultation. The pre- and post-study difference in Conners Global Index - Parent (CGI-P) T-score was evaluated for each participant. Baseline data of those who showed a statistically significant improvement (responders) were compared to those who did not (non-responders). 35 participants were enrolled over 11 months. 80% completed all 10 consultations in a median of 12.1 months. 63% had a statistically significant improvement in the primary outcome, first occurring after a mean of 4.5 visits. Overall scores for participants completing at least 2 data points decreased from a baseline median of 85.5 to 74.0 ($p < 0.001$, CI 95%). There were no significant baseline differences between responders and non-responders. No serious adverse events related to the therapy were reported. The change in the median CGI-P T-score from baseline to the end of this open-label pilot study was statistically significant. The research methods are feasible. Future studies are warranted. Source: http://www.ncbi.nlm.nih.gov/pubmed/25427521
40.	Malapane E, Solomon EM, Pellow J. Efficacy of a homeopathic complex on acute viral tonsillitis. <i>J Altern Complement Medicine</i> . 2014;20(11):868-73. doi: 10.1089/acm.2014.0189.	Randomized, double-blind, placebo-controlled, pilot study	Homoeopathic complex	Thirty children, age 6 to 12 years, with acute viral tonsillitis were recruited from a primary school in Gauteng, South Africa. Participants took two tablets of the medication four times daily. The treatment group received lactose tablets medicated with the homeopathic complex (Atropa belladonna D4, Calcarea phosphoricum D4, Hepar sulphuris D4, Kalium bichromat D4, Kalium muriaticum D4, Mercurius protoiodid D10, and Mercurius biniodid D10). The placebo consisted of the unmedicated vehicle only. The treatment group had a statistically significant improvement in the following symptoms compared with the placebo group: pain associated with tonsillitis, pain on swallowing, erythema and inflammation of the pharynx, and tonsil size. The homeopathic complex used in this study exhibited significant anti-inflammatory and pain-relieving qualities in children with acute viral tonsillitis. No patients reported any adverse effects. Source: http://www.ncbi.nlm.nih.gov/pubmed/25238506
41.	Mourão LC, Cataldo DM, Moutinho H, Fischer RG, Canabarro A. Additional effects of homeopathy on chronic periodontitis: a 1-year follow-up randomized clinical trial. <i>Complement Ther Clin Pract</i> . 2014;20(3):141-6.	Randomized clinical trial	Homoeopathic medicine	The aim of this study was to test the hypothesis that homeopathy (H) enhances the effects of scaling and root planing (SRP) in patients with chronic periodontitis (CP). 50 patients with CP were randomly allocated to one of two treatment groups: SRP (C-G) or SRP + H (H-G). Assessments were made at baseline and after 3 and 12 months of treatments. The local and systemic responses to the treatments were evaluated by clinical and serologic parameters, respectively. Both groups displayed significant improvements, however, using clinical attachment gain and reductions in HDL, LDL and Total

S.No	Study	Design	Intervention	Results
	doi: 10.1016/j.ctcp.2014.03.003.			Cholesterol, Triglycerides, Glucose and Uric acid, from baseline to 1 year, as criteria for treatment success, H-G performed significantly better than C-G. The findings of this 1-year follow-up randomized clinical trial suggest that homeopathic medicines, as an adjunctive to SRP, can provide significant local and systemic improvements for CP patients. Source: http://www.ncbi.nlm.nih.gov/pubmed/25129881
42.	Pannek J, Pannek-Rademacher S, Jus MC, Jus MS. Paralytic ileus after ileocystoplasty in a patient with spinal cord injury: is homeopathy helpful? Urologe A. 2014;53(11):1661-3. doi: 10.1007/s00120-014-3588-z.	Case report	Homoeopathic medicine	A paralytic ileus is a typical complication of ileocystoplasty of the bladder. In patients with a spinal cord injury, this risk is higher due to a pre-existing neurogenic bowel dysfunction. The authors present the case of a paraplegic man who developed a massive paralytic ileus after ileocystoplasty and surgical revision. Conventional stimulation of bowel function was unsuccessful; only by an adjunctive homeopathic treatment was normalization of bowel function achieved. Adjunctive homeopathic therapy is a promising treatment option in patients with complex bowel dysfunction after abdominal surgery who do not adequately respond to conventional treatment. Source: http://www.ncbi.nlm.nih.gov/pubmed/25116088
43.	Shah R. Effect of orally administered potentized capsaicin and dihydrocapsaicin in humans: a homeopathic pathogenetic trial. Forsch Komplementmed. 2014;21(3):172-7. doi: 10.1159/000365116.	Double-blind, randomized placebo-controlled homeopathic pathogenetic trial	Combination of capsaicin and dihydrocapsaicin	A preparation of orally administered ultra-high diluted capsaicin and dihydrocapsaicin unveiled qualitatively and quantitatively distinct symptoms, comparable with effects of the crude substance. Compared to placebo, the homeopathic preparation produced significant symptoms in healthy human volunteers. These findings can subsequently be used therapeutically. Source: http://www.ncbi.nlm.nih.gov/pubmed/25060156
44.	Frass M, et al. Two Cases of Fulminant Hepatic Failure from Amanita phalloides Poisoning Treated Additively by Homeopathy. Ochsner J. 2014;14(2):252-8.	Case report	Classical homeopathy	2 patients presented with severe hepatic failure following intoxication with Amanita phalloides. Both patients were admitted to the intensive care unit; 1 patient suffered from hepatic failure solely, and the second patient experienced severe 5-organ failure. In addition to conventional intensive care treatment, both patients were treated additively with classical homeopathy. The 2 patients survived without any residual pathological sequel. Source: http://www.ncbi.nlm.nih.gov/pubmed/24940137
45.	Peckham EJ, et al. Interim results of a randomised controlled trial of	Randomised controlled trial	individualised Homeopathy	A three-armed trial was conducted which compared: usual care, homeopathic treatment plus usual care and supportive listening plus usual care. The primary outcome was change in irritable bowel symptom severity score

S.No	Study	Design	Intervention	Results
	homeopathic treatment for irritable bowel syndrome. Homeopathy. 2014;103(3):172-7. doi: 10.1016/j.homp.2014.05.001.			between baseline and 26 weeks, calculated using ANCOVA. An interim ANCOVA adjusted for baseline IBS severity, age and employment status found no statistically significant difference between the three arms. However, a post-hoc test comparing homeopathic treatment plus usual care to usual care alone found a statistically significant difference in favour of homeopathic treatment. In addition, 62.5 percent of patients in the homeopathic treatment arm (compared to 25.0 percent of those in the usual care arm), achieved a clinically relevant change in irritable bowel symptom severity score, which indicates a promising effect for homeopathic treatment, though these results should be interpreted with caution due to the low number of participants in the study. Source: http://www.ncbi.nlm.nih.gov/pubmed/24931748
46.	Danno K, Rerolle F, de Sigalony S, Colas A, Terzan L, Bordet MF. China rubra for side-effects of quinine: a prospective, randomised study in pregnant women with malaria in Cotonou, Benin. Homeopathy. 2014;103(3):165-71. doi: 10.1016/j.homp.2014.03.002.	Prospective, comparative, randomised study	Homeopathic medicine	Women were included if they were >3 months pregnant and had a clinical diagnosis of malaria confirmed by a positive thick blood smear. The study population was divided into two groups: (i) patients who presented between the 1st and 15th of each month and who received China rubra 7CH plus quinine (China group); and (ii) patients who presented from the 16th to the end of each month and who received treatment with quinine only (Standard group). Statistical comparison of the two groups was carried out with an alpha risk fixed at 5%. 211 women were recruited: 105 received quinine plus China rubra 7CH (China group) and 106 received quinine only (Standard group). A decrease in proportion of patients presenting with side-effects was observed in the China group from day 0 to day 6 of follow-up (53.9%-23.3%) whereas the proportion of patients with side-effects in the Standard group did not change significantly (85.9% on day 0 vs. 82.5% on day 6). Ninety-six (72.4%) patients in the China group and 103 (97.2%) in the Standard group reported at least one side-effect during follow-up ($p < 0.0001$). The most frequently reported side-effects were tinnitus, dizziness and asthenia. Source: http://www.ncbi.nlm.nih.gov/pubmed/24931747
47.	Pannek J, Pannek-Rademacher S, Cachin-Jus M. Organ-preserving treatment of an epididymal abscess in a patient with spinal cord injury. Spinal Cord. 2014;52 Suppl 1:S7-8. doi: 10.1038/sc.2014.50.	Case report	Combine therapy of Homeopathy and antibiotics.	A conservative approach was induced in epididymal abscess caused by multi resistant bacteria with intravenous antibiotic treatment. As the clinical findings did not ameliorate, adjunctive homeopathic treatment was used. Under combined treatment, laboratory parameters returned to normal, and the epididymal abscess was rapidly shrinking. After 1 week, merely a subcutaneous liquid structure was detected. Fine-needle aspiration revealed sterile purulent liquid, which was confirmed by microbiological testing when the subcutaneous abscess was drained. Postoperative course was uneventful.

S.No	Study	Design	Intervention	Results
				Source: http://www.ncbi.nlm.nih.gov/pubmed/24902646
48.	Viksveen P, Relton C. Depression treated by homeopaths: a study protocol for a pragmatic cohort multiple randomised controlled trial. Homeopathy. 2014;103(2):147-52. doi: 10.1016/j.homp.2014.01.004.	Randomised controlled trial	Homeopathic medicine	<p>A self-completed questionnaire will be used to both screen and collect baseline data from potential trial participants. The primary outcome is PHQ-9. One-hundred-and-sixty-two participants will be randomly selected to the intervention group (Offer of treatment by a homeopath). The results of the Offer and the No Offer groups will be compared at 6 and 12 months using both an intention to treat (ITT) and complier average causal effect (CACE) analysis. Cost-effectiveness analysis will involve calculation of quality adjusted life year (QALY). In order to help interpret the quantitative findings a selection of up to 30 patients in the offer group will be invited to participate in qualitative interviews after the first consultation and after a minimum of 6 months. Interviews will be assessed by two researchers and results will be analysed using thematic analysis. Triangulation will be used to combine results from qualitative and quantitative methodologies at the interpretation stage, to see if results agree, offer complementary information on the same issue or contradict each other.</p> <p>Source: http://www.ncbi.nlm.nih.gov/pubmed/24685421</p>
49.	Syrigou E, Gkiozos I, Dannos I, Grapsa D, Tsimpoukis S, Syrigos K. Giant tuberculin reaction associated with the homeopathic drug tuberculinum: a case report. Clin Infect Dis. 2014;58(7):119-21. doi: 10.1093/cid/ciu023.	Case report	Homeopathic medicine	<p>Giant reactions to the tuberculin skin test are extremely rare and have been previously reported almost exclusively in patients with lepromatous leprosy. A giant tuberculin reaction associated with the homeopathic drug Tuberculinum in a patient with no evidence of active tuberculosis or leprosy is reported.</p> <p>Source: http://cid.oxfordjournals.org/content/58/7/e119.full.pdf+html</p>
50.	Taylor JA, Jacobs J. Homeopathic Ear Drops as an Adjunct in Reducing Antibiotic Usage in Children With Acute Otitis Media. Glob Pediatr Health. 2014;1:2333794X14559395. doi: 10.1177/2333794X14559395	Homeopathy as an adjuvant	Homeopathic Ear Drops	<p>Children 6 months to 11 years old, diagnosed with AOM and managed with a delayed antibiotic approach, were randomized to standard therapy alone or standard therapy plus a homeopathic ear drop preparation. The primary outcome was whether or not the antibiotic prescription given at the index visit was filled during a 12- to 15-day follow-up period. Among 210 enrolled children, follow-up antibiotic data were collected on 206. During the 12- to 15-day follow-up period, fewer parents of children randomized to the homeopathic ear drops group filled the antibiotic prescription compared with those of children receiving standard therapy alone (26.9% and 41.2%, respectively, P = .032).</p> <p>Source:</p>

S.No	Study	Design	Intervention	Results
				http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4804695/pdf/10.1177_2333794X14559395.pdf
51.	Villet S, et al. Open-label observational study of the homeopathic medicine Passiflora Compose for anxiety and sleep disorders. Homeopathy. 2016;105(1):84-91. doi: 10.1016/j.homp.2015.07.002	Open-label, observational study	Homeopathic medicine	Randomly selected general practitioners (GPs) known to prescribe homeopathic medicines recruited consecutive patients (≥ 18 -years) prescribed Passiflora Compose (PC). The following data were recorded at inclusion by the GP: socio-demographic data and anxiety severity (Hamilton anxiety rating scale or HAM-A); and by the patients: level of anxiety (STAI Spielberger self-assessment questionnaire) and SDS (Jenkins sleep scale or JSS). Anxiety and SDS were reassessed after 4 weeks of treatment using the same scales. A total of 639 patients (mean age: 46.3 ± 17.5 years; 78.6% female) were recruited by 98 GPs. Anxiety was present in 85.4% (HAM-A) and 93.3% (Spielberger State) at inclusion (mean scores: 17.8 ± 8.91 and 54.59 ± 11.69 , respectively) and SDS was present in 74.0% (mean score: 15.24 ± 5.28). A total of 401 (62.7%) patients received PC alone and 167 (26.1%) PC + psychotropics. After 4 weeks, mean anxiety scores decreased by more than 7, 12 and 6 points (HAM-A, Spielberger State and Trait respectively), and SDS score by more than 4 points (JSS). Source: http://www.ncbi.nlm.nih.gov/pubmed/26828002
52.	Siqueira CM, Homsani F, da Veiga VF, Lyrio C, Mattos H, Passos SR, Couceiro JN, Quaresma CH. Homeopathic medicines for prevention of influenza and acute respiratory tract infections in children: blind, randomized, placebo-controlled clinical trial. Homeopathy. 2016;105(1):71-7. doi: 10.1016/j.homp.2015.02.006.	Randomized, placebo-controlled clinical trial	Homeopathic Complex	The medications used were mainly selected based on in vitro experiments (InfluBio), and in successful qualitative clinical experiences (Homeopathic Complex). Following informed parental consent, subjects were randomly distributed, in a blind manner, to three experimental groups: Homeopathic Complex, Placebo, and InfluBio. Out of the 600 children recruited, 445 (74.17%) completed the study (149: Homeopathic complex; 151: Placebo; 145: InfluBio). The number of flu and acute respiratory infection symptomatic episodes detected in this clinical trial was low; however, it was different between homeopathic groups and placebo ($p < 0.001$). In the first year post-intervention, 46/151 (30.5%) of children in the placebo group developed 3 or more flu and acute respiratory infection episodes, while there was no episode in the group of 149 children who used Homeopathic Complex, and only 1 episode in the group of 145 (1%) children who received InfluBio. Source: http://www.ncbi.nlm.nih.gov/pubmed/26828000
53.	Zafar S, Najam Y, Arif Z, Hafeez A. A randomized controlled trial comparing Pentazocine and Chamomilla recutita for labor pain relief. Homeopathy.	Double blind randomized controlled trial	Homoeopathic medicine	Ninety-nine normal pregnant women were randomly assigned into three groups. Each group received one of the three trial drugs; Chamomile, Pentazocine or placebo. The efficacy of labor analgesia was assessed by using Visual Analogue Scale (VAS) for pain intensity. Indicators of maternal and child health were recorded as were adverse effects of the drugs. Mean pain scores in the three groups were calculated and compared. The difference in mean VAS scores in Pentazocine and

S.No	Study	Design	Intervention	Results
	2016;105(1):66-70. doi: 10.1016/j.homp.2015.09.003.			Chamomilla recutita group as compared with placebo was not statistically significant. No significant adverse effects were noticed in any group except slight headache and dizziness in three parturients in Pentazocine group. Source: http://www.ncbi.nlm.nih.gov/pubmed/26827999
54.	Brulé D, et al. A Feasibility Pilot Trial of Individualized Homeopathic Treatment of Fatigue in Children Receiving Chemotherapy. Integr Cancer Ther. 2015. pii: 1534735415617023.	Open-label, pilot study	Individualized Homeopathy	Children 2 to 18 years old, diagnosed with cancer, and receiving chemotherapy were eligible. Participants were given individualized homeopathic treatment for a maximum of 14 days. In-home or clinic assessments were conducted up to 3 times weekly. Feasibility was defined as the ability to recruit and administer homeopathy to 10 participants within 1 year. Fatigue was measured using the Symptom Distress Scale daily and the PedsQL Multidimensional Fatigue Module weekly. Between April 2012 and April 2014, 155 potential participants were identified. There were 45 eligible and contacted patients; 36 declined participation, 30 because they were not interested; 9 agreed to participate, but 1 participant withdrew prior to treatment initiation. Median length of homeopathic treatment was 10.5 (range = 6 to 14) days. All parents found homeopathic treatment to be easy or very easy to follow. Source: http://www.ncbi.nlm.nih.gov/pubmed/26574487
55.	Zanasi A, et al. Does additional antimicrobial treatment have a better effect on URTI cough resolution than homeopathic symptomatic therapy alone? A real-life preliminary observational study in a pediatric population. Multidiscip Respir Med. 2015;10(1):25. doi: 10.1186/s40248-015-0022-3.	Observational study	Homeopathic syrup	Eighty-five children were enrolled in an open study: 46 children received homeopathic syrup alone for 10 days and 39 children received homeopathic syrup for 10 days plus oral antibiotic treatment (amoxicillin/ clavulanate, clarithromycin, and erythromycin) for 7 days. To assess cough severity the authors used a subjective verbal category-descriptive (VCD) scale. Cough VCD score was significantly ($P < 0.001$) reduced in both groups starting from the second day of treatment (-0.52 ± 0.66 in the homeopathic syrup group and -0.56 ± 0.55 in children receiving homeopathic syrup plus oral antibiotic treatment). No significant differences in cough severity or resolution were found between the two groups of children in any of the 28 days of the study. After the first week (day 8) cough was completely resolved in more than one-half of patients in both groups. Two children (4.3 %) reported adverse effects in the group treated with the homeopathic syrup alone, versus 9 children (23.1 %) in the group treated with the homeopathic syrup plus antibiotics ($P = 0.020$). Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4527103/pdf/40248_2015_Article_22.pdf
56.	Frass M, et al. Influence of adjunctive classical homeopathy on global	Randomized controlled trial	Homeopathic medicines used as an adjunct to	The main outcome measures were global health status and subjective wellbeing as assessed by the patients. At each of three visits (one baseline, two follow-up visits), patients filled in two different questionnaires. 373

S.No	Study	Design	Intervention	Results
	health status and subjective wellbeing in cancer patients - A pragmatic randomized controlled trial. Complement Ther Med. 2015;23(3):309-17. doi: 10.1016/j.ctim.2015.03.004.		conventional therapy	patients yielded at least one of three measurements. The improvement of global health status between visits 1 and 3 was significantly stronger in the homeopathy group by 7.7 (95% CI 2.3-13.0, $p=0.005$) when compared with the control group. A significant group difference was also observed with respect to subjective wellbeing by 14.7 (95% CI 8.5-21.0, $p<0.001$) in favor of the homeopathic as compared with the control group. Control patients showed a significant improvement only in subjective wellbeing between their first and third visits. Source: http://www.ncbi.nlm.nih.gov/pubmed/26051564
57.	Macías-Cortés Edel C, Llanes-González L, Aguilar-Faisal L, Asbun-Bojalil J. Individualized homeopathic treatment and fluoxetine for moderate to severe depression in peri- and postmenopausal women (HOMDEP-MENOP study): a randomized, double-dummy, double-blind, placebo-controlled trial. PLoS One. 2015;10(3):e0118440. doi: 10.1371/journal.pone.0118440.	Randomized, double-dummy, double-blind, placebo-controlled trial	Individualized homeopathy	One hundred thirty-three peri- and postmenopausal women diagnosed with major depression according to DSM-IV (moderate to severe intensity) were included. The outcomes were: change in the mean total score among groups on the 17-item Hamilton Rating Scale for Depression, Beck Depression Inventory and Greene Scale, after 6 weeks of treatment, response and remission rates, and safety. Efficacy data were analyzed in the intention-to-treat population (ANOVA with Bonferroni post-hoc test). After a 6-week treatment, homeopathic group was more effective than placebo by 5 points in Hamilton Scale. Response rate was 54.5% and remission rate, 15.9%. There was a significant difference among groups in response rate definition only, but not in remission rate. Fluoxetine-placebo difference was 3.2 points. No differences were observed among groups in the Beck Depression Inventory. Homeopathic group was superior to placebo in Greene Climacteric Scale (8.6 points). Fluoxetine was not different from placebo in Greene Climacteric Scale. Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4359147/pdf/pone.0118440.pdf
58.	Koley M, Saha S, Ghosh S. A double-blind randomized placebo-controlled feasibility study evaluating individualized homeopathy in managing pain of knee osteoarthritis. J Evid Based Complementary Altern Med. 2015;20(3):186-91. doi: 10.1177/2156587214568668.	Prospective, parallel-arm, double-blind, randomized, placebo-controlled pilot study	Individualized homeopathy	The study was conducted from January to October 2014 involving 60 patients (homeopathy, $n = 30$; placebo, $n = 30$) who were suffering from acute painful episodes of knee osteoarthritis and visiting the outpatient clinic of Mahesh Bhattacharyya Homeopathic Medical College and Hospital, West Bengal, India. Statistically significant reduction was achieved in 3 visual analogue scales (measuring pain, stiffness, and loss of function) and Osteoarthritis Research Society International scores in both groups over 2 weeks ($P < .05$); however, group differences were not significant ($P > .05$). Source: http://www.ncbi.nlm.nih.gov/pubmed/25636410

S.No	Study	Design	Intervention	Results
59.	Pandey V. Hay fever & homeopathy: a case series evaluation. Homeopathy. 2016;105(2):202-8. doi: 10.1016/j.homp.2016.01.002.	Clinical observational study	Individualised Homeopathy	A clinical observational study of eight patients in the treatment of hay fever symptoms was performed over a two-year period (2012 and 2013) using Measure Yourself Medical Outcome Profile (MYMOP) self-evaluation questionnaires at baseline and again after two weeks and four weeks of homeopathic treatment. The individualized prescription - either a single remedy or multiple remedies - was based on the totality of each patient's symptoms. The average Measure Yourself Medical Outcome Profile (MYMOP) scores for the eyes, nose, activity and wellbeing had improved significantly after two and four weeks of homeopathic treatment. The overall average MYMOP profile score at baseline was 3.83 (standard deviation, SD, 0.78). After 14 and 28 days of treatment the average score had fallen to 1.14 (SD, 0.36; P<0.001) and 1.06 (SD, 0.25; P<0.001) respectively. Source: http://www.ncbi.nlm.nih.gov/pubmed/27211328
60.	Fibert P, Relton C, Heirs M, Bowden D. A comparative consecutive case series of 20 children with a diagnosis of ADHD receiving homeopathic treatment, compared with 10 children receiving usual care. Homeopathy. 2016;105(2):194-201. doi: 10.1016/j.homp.2015.09.008.	Comparative consecutive case series	Individualized homeopathy	The study explored optimum treatment protocols; the effectiveness, deliverability and acceptability of treatment; and the feasibility of outcome measurement and recruitment. Parents completed Conners' Parent Rating Scale, Revised Long Version (CPRS-R:L) every 4 months, from which DSMIV total scores were extracted; and Measure Your Own Medical Outcome Profile (MYMOP) every consultation. An interaction between time (baseline/4 months) and group (treatment/non-treatment) was found .756 F (1,28)=9.06, p=0.005. The intervention was associated with statistically significant improvements in treated children over the year: CPRS-R: L (t (18)=4.529, p≤0.000); MYMOP (t (18)=6.938, p≤0.000). Mean DSMIV total t scores decreased at each time point: baseline: 85 (SD 5.1); 4 months 76.2 (SD 10.9); and 12 months 71.5 (SD 12.77). Source: http://www.ncbi.nlm.nih.gov/pubmed/27211327
61.	Beghi GM, Morselli-Labate AM. Does homeopathic medicine have a preventive effect on respiratory tract infections? A real life observational study. Multidiscip Respir Med. 2016;11:12. doi: 10.1186/s40248-016-0049-0.	Controlled observational study	Homeopathic medicine	Out of 459 patients, 248 were treated with homeopathic medicine (specific extract of duck liver and heart) and 211 were not treated. All patients were followed-up for at least 1 year, and up to a maximum of 10 years. A significant reduction in the frequency of onset of RTIs was found in both the homeopathic medicine and untreated groups. The reduction in the mean number of RTI episodes during the period of observation vs. the year before inclusion in the study was significantly greater in the homeopathic-treated group than in untreated patients (-4.76 ± 1.45 vs. -3.36 ± 1.30; p=0.001). The beneficial effect of the homeopathic medicine was not significantly related to gender, age, smoking habits or concomitant respiratory diseases when compared to the effect observed in untreated patients. Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4800767/pdf/40248_2016_Article_49.pdf

S.No	Study	Design	Intervention	Results
62.	Bagot JL. Using hetero-isotherapies in cancer supportive care: the fruit of fifteen years of experience. Homeopathy. 2016;105(1):119-25. doi: 10.1016/j.homp.2015.08.001	Observational study	Hetero-isotherapy	Based on experiments conducted for over 50 years by many authors, a protocol of hetero-isotherapy chemotherapy starting the day after each cytotoxic infusion was offered to the patients. It involves taking a daily dose of a dilution of the chemotherapy used, using the increased dilution technique from 5c to 15c. The author observed a significant decrease in side effects, allergic reactions and late sequelae in the more than 6000 hetero-isotherapeutic treatments given to some 4000 patients. The better tolerance to chemotherapy and the improvement in quality of life led to an increase in treatment adherence. No interference with chemotherapy was observed. When it was necessary to prescribe another homeopathic medicine, combination with hetero-isotherapy generally improved its effectiveness. Source: http://www.ncbi.nlm.nih.gov/pubmed/26828007
63.	Morris M, Pellow J, Solomon EM, Tsele-Tebakang T. Physiotherapy and a Homeopathic Complex for Chronic Low-back Pain Due to Osteoarthritis: A Randomized, Controlled Pilot Study. Altern Ther Health Med. 2016;22(1):48-56.	Randomized, double-blind, placebo-controlled pilot study	Homeopathic Complex	The participants were 30 males and females, aged 45-75 y, who were receiving physiotherapy treatment for OA of the lumbar spine from a therapist in private practice. The intervention and control groups both received standard physiotherapy treatment-massage, thermal therapy, and joint mobilization-every 2 wk. In addition, the treatment group received a homeopathic complex-6cH each of Arnica montana, Bryonia alba, Causticum, Kalmia latifolia, Rhus toxicodendron, and Calcarea fluorica. The control group received a placebo. The primary measure was a visual analogue scale (VAS) for pain. Secondary outcome measures included the Oswestry Disability Index (ODI), an evaluation of each patient's range of motion (ROM) of the lumbar spine, and a determination of each patient's need for pain medication. Inter-group analysis revealed that the treatment group significantly outperformed the control group with regard to pain, daily functioning, and ROM. No difference existed between the groups, however, in the need for conventional pain medication. The results suggest the homeopathic complex, together with physiotherapy, can significantly improve symptoms associated with CLBP due to OA. Source: http://www.ncbi.nlm.nih.gov/pubmed/26773321
64.	Fernández-Llanio Comella N, Fernández Matilla M, Castellano Cuesta JA. Have complementary therapies demonstrated effectiveness in rheumatoid arthritis? Reumatol Clin. 2016;12(3):151-7. doi: 10.1016/j.reuma.2015.10.011.	Review paper	Complementary therapies	In recent decades the treatment of rheumatoid arthritis (RA) has improved thanks to the use of highly effective drugs. However, patients usually require long term therapy, which is not free of side effects. Therefore RA patients often demand complementary medicine, they seek additional sources of relief and/or less side effects. In fact 30-60% of rheumatic patients use some form of complementary medicine. Therefore, from conventional medicine, if we want to optimally treat our patients facilitating communication with them we must know the most commonly used complementary medicines. The aim of this review is to assess, based on published scientific research, what complementary therapies commonly used by patients with RA are effective and safe. Source:

S.No	Study	Design	Intervention	Results
				http://www.sciencedirect.com/science/article/pii/S169258X15001862
65.	Coelho CDP, et al. Pilot study: evaluation of homeopathic treatment of Escherichia coli infected swine with identification of virulence factors involved. Int J High Dilution Res 2014; 13(49):197-206.	Randomised Control Trial: Pilot study	Homeopathic medicine	Escherichia coli (E. coli) was isolated from 4 piglets with diarrhoea, their clinical signs were used to select the adequate homeopathic medicine China officinalis (Chin). New born piglets were divided in 4 groups (n=11 or 12): control group treated with the routinely used antimicrobial agent (ceftiofur 4 mg 1 ml/piglet for 3 days); one group with homeopathic medicine Chin 30 cH; one group treated with biotherapy prepared from locally isolated E. coli; and one group was treated with association of Chin and biotherapy. All isolated samples of E. coli were subjected to polymerase chain reaction (PCR) to identify virulence factors in each group. There was no difference in the number of animals with diarrhoea between groups treated with homeopathic medicine and control; weight gain was greater in groups treated with homeopathic medicine alone and associated with biotherapy compared to control (p<0.05). Cost of homeopathic treatment was lower compared to ceftiofur. Only one E. coli sample used to prepare biotherapy medicine tested positive for virulence factors (F41); 3 samples from the Chin treated group tested positive for Stb enterotoxins; 1 sample from the homeopathic medicine plus biotherapy treated group and 1 sample from the biotherapy treated group tested positive for F41; 2 samples from the control group tested positive for F41. Source: http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/715/739
66.	Oberai P, Gopinadhan S, Sharma A, Nayak C, Gautam G. Homoeopathic management of Schizophrenia: A prospective, non-comparative, open-label observational study. Indian J Res Homoeopathy 2016;10(2):108-118. Doi: 10.4103/0974-7168.183877.	Observational study	Homeopathic medicines	Patients between 20 and 60 years of age, presenting with symptoms of Schizophrenia were screened. The patients who were on antipsychotic drugs were allowed to continue the same along with homoeopathic medicine, the dose of antipsychotics was monitored by the Psychiatrist. The symptoms of each patient were repertorized, and medicine was initially prescribed in 30C potency after consulting Materia Medica. Patients were followed up for 12 months. Outcome of treatment was assessed with Brief Psychiatric Rating Scales (BPRS). Out of 188 enrolled patients, 17 cases did not complete the baseline information. Total 171 patients were analysed as per modified Intention to Treat Principle. Significant difference (P = 0.0001, P < 0.05) in the mean scores of BPRS, using paired t test was observed at end of the study. Sulphur, Lycopodium, Natrum muriaticum, Pulsatilla and Phosphorus were found to be the most useful medicines in treating schizophrenic patients. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=108;epage=118;aulast=Oberai

S.No	Study	Design	Intervention	Results
67.	Sumithran AP. A case of multiple urinary calculi. Indian J Res Homoeopathy 2016;10(2):142-9. doi: 10.4103/0974-7168.176164.	Case report	Homeopathic medicine	A patient with urinary calculi of sizes 16 mm in the right renal pelvis and 9 mm in the right mid-ureter, presenting with complaints of pain in right iliac region extending to genitals and legs with dribbling urine and painful micturition. Patient had not undergone treatment before. Based on the presenting symptoms Nux vomica30C was prescribed, which proved to be effective in the dissolution and expulsion of both the stones. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=142;epage=149;aulast=Sumithran
68.	Oberai P, et al. A multicentric randomized clinical trial of homoeopathic medicines in fifty millesimal potencies vis-à-vis centesimal potencies on symptomatic uterine fibroids. Indian J Res Homoeopathy 2016;10:24-35. doi: 10.4103/0974-7168.179148.	Multicentric randomized clinical trial	Homeopathic medicines	The primary outcome was changes in symptoms of uterine fibroid on a visual analogue scale (VAS) of 0–10 and findings through ultrasonography (USG) between LM and CH potencies. The secondary outcome was to assess the changes in uterine fibroid symptom quality of life questionnaire (UFSQOL). Data analysis was done as per intention to treat (ITT) analysis. Of 216 patients enrolled in the study (LM: 108 and CH: 108), 209 patients were analysed under modified ITT (LM: 106, CH: 103). Both LM and CH potencies were equally effective in reducing the symptoms (percentage change) due to uterine fibroid on VAS scale after 1 year of treatment ($P > 0.05$). The health-related quality of life (HRQOL) and subdomains of UFSQOL also showed equal effectiveness in both the groups ($P = 0.05$). However, no difference was observed in all the USG findings except for uterine volume ($P = 0.03$). There was overall difference before and after homoeopathic treatment irrespective of assigned groups, i.e., LM or CH ($P < 0.05$) in all the above parameters. The medicines frequently prescribed were: Pulsatilla, Sulphur, Lycopodium, Sepia, Phosphorus, Calcarea carbonica, and Natrum muriaticum. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=24;epage=35;aulast=Oberai
69.	Parveen S. Homoeopathic treatment in a case of co-morbid atopic dermatitis and depressive disorder. Indian J Res Homoeopathy 2016;10:75-82. doi: 10.4103/0974-7168.179145.	Case report	Homeopathic medicine	A 38-year-old male presented with a 6-month history of eczematous skin lesions with associated symptoms of depression in the background of chronic ongoing stress. A diagnosis of AD with comorbid depression was made. He initially did not show stable improvement on homoeopathic medicine selected on the basis of totality of symptoms and miasmatic background. On changing the medicine giving more priority to psychological symptoms, he gradually showed stable improvement on both the domain of symptoms and reached remission by 3 months. Remission maintained without any recurrence over the next 3½ years. Hence, the main lesson from this case is the demonstration of importance of mental symptoms over other physical symptoms in homoeopathic treatment. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=75;epage=82;aulast=Parveen

S.No	Study	Design	Intervention	Results
70.	Wadhwani GG. A case of deep vein thrombosis with post thrombotic syndrome cured by homoeopathic therapy. Indian J Res Homoeopathy 2015;9:267-73. doi: 10.4103/0974-7168.172867.	Case report	Homeopathic medicine	A 46-year-old woman consulted for right-sided deep vein thrombosis in external iliac, common femoral, superficial femoral and popliteal veins with extension along with post thrombotic syndrome. After homoeopathic consultation, she was prescribed Argentum nitricum in ascending LM potencies. Symptomatic relief was reported within 2 weeks of treatment, and gradually the quality of life improved after simultaneous reduction in pain due to other complaints of sciatica and osteoarthritis. Venous Doppler studies repeated a year later showed complete resolution of the medical condition with homoeopathic drug therapy alone. The physical examination also revealed a reduction in limb circumference. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=4;spage=267;epage=273;aulast=Wadhwani
71.	Chakraborty D, Das P, Dinda A K, Sengupta U, Chakraborty T, Sengupta J. A comparative study of homoeopathic medicine - Sulphur with the Multidrug therapy in the treatment of paucibacillary leprosy. Indian J Res Homoeopathy 2015;9:158-66. doi: 10.4103/0974-7168.166375.	Comparative study	Homeopathic medicine	Out of total 90 patients enlisted, 60 confirmed Borderline Tuberculoid (BT) leprosy patients of the age 14 years to less than 60 years were registered under this trial. All the patients were allotted a precoded number, randomly and equally divided in two groups. One group was treated with Sulphur in 200 potency in liquid orally once in week for two years and the other group received Paucibacillary (PB) regimen as recommended by WHO. At the end of two years findings were corroborated. The study showed that MDT therapy (PB regimen) and homoeopathic medicine were found equally effective as histopathology of skin showed no granulomatous lesion. The most significant clinical sign observed in all cases treated with Sulphur was reappearance of normal skin colour and regain of loss of sensation of the skin lesion. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=158;epage=166;aulast=Chakraborty
72.	Chakraborty P S, et al. A multicentric observational study to evaluate the role of homoeopathic therapy in vitiligo. Indian J Res Homoeopathy 2015;9:167-75. doi: 10.4103/0974-7168.166378.	multicentric observational study	Homeopathic medicines	Out of 432 patients, 169 completed 2 years of follow-up and were considered for analysis. Homoeopathic medicines, based on the totality of symptoms and repertorization were prescribed. The analysis of the cases was based on the Vitiligo Symptom Score (VSS) and photographs of the patients. The changes in the mean VSS at intervals of every 6 months was found to be statistically significant. Homoeopathic treatment was found to be useful in relieving vitiligo in varying degrees in 126 patients, out of which 4 (2.94%) cases showed marked improvement, 15 (11.03%) cases showed moderate improvement, 77 (56.62%) cases showed mild improvement, and 30 patients although improved, fell in the category of not significant improvement group (below 25% improvement). Ten homoeopathic medicines were found useful in the study of which Sulphur (n = 27), Arsenicum album (n = 19), Phosphorus (n = 19), and Lycopodium clavatum (n = 10) were the most commonly indicated and useful medicines.

S.No	Study	Design	Intervention	Results
				Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=167;epage=175;aulast=Chakraborty
73.	Nisanth Nambisan K M, Nambisan SN. Homoeopathic treatment of Heloma durum-Case Report. Indian J Res Homoeopathy 2015;9:194-8. doi: 10.4103/0974-7168.166391.	Case report	Homeopathic medicine	Two cases of plantar heloma durums illustrated here were treated with same medicines with similar genetic make-up, that is, father and daughter. Father received the medicine after case taking whereas 15 years later, the daughter received homoeopathic treatment given to the father. Here, the same treatment cured both father and daughter, which indicates that the same homoeopathic medicine is effective, in similar genetic make-up for a given disease (genetic similitum). Several studies show the potential of homoeopathic medicine to regulate gene-expression in animal and plant models. It seems that the present treatment is also acting in the same fashion by regulating the gene responsible for predisposing corn formation. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=194;epage=198;aulast=Nisanth
74.	Mahesh S, Mallappa M, Vithoulkas G. Gangrene: Five case studies of gangrene, preventing amputation through Homoeopathic therapy. Indian J Res Homoeopathy 2015;9:114-22. doi: 10.4103/0974-7168.159544.	Case series	Homeopathic medicine	Gangrene and its associated amputations are clinically challenging, but Homoeopathy offers therapy options. In this case series, 5 cases are presented, in which the homoeopathic treatment prevented amputation of a body part. Homoeopathy stimulates the body's ability to heal through its immune mechanisms; consequently, it achieves wound healing and establishes circulation to the gangrenous part. Instead of focusing on the local phenomena of gangrene pathology, treatment focuses on the general indications of the immune system, stressing the important role of the immune system as a whole. The aim was to show, through case reports, that homoeopathic therapy can treat gangrene without amputating the gangrenous part, and hence has a strong substitution for consideration in treating gangrene. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=2;spage=114;epage=122;aulast=Mahesh
75.	Shah R. Clinical trial for evaluation of a Human Immunodeficiency Virus nosode in the treatment for Human Immunodeficiency Virus-Infected individuals. Indian J Res Homoeopathy 2015;9:25-33. doi: 10.4103/0974-7168.154345.	Clinical trial	Homeopathic medicine	Thirty-seven HIV-infected persons were registered for the trial, and ten participants were dropped out from the study, so the effect of HIV nosode 30C and 50C, was concluded on 27 participants under the trial. Out of 27 participants, 7 (25.93%) showed a sustained reduction in the viral load from 12 to 24 weeks. Similarly 9 participants (33.33%) showed an increase in the CD4+ count by 20% altogether in 12th and 24th week. Significant weight gain was observed at week 12 (P = 0.0206). 63% and 55% showed an overall increase in either appetite or weight. The viral load increased from baseline to 24 week through 12 week in which the increase was not statistically significant (P > 0.05). 52% (14 of 27) participants have shown either stability or improvement in CD4% at the end of 24 weeks, of which 37% participants have shown improvement (1.54-

S.No	Study	Design	Intervention	Results
				48.35%) in CD4+ count and 15% had stable CD4+ percentage count until week 24 week. 16 out of 27 participants had a decrease (1.8-46.43%) in CD8 count. None of the adverse events led to discontinuation of study. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=25;epage=33;aulast=Shah
76.	Manchanda RK, et al. Evaluation of homoeopathic medicines as add-on to institutional management protocol in Acute Encephalitis Syndrome: An exploratory observational comparative study. Indian J Res Homoeopathy 2015;9:34-41. doi: 10.4103/0974-7168.154347.	Exploratory observational study	Homeopathic medicine	Acute Encephalitis Syndrome (AES) treated according to Institutional Management Protocol (IMP) has considerable mortality and morbidity. The study was undertaken to evaluate the effect of homoeopathic treatment (H) as an add-on to IMP (IMP + H) for children affected with AES. Children whose guardians gave consent were treated with IMP + H and rest remained on IMP only. Glasgow outcome scale was used at discharge for the final outcome. 151 children [121 in Institutional Management Protocol (IMP) + Homeopathy (H) and 30 in only IMP] diagnosed with AES (aged 6 months to 18 years) were enrolled. The results showed 12 (9.9%) death out of 121 children administered IMP + H whereas it was 13 (43%) out of 30 children on IMP alone. Proportional odds analysis with covariate adjustment showed added benefit of Homoeopathy in children with AES as compared to IMP alone (adjusted odds ratio, 0.17, 95% confidence interval 0.06-0.45, P = 0.0001). The most useful medicines are Belladonna, Stramonium, Arsenicum album, Helleborus, Bryonia alba, Sulphur, and Cuprum metallicum. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=34;epage=41;aulast=Manchanda
77.	Gupta G, Gupta N, Pandey D. An evidence-based case of acoustic/ vestibular schwannoma. Indian J Res Homoeopathy 2015;9:49-54. doi: 10.4103/0974-7168.154349.	Case report	Homeopathic medicine	The case illustrated here is a rare one of acoustic/ vestibular schwannoma a surgical conditions, treated with Lycopodium, which produced improvement on both subjective and objective parameters. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=49;epage=54;aulast=Gupta
78.	Miglani A, Manchanda RK. Azadirachta indica in treatment of acne vulgaris-an open-label observational study. Indian J Res Homoeopathy 2014;8:218-23. doi: 10.4103/0974-7168.147321.	prospective, non-randomized, open-label interventional study	Homeopathic medicine	Azadirachta indica was prescribed in raising potencies from 6C up to 1M. The observational period was of 6 months. Outcome measures were Lesion counts, Global Acne Grading System (GAGS) score and Acne-specific Quality of Life questionnaire (Acne-QoL) score. Out of 31 enrolled participants, 29 completed the 6-months follow-up. Two subjects did not report after 2-3 months but were included under Intention-To-Treat (ITT). Though there were overall statistically significant results in respect of Lesion counts, GAGS and Acne QoL score (P < 0.001) but no effect was seen in inflammatory lesions. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=2;spage=218;epage=23;aulast=Miglani

S.No	Study	Design	Intervention	Results
				7168;year=2014;volume=8;issue=4;spage=218;epage=223;aulast=Miglani
79.	Nayak D, et al. Managing acute alcohol withdrawal with Homoeopathy: A prospective, observational, multicentre exploratory study. Indian J Res Homoeopathy 2014;8:224-30. doi: 10.4103/0974-7168.147322.	prospective, observational, exploratory, multicentre trial	Individualised Homoeopathy	Individualised Homoeopathy was given to 112 patients reporting with AAW. The clinical assessment was done for 05 days using Clinical Institute Withdrawal Assessment Scale of Alcohol-Revised (CIWA-Ar). Post-withdrawal phase, quality of life of patients was assessed at end of 01st, 03rd and 06th month using World Health Organisation quality of life (WHOQOL) - BREF. There was a significant decrease in CIWA-Ar mean scores and increase in quality of life score ($P < 0.001$). The most common remedies used were Arsenicum album, Lycopodium clavatum, Belladonna, Nux vomica and Pulsatilla. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=4;spage=224;epage=230;aulast=Nayak
80.	Ghosh MS, Shil RC, Chakma A. A case of gallstone with prostatomegaly. Indian J Res Homoeopathy 2014;8:231-5. doi: 10.4103/0974-7168.147324.	Case report	Homeopathic medicine	Gallstone formation is the most common disorder of the biliary tree. Surgical intervention is the choice of treatment in most of the cases. In many occasions, this surgical intervention can be avoided through proper homoeopathic treatment. This case of gallstone with prostatomegaly treated with homoeopathic medicines, reported here is such an example. After going through detailed case-taking and repertorization, initially Sulphur and later on Medorrhinum was prescribed based on symptom totality. The case has been cured in respect of both symptomatologically and pathologically as evident by follow up investigations. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=4;spage=231;epage=235;aulast=Ghosh
81.	Barvalia PM, Oza PM, Daftary AH, Patil VS, Agarwal VS, Mehta AR. Effectiveness of homoeopathic therapeutics in the management of childhood autism disorder. Indian J Res Homoeopathy 2014;8:147-59. doi: 10.4103/0974-7168.141738.	Nonrandomized, self-controlled, pre and post-intervention study	Homeopathic medicine	The study demonstrated significant improvement of autistic features with mean change in ATEC score (ATEC 1 -pre-treatment with ATEC 5 -post-treatment) was 15.12 and ATEC mean percent change was 19.03. Statistically significant changes in ATEC scores were observed in all the quarters analyzed through repeated measures ANOVA, with F-value 135.952, $P = 0.0001$. An impact was observed on all core autistic features, which included communication, 12.61%, socialization, 17%, sensory awareness, 18.82%, and health and behavior, 29% ($P = 0.0001$). Significant improvement was observed in behavior by Autistic Hyperactivity Scale, AHS 1 36 to AHS 5 14.30 with F-value 210.599 ($P = 0.0001$). Outcome assessment was carried out using MANOVA, which showed statistically significant changes in post-treatment scores, $P < 0.005$. Total 88.34% cases showed improvement, 8.33% showed status quo, and 3.33% cases worsened. Nine out of 60 cases showed a reversal of CARS putting them into non-autistic zone, $P = 0.0001$. A sharp decrease (34%) in ATEC scores, in the first quarter implied positive effect of homoeopathic medicines,

S.No	Study	Design	Intervention	Results
				prescribed, as per the homoeopathic principles. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=3;spage=147;epage=159;aulast=Barvalia
82.	Janardanan Nair K R, et al. Homoeopathic Genus Epidemicus 'Bryonia alba' as a prophylactic during an outbreak of Chikungunya in India: A cluster - randomised, double - blind, placebo- controlled trial. Indian J Res Homoeopathy 2014;8:160-5. doi: 10.4103/0974-7168.141739.	Cluster-randomised, double-blind, placebo-controlled trial	Homeopathic medicine	Bryonia alba 30C/placebo was randomly administered to 167 clusters (Bryonia alba 30C = 84 clusters; placebo = 83 clusters) out of which data of 158 clusters was analyzed (Bryonia alba 30C = 82 clusters; placebo = 76 clusters). Healthy participants (absence of fever and arthralgia) were eligible for the study (Bryonia alba 30 C n = 19750; placebo n = 18479). Weekly follow-up was done for 35 days. Infection rate in the study groups was analysed and compared by use of cluster analysis. The findings showed that 2525 out of 19750 persons of Bryonia alba 30 C group suffered from chikungunya, compared to 2919 out of 18479 in placebo group. Cluster analysis showed significant difference between the two groups [rate ratio = 0.76 (95% CI 0.14 - 5.57), P value = 0.03]. The result reflects a 19.76% relative risk reduction by Bryonia alba 30C as compared to placebo. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=3;spage=160;epage=165;aulast=Janardanan
83.	Dhawale KM, Tamboli MP, Katawala MY, Tambitkar NN, Tamboli PP. Use of homoeopathic remedies in the management of learning disabilities. Indian J Res Homoeopathy 2014;8:87-94. doi: 10.4103/0974-7168.135641.	Randomised double blind case control study	Homeopathic medicines	67 children between ages 8-12 years fulfilling the criteria of LD (ICD-10) for dyslexia and dysgraphia were studied for a minimal observation period of one year. All received remedial education as it is the standard mode of management. 32 children constituted Group I and were administered the indicated homoeopathic medicine in the 200 th potency in infrequent repetition while 35 children from Group II were given placebo. The children under homoeopathic treatment with remedial education showed an early response to remedial inputs and a statistically significant change in the indicators of dyslexia and dysgraphia. There was also a significant change in the co-morbid behavioural condition notably Attention Deficit Hyperactivity Disorder (ADHD). The study not only helped verify the characteristic symptoms of the remedies from Materia Medica useful in LD but also was able to report clinical symptoms which have not been reported in source books. 53.12% of children needed Calcarea salts. The other significant remedy indicated in 9.3% children was Medorrhinum, Argentum nitricum, Calc-flour, and Natrum salts were indicated in 6.25% children. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=2;spage=87;epage=94;aulast=Dhawale
84.	Chakraborty D, Dinda AK, Sengupta U, Das P, Chakraborty T, Sengupta J. Therapeutic effect of Mercurius solubilis on	Case report	Homeopathic medicine	T A Borderline Lepromatous (BL) leprosy case was treated with Mercurius solubilis, a homoeopathic medicine for two years. The clinical, immunological and histological assessment of the patient before and after treatment was recorded. The patient showed appreciable improvement in clinical signs and symptoms. Lesions on the skin almost disappeared; no swelling of hand and feet

S.No	Study	Design	Intervention	Results
	immune status of a borderline leprosy case. Indian J Res Homoeopathy 2014;8:100-6. doi: 10.4103/0974-7168.135643.			was noted along with disappearance of infiltration on eye brows. Nodular lesions on both the ear lobes diminished remarkably. Regain of sensation to touch, pain and pressure were noted and their test responses were normal. Slit skin smears were negative from all sites with 0 Bacteriological Index [BI] which was positive for acid fast bacilli [AFB] with an average of 4+ BI before treatment. Histologic study revealed absence of granuloma in dermis except the presence of occasional clusters of lymphocytes. Lepromin reaction which was negative before treatment was positive with 14 mm after 2 years of treatment. Estimation of different cytokines after completion of treatment showed appreciable changes with remarkable reduction in the levels of proinflammatory cytokines (IFN and TNF). Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=2;spage=100;epage=106;aulast=Chakraborty
85.	Kundu TK, Shaikh AF, Jacob SM. To evaluate the role of homoeopathic medicines as add-on therapy in patients with rheumatoid arthritis on NSAIDs: A retrospective study. Indian J Res Homoeopathy 2014;8:24-30. doi: 10.4103/0974-7168.129674.	Retrospective analysis	Homeopathic medicines	Ten cases testing sero-positive for RA with at least four clinical signs were evaluated from single homoeopathic Out-Patient Department (OPD) from February 2009 and February 2011. Cases were analysed to find out the role of homoeopathic constitutional similimum in people with RA. Changes in DAS, ESR, pain/morning stiffness and QoL were considered as outcome measure. Homoeopathic constitutional medicines were found to reduce the intensity of pain in patients with RA ($t = 4.3733$, $P < 0.01$) along with reduction in consumption of NSAIDs ($t = 2.4$, $P < 0.05$). The DAS reduced in all 10 patients ($t = 2.67$, $P < 0.01$). The QoL was also found to improve under homoeopathic medication ($t = 4.044$, $P < 0.01$) and no further deterioration joint/disability was observed in any of the 10 patients. Mean ESR improved to 19.5 from 38.1 ($t = 2.235$, $P < 0.05$). Out of 10, 3 (30%) patients were found to be sero-negative after homoeopathic constitutional similimum. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=1;spage=24;epage=30;aulast=Kundu
86.	Pannek J, Pannek-Rademacher S, Jus MC, Jus MS. Usefulness of classical homoeopathy for the prevention of urinary tract infections in patients with neurogenic bladder dysfunction: A case series. Indian J Res Homoeopathy 2014;8:31-6. doi:	Case series	Homoeopathic medicine as add on to standard urologic care	After exclusion of morphological abnormalities and initiation of a standard regime for prophylaxis, all patients with a neurogenic lower urinary tract dysfunction due to SCI, with more than three symptomatic UTI/year, were offered additional homoeopathic care. Symptoms were fever, incontinence, increased spasticity, decreased bladder capacity or pain/decreased general health combined with significant bacteriuria. Eight patients were followed up for a median period of 15 months. Five patients remained free of UTI, whereas UTI frequency was reduced in three patients. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=1;spage=31;epage=36;aulast=Pannek

S.No	Study	Design	Intervention	Results
	10.4103/0974-7168.129675.			
87.	Rath P, Kaur H. A case of haemorrhoids in a 12-year-old boy. Indian J Res Homoeopathy 2014;8:37-41. DOI: 10.4103/0974-7168.129677.	Case report	Homoeopathic medicine	The case reported here is that of an internal haemorrhoids in a 12-year-old child, who was treated successfully with homoeopathic medicine. The patient has been observed for more than 2 years without recurrence. Photographs were taken before and after treatment to record changes in the condition. Non-recurrence of complaint in the past two and half years suggests that a 'near permanent' cure is achievable through individualised homoeopathic treatment. Source: http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=1;spage=37;epage=41;aulast=Rath
88.	Becker-Witt et al. Effectiveness and costs of Homeopathy compared to conventional medicine – a prospective multicenter cohort study. London: The Royal Homeopathic Hospital, 2003.	Prospective, comparative cohort study	Homeopathy and patients could opt for concomitant conventional therapy	Patients seeking homeopathic treatment had a better outcome overall compared with patients on conventional treatment.
89.	Chauffer in 2000 (104)	Compilation of nationally available data (secondary sources)	Homeopathy	Homeopathic medication prices per unit lower than allopathic ones (number of prescriptions unknown, though). Fewer reimbursements for homeopathic doctors, only 1 % of reimbursement of French national health insurance system
90.	Frei H, Thurneysen A. Homeopathy in acute otitis media in children: treatment effect or spontaneous resolution? Br Homeopath J 2001 Oct ;90 (4):180 -2 90(4):180-182.	Prospective, uncontrolled interventional study	Homeopathy	72% resolved within 12 hours, 28 % were given antibiotics. Conventional treatment was 14 % more expensive (109 SFR vs. 94,6 SFR)
91.	Frenkel M, Hermoni D. Effects of homeopathic intervention on medication consumption in atopic and allergic disorders. Altern Ther Health Med 2002 Jan - Feb ;8 (1):76 -9 8(1):76-79.	Prospective, uncontrolled interventional study	Homeopathy primarily in addition to conventional treatment	Before intervention on average 3.1 different conventional drugs/patient after 1.6 (p=0.001). Before intervention 31 used conventional drugs (costs on average \$40) after intervention 35 (costs on average \$16).
92.	Güthlin C, Walach H. Prospektive Dokumentationsstudie in der nie-dergelassenen Praxis- ein Erprobungsverfahren zur Akupunktur und Homöopathie. EHK	Prospective, uncontrolled observational study	Homeopathy	Significant changes in quality of life, less sick leave.

S.No	Study	Design	Intervention	Results
	2001;186-194.			
93.	Van Haselen RA, Graves N, Dahiha S. The costs of treating rheumatoid arthritis patients with complementary medicine: exploring the issue. Complement Ther Med 1999; 7(4):217-221.	Retrospective study	Homeopathy (n=89) Acupuncture (n=4)	32% of patients reduced conventional drugs. Total costs to treat 89 patients were 7129 GBP (including medication, staff time and diagnostic procedures - 29 % of the costs for consultation, 22% for conventional drugs)
94.	Jain A. Does homeopathy reduce the cost of conventional drug pre-scribing? A study of comparative prescribing costs in general practice. Homeopathy 2003 Apr;92(2):71-6	Prospective uncontrolled observational study	Homeopathy	Savings by homeopathic treatment calculated by deducting costs for homeopathic medication from conventional medication (hypothetical) for same diagnosis and same duration amounted to 60.40 Pound Sterling.
95.	Kooreman et al. 2012 (111) All conditions	Retrospective Health Insurance Dataset comparison	Alternative medicine including homeopathy	Reduction of 7 % of costs for GP-CAM due to lower hospitalisations and lower pharmaceutical costs; lower mortality rate.
96.	Rosi E, Crudeli L, Endrizzi C, Garibaldi D. Cost-benefit evaluation of homeopathic vs conventional therapy in respiratory diseases. Homeopathy. 2009;98:2-10.	Retrospective observational study	Homeopathy	Reducing conventional remedies use, 42,4 % costs saved even 71,1 % in chronic asthma.
97.	Schafer T, Riehle A, Wichmann HE, Ring J. Alternative medicine in allergies - prevalence, patterns of use, and costs. Allergy 2002; 57(8):694-700.	Population-based nested case control study	Alternative Medicine	26. % used CAM, patients were significantly younger and better educated. CAM mostly provided by MDs, median costs for single and entire treatment of 4 and 205 euro. CAM User scored efficacy of conventional therapy lower than non user (p<0,001)
98.	Sevar R. Audit of outcome in 455 consecutive patients treated with homeopathic medicines. Homeopathy 2005;94:215-221.	Prospective cohort study.	Homeopathy	Conventional Drug cost saving of £ 39,90/patient/year.
99.	Taïeb C, Myon E. Chronic allergic rhinitis, usefulness of the homeopathic treatment. International Society of Pharmacoeconomics & Outcomes Research. 8th Annual International Meeting May 18-21,2003.	Prospective, comparative cohort study	Homeopathy (HM)	At 3 months SF-12 score on physical dimension HM 51,8; CM 47,9 (p<0.05). Lowering of cost of care for patients from 45,74 € for CM to 27 € for HM. Lowering of cost of care for the social security system with 50 % for patients using HM.
100.	Trichard M, Chaufferin G. Cost-effectiveness study of treatment of anxiety	Prospective, comparative cohort study	Homeopathy	The homeopathic drug strategy produced equivalent results but less overall costs reimbursed by the national health system

S.No	Study	Design	Intervention	Results
	disorders by homeopathic general practitioners. Improving the success of homeopathy, 2003.			
101.	Trichard M, Chaufferin G. Effectiveness, Quality of Life, and Cost of Caring for Children in France with Recurrent Acute Rhinopharyngitis Managed by Homeopathic or Non-Homeopathic General Practitioners. Dis Manage Health Outcomes 2004;12(6):419-427.	Prospective, comparative cohort study	Homeopathy	Comparable overall cost between both treatment strategies but less sick leave in the homeopathic group
102.	Trichard M, Lamure E, Chaufferin G. Study of the practice of homeopathic general practitioners in France. Homeopathy ed. 2003, Vol92/3;135-139.	Cross-sectional descriptive survey	Homeopathy	Only costs for medication included – average overall cost 6.78 € of which 3.78 € were reimbursed
103.	Van Wassenhoven M, Ives G. An observational study of patients receiving homeopathic treatment. Homeopathy 2004 January,93:3-11.	Observational unselected study and comparison with nationally available data (secondary sources)	Homeopathy	Following homeopathic treatment there were significant reductions in consultations with other specialists and generalists, and in the cost of treatment. € 370 compared with € 287 The largest cost savings were made by patients with the worst ratings of their physical condition prior to seeking homeopathic treatment.
104.	Witt C. Effectiveness of homeopathy, an example of systematic research in children with atopic eczema. Proceedings of 63rd LMHI Congress. May 20-24, 2008.	Prospect., comparative cohort study	Homeopathy	Comparable efficacy but fewer costs for the homeopathic group.

CHAPTER VIII

Drug Proving (HPTs)

Homeopathy is a medical practice aiming at strengthening the natural homeostasis of the body and stimulating the immune system. Homeopathy acts following the similarity principle; that means that the symptomatic patient is treated with a medicine containing a substance causing similar symptoms in a healthy person. For example onion can be the cause of a watery discharge of the nose and eyes. A medicine prepared from onion, namely *Allium cepa*, can treat patients who have these symptoms during a coryza or allergic rhinitis accompanied by irritating watery discharge from the nose.

The law of similars has to be respected during clinical and fundamental studies. Twenty years ago a new paradigm allowing explanation of the homeopathic effects had been developed. It is the paradigm of the “Body signifiers”.²⁹⁷ It explains why the law of similars has to be respected in research protocols on homeopathy; the tested medicine must be significant for the research subject (cell, plant, animal or human). A databank of experiments on homeopathy is regularly updated and available today.²⁹⁸

A. Homeopathic pathogenetic trials or provings

Hahnemann conducted repeated experimental drug studies on himself and the sixty-four volunteers whose names are listed in his *Materia Medica Pura*. In total he investigated 101 remedies over a period of about half a century, establishing the method which has come to be known as 'Proving'. His immediate followers, Hering, Stapf and others, carried out their own provings, but continued to turn to Hahnemann for advice, as is shown

by their correspondence. The first generations of homoeopaths continued this tradition. During the 19th century provings multiplied in Germany, France, England and above all in the United States, under the powerful influence of Hering. In Austria, from 1842 on, the Homoeopathic Society of Vienna undertook numerous reprovings, as well as establishing new pathogeneses, including *Argentum nitricum*, *Kalium bichromicum* and *Coccus cacti*. In France, Petroz, and the amazing Benoit Mure, with his Brazilian pathogeneses, stand out.²⁹⁹ Fortier-Bernoville has described the proving scene in America in the last century as the ‘zenith of proving’. He informs in his paper that in America, the method became very refined and proving on the healthy continued on a large scale. In the homoeopathic colleges, young people voluntarily intoxicated themselves and remained for days or sometimes several weeks in their rooms, or even took to their beds. They noted all the symptoms they experienced. On comparing the symptoms reported it was possible to rank them according to their frequency.³⁰⁰

Historically, HPTs have been methodologically innovative. The first double-blind placebo controlled homeopathic ‘proving’ was conducted in 1835, and was one of the first double-blind placebo controlled trials in the history of medicine.³⁰¹ In 1895 the suggestion of including a pre-observation ‘run-in’ period to prepare the volunteer was made,³⁰² and one of the earliest multicentre double-blind clinical trials was an HPT of *Belladonna* conducted by Bellows, published in 1906.³⁰³ Modern provings are conducted in the same spirit. However, early in the 20th century, Hughes³⁰⁴ critically analysed Hahnemann’s

²⁹⁷ Bastide M. & Lagache A. *Revue Intern. Systémique*, 1995;9 :237-249 + *Altern Ther Health Med*. 1997;3:35-9

²⁹⁸ Van Wijk R, Albrecht H. Proving and therapeutic experiments in the HomBReX basic homeopathy research database. *Homeopathy*. 2007;96:252-257.

²⁹⁹ Demarque D., The development of proving methods since Hahnemann; *The British Homoeopathic Journal*; April 1987. Vol. 76. pp. 71-75

³⁰⁰ Fortier-Bernoville: *Propagateur de l'Homeopathie*. February 1934.

³⁰¹ Stolberg M. *Die Homöopathie auf dem Prüfstein. Der erste Doppelblindversuch der Medizingeschichte im Jahr 1835*. *Münchener Medizinische Wochenschrift* 1996; 138:

364–366.

³⁰² The Medical Investigation Club of Baltimore. *A Pathogenetic Materia Medica*. Philadelphia: Boericke & Tafel, 1895.

³⁰³ Bellows HP. The Test Drug-Proving of the O. O. & L. Society: A Reproving of *Belladonna* Being an Experimental Study of the reactions to newly marketed drugs in general practice in England: analysis of 48 cohort studies. *Br J Clin Pharmacol* 1998; 46: 505–511.

³⁰⁴ Hughes R. *A Manual of Pharmacodynamics*, 6th edn. London: Leath and Ross, 1912.

conclusions. A modern analysis of Hahnemann's guidelines found many flaws, which could not have been anticipated by Hahnemann, all likely to lead to an over-estimation of pathogenetic effects.³⁰⁵ A review of HPTs published in the UK included 45 studies, and showed a great variability in terms of the medicines tested, methodology, volunteers, sample size and outcome.³⁰⁶ More recently, a systematic review by Dantas et al reveals that the homeopathic pathogenetic trials (HPTs) conducted between 1945 and 1995 were generally of low methodological quality. There is a high incidence of pathogenetic effects in publications and volunteers but this could be attributable to design flaws. Homeopathic medicines, tested in HPTs, appear safe. However, the central question of whether homeopathic medicines in high dilutions can provoke effects in healthy volunteers has not yet been definitively answered, because of methodological weaknesses of the reports.³⁰⁷

Dantas et al concluded through their review that the evidence for the occurrence of pathogenetic effects in HPTs is contaminated. They opinionated that homeopathic practitioners expect useful information from HPTs. Yet we do not even know the pattern of symptoms produced in HPTs. Do they occur in most volunteers or only in a minority? To resolve this initially it would suffice to do randomized trials with good intraindividual placebo control, with clear criteria for inclusion/exclusion and attribution of causality. However, if only a small minority of volunteers manifest changes (and the better designed studies suggest that this is the case) then new designs are required, perhaps drawing on experience for the detection of type II, or idiosyncratic, adverse drug reactions, with much larger samples and more qualitative detail of the reported symptoms. Alternatively, one could screen to find apparently sensitive volunteers and then conduct series of randomized, doubleblinded, placebo-controlled single case trials with multiple cross-over on these volunteers

using different dilutions and exploring not only the occurrence of symptoms but the quality of the symptoms. One possible objection to this procedure is that sensitive volunteers may progressively loose their sensitivity in the course of such a procedure. In any case new HPTs should be conducted by competent investigators and include a definition of a healthy volunteer and an assessment of health status. The populations should be described, the methods should minimize bias, suggestion and the incorrect attribution of spontaneous or unrelated changes to the medicine, clear instructions for volunteers and supervisors, sensitive and valid outcomes measurements, and of course conform to ethical standards for human experimentation. Qualitative as well as quantitative evaluation may be required if we are to understand what happens to healthy volunteers taking homeopathic medicines compared to placebo. The use of an exclusively quantitative statistical analysis probably leads to an underestimate of pathogenetic effects but on the other hand inadequate use of control and failure to use placebo symptoms as a comparator within each individual leads to false-positive results. 'Rare, strange and peculiar' or idiosyncratic symptoms are believed to be of crucial importance in homeopathic prescribing, yet they occur in only a few or no volunteers in small HPTs. Qualitative criteria to discriminate verum from placebo effects in HPTs need to be validated. In HPTs of traditional parallel group design such idiosyncratic effects would be drowned in statistical 'noise' arising from spontaneous, incidental or irrelevant sources. We need methods to detect them. The answers to these problems are not yet clear, and the lessons that can be learnt from traditional trials few. They are important areas for methodological development.³⁰⁸

On the evidence Dantas et al have reviewed, they inferred it was not possible to answer to the main questions posed in HPTs: do homeopathic medicines in high dilution, cause changes in healthy volunteers? If they do, how can we

³⁰⁵ Dantas F. How can we get more reliable information from homeopathic pathogenetic trials? *Br Hom J* 1996; 85: 230–236.

³⁰⁶ Dantas F, Fisher P. A systematic review of homeopathic pathogenetic trials ('proving') published in the United Kingdom from 1945 to 1995. in: Ernst E, Hahn EG editors. *Homeopathy: A Critical Appraisal*. London: Butterworth- Heinemann, 1998. p.

69–97.

³⁰⁷ Dantas et al; A systematic review of the quality of homeopathic pathogenetic trials published from 1945 to 1995; *Homeopathy* (2007) 96, 4–16

³⁰⁸ Dantas et al; A systematic review of the quality of homeopathic pathogenetic trials published from 1945 to 1995; *Homeopathy* (2007) 96, 4–16

discriminate the effects due to the substance tested from incidental effects? If appropriate, rigorous and well-designed research gives a negative answer to the first question, we should relegate HPTs of highly diluted homeopathic medicines to be purely historical and expunge information deriving from them from the homeopathic database. But if high-quality research shows that they can produce specific effects, we will need to refine the methodology of HPTs in order to clearly identify effects attributable to the substance tested.³⁰⁹ However, over the recent years, the proving process has evolved and grown into a multi-facetted mode of investigation. Many good quality HPTs have yielded significant information regarding the above questions. A recent HPT by Dominici et al demonstrated the nonequivalence between homeopathic medicines in high dilution and placebo and contributed to the improvement of proving methodology and evaluation. The authors have sought more confirmatory studies.³¹⁰ Another HPT was able to link the effect of homeopathic medicines *Coffea cruda* and *Nux vomica* in 30c potencies to short-term nonlinear dynamic parameters of slow wave sleep EEG in healthy young adults, concluding that MSE may provide a more sensitive NDS analytic method than D2 for evaluating homeopathic remedy effects on human sleep EEG patterns.³¹¹

The most important tool to emerge from review by Dantas et al is the Methodological Quality Index (MQI) used to assess the quality of published HPTs, the MQI could also be used as a checklist to improve the methodology of HPTs at the design stage. The four components on which the MQI is based on aspects such as randomization, inclusion and exclusion criteria, blinding and criteria for selection of pathogenetic effects,

with values ranging from 1 to 4 for each component, giving a range from 4 to 16. These factors are very important to improve methodology of HPTs.³¹² On the flipside, though, Quirk and Sherr raise a number of important and controversial issues concerning the systematic review of Homeopathic Pathogenetic Trials by Dantas et al.³¹³ However, since this review was designed, new ideas and data have emerged. These suggest that perhaps a nonlocal model should be applied to homeopathy as a whole. If such nonlocal models are validated it might be doubtful whether blinded placebo controls actually act as an adequate filter for noise, as specific symptoms have to be expected in those groups as well. We have seen such effects in more recent homeopathic pathogenetic trials and this has raised doubts as to whether placebo controls can actually control properly for what they are supposed to control within homeopathic pathogenetic trials.³¹⁴ Perhaps another review of the HPTs of the last decade would be potentially contributory as they are expected to fall in the evolved methodologies suggested in the review by Dantas et al.

In moving forward and evaluating the usefulness of provings, it can be thus concluded, we should combine innovative research strategies that respect both homeopathy and qualitative research as well as the more well known tools of quantitative research.^{315,316, 317}

At LMHI Congresses new, or confirmation of previous, provings are presented.

In May 2008 the following provings were presented (see Proceedings):

Hydrogenium peroxidatum – H2O2. Dominici G. Double-blind, randomized, placebo controlled design; 16

³⁰⁹ Dantas et al; A systematic review of the quality of homeopathic pathogenetic trials published from 1945 to 1995; *Homeopathy* (2007) 96, 4–16

³¹⁰ Dominici G., Bellavite P., Stanislaw C d., Gulia P and Pitari G., Double-blind, placebo-controlled homeopathic

³¹¹ Bell I.R., Howter A., Jackson N., Aickin M., Bootzin R.R. and Brooks A.J., Nonlinear dynamical systems effects of homeopathic remedies on multiscale entropy and correlation dimension of slow wave sleep EEG in young adults with histories of coffee-induced insomnia; *Homeopathy* (2012) 101, 182–192

³¹² Dantas et al; A systematic review of the quality of homeopathic pathogenetic trials published from 1945 to 1995; *Homeopathy* (2007) 96, 4–16

³¹³ Sherr J. and Quirk T., Systematic review of homeopathic pathogenetic trials: an excess of rigour?; *Homeopathy* (2007) 96, 273–278

³¹⁴ Walach H; Response: potential nonlocal mechanisms make placebo controls in

pathogenetic trials difficult; *Homeopathy* (2012); 278

³¹⁵ Signorini A, Lubrano A, Manuele G, et al. Classical and new proving methodology: provings of plumbum metallicum and piper methysticum and comparison with a classical proving of plumbum metallicum. *Homeopathy* 2005; 94(3): 164–174.

³¹⁶ Walach H, Sherr J, Schneider R, Shabi R, Bond A, Rieberer G. "Homeopathic Proving Symptoms: result of a local, non-local, or placebo process? A blinded, placebo-controlled pilot study". *Homeopathy* 2004; 93: 179–185.

³¹⁷ David Riley; Thoughts on Homeopathic Drug Provings; *Homeopathy* (2007) 96, 231–232

provers revealing several symptoms clinically verified on human and animals.

Latrodectus Mactans Tredecimguttatus. AFADH – Fayeton S. Open design; 8 provers revealing groups of symptoms clinically verified.

Potentilla Anserina. Jansen JP. Multi-centric, prospective, double-blind design; 10 provers revealing 27 groups of symptoms.

Plutonium's Peaceful Brother: **Neptunium muriaticum.** Lustig D. Placebo-controlled design; 19 provers revealing 315 symptoms distributed into 12 groups of characteristic symptoms.

Brazilian Pathogeneses: **Helleborus Niger.** Marim M. Third confirmation, multicentric international design; 4 groups of symptoms are regularly recorded.
Sutherlandia Frutescens. Ross A, Webster H, van der Hulst N. Double-blind, placebo-controlled design; 24 provers revealing 15 symptoms correlated with the traditional use of the plant (restorative tonic in HIV patients).

Erythrina Lysistemon (African Coral Tree). Ross A, de Beer E. Triple-blind, placebo-controlled design; 32 provers revealing 25 symptoms.

Lobelia Cardinalis. Scheepers L. Open design; 7 provers revealing 293 symptoms.

Galium Aparine. Scheepers L. Open design; 8 provers revealing 18 groups of symptoms.

Ytterbium Nitricum. Vicol M, Cristescu LM, Ivanciu NV, Dobre ML, Sumbasacu M, Oprea AM, Goiceanu DM, Dragusanu O, Binder-Hampel A, Stanciu AM, Struza CM. Open design; 13 provers revealing 32 symptoms.

Hecla Lava. Multicentric international design.

In May 2010 (LMHI Congress) the following proving was presented (see Proceedings):

Protea cynaroides. Botha I. Double-blind design; 70 provers (60 verum, 10 placebo) revealing 4 Mind stages and many specific symptoms.

At the same congress the same team answered the question: "Are provings reproducible?"

To answer this question the group of the Durban University

(South Africa) (Botha I.) did a comparative survey between groups using different proving methodologies (C4 trituration, Sherr and Dream proving methodology) for a same homeopathic medicine. These results are also in the Proceedings of the 2010 LMHI Congress. The end result was the formulation of 1373 rubrics utilized for analysis purposes, resulting in 881 verified rubrics of *Protea cynaroides*. The hypothesis "0": "there is no difference in the symptoms experienced between two consecutive years (symptoms are reproducible)" $p > 0.05$ has been confirmed and is the highest in the group using C4 methodology. The C4 and Sherr methodologies are the most reproducible based on rubric presence.

In May 2010 (European Parliament Strasbourg Congress on Homeopathy) see Proceeding:

Morpho Menelaus Occidentalis. Renoux H. A double blind design (7,9,15,30CH, 200K, placebo) pathogenetic trial. 30 provers, 16 supervisors.

In December 2011 (LMHI Congress) the following provings were presented (see proceedings):

Strychnos henningsii. Ross A.H.A. A triple-blind proving design (30CH, placebo) using also blood testing and clinical measurements to assess the effects.

Malus communis. Jansen JP. A multi-center, prospective, double blind proving design (12K, 30Kn 200K). *Eriodryction californicum*. Scheepers L. Double blind proving design (30K)

Bacopa monnieri (Brahmi). Gupta V. Double blind placebo controlled proving design.

Proving: Publications in International Journals

2008 Argemone mexicana. Dey NR, Das KC, Rai Y. Multicentric double-blind design, 38 provers (6C, 30C, 200C). *Indian Journal of Research in Homeopathy*. January-March 2008; Vol2, n°1:13-18.

Cephalandra Indica. Dey NR, Das KC, Rai Y. Multicentric double-blind design, 17 provers (6c, 30c, 200c). *Indian Journal of Research in Homeopathy*. April-June 2008; Vol2, n°2:20-24.

Ficus religiosa. Dey NR, Das KC, Rai Y, Siddiqui VA, Singh R. Multi-centric double blind homeopathic pathogenetic trial. *Indian Journal of Research in Homeopathy*. July-September 2008; Vol2, n°3:10-14.

Paraffin. Rajpal, Siddiqui VS, Dey NR, Das KC, Rai Y, Singh VK. Multi-centric double-blind design, 43 provers (6C, 30C, 200C).

Indian Journal of Research in Homeopathy. October-December 2008;Vol2,n°4:20-25.

Proving: Publications in International Journals 2009

Pothos foetidus. Shaw R, Vikram Singh, Siddiqui VA, Rajpal, Vinay Singh Kr, Hari Singh, Mal PC, Bhakat AK. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. January-March 2009;Vol3,n°1:18-22.

Aconitum napellus. Piltan D, Rist L, Simões-Wüst P, Saller R. Test of a homeopathic dilution of Aconitum napellus. A clinical, randomized, double-blind, controlled crossover study in healthy volunteers. Proving shows significant distinction between Aconitum C30 and placebo. Forschende Komplementärmedizin, 2009; 16:168-73.

Saraca indica. Nayak C, Siddiqui VA, Rajpal, Vinay Singh Kr, Hari Singh, Ramender Pal, Vikram Singh, Roy RK, Prakash S, Yogender Rai, Das KC. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C). Indian Journal of Research in Homeopathy. April-June 2009;Vol3,n°2:32-37.

Cuscuta reflexa. Shaw R, Siddiqui VA, Rajpal, Vinay Singh Kr, Dey NR. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. July-September 2009;Vol3,n°3:7-13.

Mimosa humilis. Nayak C, Vikram Singh, Siddiqui VA, Rajpal, Prakash S, Yogender Rai, Dey NR. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C). Indian Journal of Research in Homeopathy. October-December 2009;Vol3,n°4:16-20.

Proving: Publications in International Journals 2010

Skookum chuck. Siddiqui VA, Yogender Rai, Prakash S, Dey NR. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. January-March 2010;Vol4,n°1:8-14.

Carica papaya. Rajpal, Anil Khurana, Siddiqui VA, Singh V.K., Dutta B.N., Shakti Dey, Jayant R.D.. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. April-June 2010;Vol4, n°2:7-12.

Azadirachta indica. Rajpal, Anil Khurana, Vinay Kumar Singh, Reeta Bagai, Chaudhari CP, Jayant RD. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal

of Research in Homeopathy. July-September 2010;Vol 4 n°3:10-16. Ocimum sanctum. Rajpal, Vinay Kumar Singh, Roy RK, Chaudhari CP, Mal OC, Bhakat AK. A multicentric double blind Homeopathic Pathogenetic Trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. October-December 2010;Vol 4 n°4:1-6.

Proving: Publications in International Journals 2011

Bacopa monnieri. Rajpal, Vinay Kr. Singh, V.A. Siddiqui, C. Nayak, P.C. Mal, D.B. Sarkar. A multicentric, randomized, double-blind homeopathic pathogenetic trial (6C, 30C, 200C). Indian Journal of Research in Homeopathy. October-December 2011;Vol 5 n°4:22-27.

Proving: 67th LMHI Congress 2012

Lava kilauea – Pele's Hair. Christina Ari presented preliminary results of a multicentric blinded proving in two separate groups (13 and 17 participants) and concluded that this remedy is to be regarded after heavy traumatic disturbances. Proceedings 67th LMHI Congress.

Rajesh Shah presented a double blind placebo controlled drug proving on a HIV Nosode (22 volunteers). Proceedings 67th LMHI Congress.

Proving: Publications in International Journals 2012

Plumbum metallicum. Signorini and Pichler presented the complete 2000 trial with a synthesis of and a comparison with the original 1828 trial. The used a 30CH dilution in a multicentric setting and found 37 new symptoms above the confirmation of already well knowed symptoms. Indian Journal of Research in Homeopathy. January-June 2012. Vol 6; n°1 & 2:32-46.

Buxus sempervirens. Rajpal, Vinay Kr. Singh, Siddiqui V.A., Nayak C, Majumdar A.K., Chandra P.K., Dey S.K. A multi-centric, double-blind randomized, homeopathic trial. Using 6 and 30CH dilution in 40 provers producing 160 different symptoms (new or confirmation). Indian Journal of Research in Homeopathy. July-September 2012. Vol6; n°3:1-9. Buxus sempervirens. Rajpal, Vinay Kr. Singh, Siddiqui V.A., Nayak C, Majumdar A.K., Chandra P.K., Dey S.K. A multi-centric, double-blind randomized, homeopathic trial. Using 6 and 30CH dilution in 40 provers producing 160 different symptoms (new or confirmation). Indian Journal of Research in Homeopathy. July-September 2012. Vol6; n°3:1-9.

2014-15 –New publications

1. **Shah R. Hepatitis C Nosode: The preparation and homeopathic pathogenetic trial. Homeopathy 2013;102:207-14.**
 - A double blind, randomized placebo controlled homeopathic pathogenetic trial of Hepatitis C (Hep C) nosode in 30c potency was conducted on 22 volunteers (verum 15, placebo 7). The Hep C nosode was associated with qualitatively and quantitatively distinct symptoms, which can be applied in clinical practice.
2. **Rakshit G, Singh JP, Pathak SD, Banoth CK, Chandra PK, Rajpal, et al. A multi-centric double-blind randomized homoeopathic pathogenetic trial of *Gymnema sylvestre*. Ind J Res Hom. 2013;7(1):9-21.**
 - The Central Council for Research in Homeopathy conducted a multi-centre, double-blind placebo-controlled proving of *Gymnema sylvestre* in two potencies (6C and 30C) on 63 apparently healthy volunteers. Out of 37 provers who were on actual drug trial, 16 manifested symptoms. The drug was able to produce symptoms in each potency in most of the parts of the body.
3. **Shah R. Hydroquinone: homoeopathic pathogenetic trial. Ind J Res Hom. 2013;7(2):47-61.**
 - The Central Council for Research in Homeopathy conducted a double-blind, randomized, placebo-controlled drug proving of Hydroquinone in 30c potency using the Quantitative and Qualitative Pathogenetic Index on 22 volunteers (verum 15; placebo 7). The preparation could be used for vitiligo on the basis of its toxicological effects, supported by the anecdotal study.
4. **Rakshit G, Vichitra AK, Rajpal, Choudhury SK, Singh VK. A multi-centric double-blind homoeopathic pathogenetic trial of Cyclosporin. Ind J Res Hom. 2013;7(3):109-15.**
 - To elicit the pathogenetic response of the drug Cyclosporin in homoeopathic potencies on apparently healthy human beings, Central Council for Research in Homeopathy conducted a double-blind, placebo-controlled trial in two potencies (6C and 30C) on 50 apparently healthy volunteers (verum 33; placebo 17) were on placebo. Eleven provers manifested symptoms. The drug was able to produce symptoms in each potency in most parts of the body.
5. **Teut M, Dahler J, Hirschberg U, Luedtke R, Albrecht H, Witt CM. Homeopathic drug proving of *Okoubaka aubrevillei*: a randomised placebo-controlled trial. Trials 2013;14:96.**
 - This multicentre, randomised, double-blind, placebo-controlled phase 1 trial evaluated pathogenetic actions of *Okoubaka aubrevillei* (potency C12) on 31 subjects (verum 19; placebo 12). Data for 29 participants could be analysed. No significant differences in number of characteristic symptoms in both groups were observed. The odds ratio for observation of a characteristic symptom was 1.11 (95% CI 0.4-3.05, P = 0.843). The qualitative analysis showed an inter-coder reliability of 0.69 (95% CI 0.62-0.76). The qualitative comparison of symptom profiles was inconclusive. The 'nocebo' effect might be a plausible explanation for most of the phenomena observed in this trial.
6. **Jansen JP, Jong M, Hildingsson I, Jong MC. A minimum protocol for randomised homeopathic drug proving as basis for further research. Forsch Komplementmed. 2014;21(4):232-8. doi: 10.1159/000366042.** Background: In order to further improve the methodology and quality of data collection in homeopathic drug provings (HDP), there is a need for a minimum standardised HDP protocol. The objective of the present study was to test the feasibility of this type of protocol. Materials and methods: The study protocol embraced a multi-centre, randomised, double-blind, placebo-controlled trial with 2 parallel groups. It was approved by an ethics review committee. During the pre-

approval phase, discordances between the regulatory and homeopathic requirements for the protocol were checked and solutions found. The study medication was *Potentilla anserina*. 6 participants received verum and 4 placebo. The resulting symptom list will be published elsewhere. The procedure was accepted by all participants. Results: Three important issues were addressed: the requirement to keep all participants blinded; the adverse events reporting to regulatory authorities; and the necessity of a placebo control group. Other issues that need further investigations were identified, e.g. sample size, observation period and dosage regimen. Conclusions: A minimum protocol of a HDP is feasible. All important design elements of HDP could be solved in discussions with the respective regulatory authorities, and participating homeopaths accepted the procedure.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25231564>

Jansen JP, Ross A. Homeopathic pathogenetic trials and provings: the need for harmonized guidelines. *Homeopathy*. 2014 Jan;103(1):1-2. doi: 10.1016/j.homp.2013.10.005.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24439450>

7. **Walach H, Teut M. Scientific proving of ultra high dilutions on humans. *Homeopathy*. 2015;104(4):322-7. doi: 10.1016/j.homp.2015.08.008.** Background: Homeopathic drug provings or pathogenetic trials (HPTs) are the pillar of homeopathy. This review summarizes the authors' findings and interpretations derived from a series of homeopathic drug proving between 1994 and 2015. It gives an overview over a series of attempts to use modern scientific experimental

methodology to answer the question, whether such HPTs produce symptoms in healthy volunteers that can be distinguished from placebo symptoms. Methods: Various experimental models were used: repeated crossover trials with categorical data collection, and a single-case, randomised study. Final models use diligent qualitative data-collection in experienced volunteers. In those, raters decide whether symptoms are typical for a remedy delivered or not. The design is triple-blind and placebo-controlled. Result: While previous attempts were inconclusive, this new model allowed to separate placebo symptoms from verum symptoms repeatedly in a series of two definitive studies following promising pilot studies. Results were statistically significant. Also, some signs of the purported non-local signature of homeopathic effects were visible, and the consequences for future methodology is discussed. Conclusion: Provided some cautionary notes are taken into account, HPTs can be used to separate out true specific symptoms from placebo symptoms. By the same token this is a road to experimental proof that homeopathic remedies are not just placebos. However, this needs to be taken forward by independent groups.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678737>

8. **Shah R. HIV Nosode: The Homeopathic Pathogenetic Trial. *Forsch Komplementmed*. 2015;22(3):156-62. doi: 10.1159/000435845.** Background: Deriving clinical indications for the HIV nosode by conducting a double-blind, placebo-controlled homeopathic pathogenetic trial (HPT) with the aim to introduce a new nosode to the profession. Method: The HPT was conducted in 22 volunteers, 15 of which received HIV nosode in 30c potency pills, while 7 received

identical placebo pills orally, once a week, for 4 weeks. The volunteers' symptoms during initial 7 days of run-in period were noted. All symptoms for both groups produced during run-in period were excluded from final analysis. Informed consent form, approval by Ethics Committee, laboratory investigations as well as safety and ethical measures were provided. The volunteers were trained to write data in prescribed diaries, and the data were analyzed. Results: The HPT of the HIV nosode exhibited qualitatively distinct symptoms, which can be applied in clinical practice. Number of symptoms reported in verum group was 130, in placebo group 60. Quantitative pathogenetic index was 0.285 in verum group, 0.238 in placebo group; qualitative pathogenetic index was 0.1402 in the verum group as compared to placebo (0.0907). Safe use was documented. Conclusion: This study brought in guiding symptoms, which will help the profession to employ this nosode in practice.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/2633563>
5

9. **Mohanty N, Choudhury SK, Jena SK. A double-blind, placebo-controlled Homoeopathic Pathogenetic Trial of Nanocurcumin 6X. Indian J Res Homoeopathy 2015;9:176-87. doi: 10.4103/0974-7168.166381.** Background: A double-blind, randomized, placebo-controlled Homoeopathic Pathogenetic Trial (HPT) of Nanocurcumin was conducted using the accepted guidelines, Ethical Committee approval, and scientific documentation. The standardized potentization method was adopted to enhance the quality of the pathogenetic trial. Various statistical calculations were used for evaluation of the symptoms. Aim: The aim of the study was to conduct an HPT of Nanocurcumin 6X, a nano-substance in dilution. Materials and Methods: The drug Nanocurcumin 6X was proved through

double-blind, placebo-controlled method. The trial was done in 6X potency on 30 healthy provers who were screened by their pretrial medical examinations and routine laboratory investigations. Of 30 provers, 7 were on placebo and 23 were on drug. Medicine was prepared according to the principles of trituration given in Homoeopathic Pharmacopeia of India. The signs and symptoms generated during the trial period were noted by the provers and decoded and compiled afterwards. Results: Of 23 provers who were on verum 17 provers manifested symptoms and out of 7 provers who were on placebo 2 manifested symptoms. Conclusion: The drug pathogenesis evolved indicates its therapeutic use in sinusitis, migraine, dyspepsia, constipation, diarrhoea, dysmenorrhoea, pharyngitis, bronchitis, etc.

Source:

<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=176;epage=187;aulast=Mohanty>

10. **Rathi A, Baburaj D S, Sundaram E N, Kumar S, Khurana A, Manchanda RK. Pharmacognostic study of Chamaecyparis lawsoniana (Murr.) Parl.: A drug used in Homoeopathy. Indian J Res Homoeopathy 2015;9:20-4. doi: 10.4103/0974-7168.154344.** Abstract: The pharmacognostic profile of crude drug has a key role in standardization for quality, purity and drug identification. The present study deals with pharmacognostic evaluation of aerial part of Chamaecyparis lawsoniana (Murr.) Parl. a drug used in homoeopathic system of medicine for diverse clinical uses such as terrible pain in stomach, tumors, keloid, warts and lipoma of thigh. The study includes collection, identification, macroscopy, microscopy and organoleptic characteristics of aerial part of Chamaecyparis lawsoniana. Anatomically the leaf is distinguishable into a layer of the epidermis

followed by parenchymatous mesophyll and resin duct in the parenchymatous cortex. Powder microscopy shows the presence of epidermal cells, parenchymatous cells and tracheids. These observations may be used as pharmacopoeial standards for identification of *Cha maecyparis lawsoniana*.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=20;epage=24;aulast=Rathi>

11. **Rakshit G, Vichitra A K, Chandra P K, Rajpal, Singh VK, Choudhury S K. A multi-centric double blind homoeopathic pathogenetic trial of *Hygrophila spinosa*. Indian J Res Homoeopathy 2014;8:9-18. doi: 10.4103/0974-7168.129672.**

Objective: The study was conducted to elicit the pathogenetic response of *Hygrophila spinosa* in homoeopathic potencies on healthy human volunteers. Methodology: The drug *Hygrophila spinosa* was proved by the Central Council for Research in Homoeopathy (CCRH) through randomized, double-blind, placebo-controlled method. The proving was conducted at three centres viz. Central Research Institute (H), [CRI (H)] Noida, Drug Proving Unit [DPU], Bhubaneswar and Regional Research Institute (H) [RRI (H)], Kolkata. The drug was proved in two potencies (6C and 30C) on 48 apparently healthy volunteers who were selected after conducting pre-trial medical examinations by the medical specialists and routine laboratory investigations. 32 of them were kept on interventional drug trial and remaining took placebo. At CRI (H), NOIDA, 56 dose schedule (i.e. 56 doses of drug/placebo were consumed in each batch) was followed while at DPU, Bhubaneswar and at RRI (H), Kolkata, 12 dose schedule (i.e. 12 doses of drug/placebo were to be consumed in each batch) was followed. The symptoms generated during the trial period were noted by the volunteers and elaborated by the Proving

Masters which were compiled at Homoeopathic Drug Proving-cum-Data Processing cell of CCRH headquarters after decoding. Results: Out of 32 provers who were on interventional drug trial, only 14 manifested symptoms. The drug was able to produce symptoms in both the potencies. 92 symptoms appeared during the drug trial from various locations. Conclusion: The drug pathogenesis evolved indicates its therapeutic use for urticaria, frontal sinusitis, conjunctivitis, stomatitis, gastroenteritis, nausea (morning sickness), intermittent fever etc.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=1;spage=9;epage=18;aulast=Rakshit>

12. **Manchanda RK, Khurana A, Pal R, Arya BS, Vichitra AK, Mohanan P G, Mehra P, Sharma S, Singh VK. A multicentric, double-blind randomized, homoeopathic pathogenetic trial of *Allium sativum*. Indian J Res Homoeopathy 2016;10:6-23. doi: 10.4103/0974-7168.179152.**

Background: Homoeopathic drug proving is an integral part of Homoeopathic System of Medicine. It is the first step in finding out the pathogenetic powers of a drug. Objective: To elicit the pathogenetic response to *Allium sativum* in homoeopathic potencies on healthy human provers. Materials and Methods: A multi-center randomized, placebo-controlled, double-blind trial was conducted at two centers of the Central Council for Research in Homoeopathy (CCRH). Proving was conducted on 33 healthy provers after the pretrial medical examination. All the provers were given 12 doses of placebo divided in 4 doses/day for 3 days during the first phase of the trial. After randomization, in the intervention group (21 provers), *Allium sativum* (*A. sativum*) was proved in 6C and 30C potencies, in two phases. In the placebo group, 12 provers were administered placebo in the same manner. The symptoms manifested during the trial period

were noted down by the provers and then elaborated by the proving masters. The generated data on *A. sativum* were then compiled and analyzed at proving-cum-data processing cell at CCRH headquarters. Results: Out of 21 provers who were on actual drug trial, only nine provers manifested symptoms. Drug was able to manifest symptoms in both the potencies, in more or less every part of the body. Conclusion: The pathogenetic response elicited

during the proving trial expands the scope of use of the drug *A. sativum* and will benefit the research scholars and clinicians. The generated symptoms of this drug will carry more value when verified clinically.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=6;epage=23;aulast=Manchanda>

CHAPTER IX

Clinical verification

One of the other scientific pillars of homeopathy, beside the homeopathic pathogenetic trial or proving, is clinical experience. Due to over-emphasis of RCT the value of clinical experience has become under-estimated.³¹⁸ Each separate case gives some qualitative information and collections of similar cases allow quantitative analysis. One case can reveal a very peculiar symptom indicating a specific symptom; for more common symptom, like chilliness, we need a larger number of cases to indicate to what degree patients responding well to a particular medicine are chilly.

Clinical experience shows that a homeopathic medicine cannot be prescribed on indication alone. Recently, conventional medicine is adapting this centuries old homeopathic insight in personalised medicine. Researching the influence of multiple variables on outcomes requires a suitable strategy.³¹⁹ Symptoms and personal characteristics are prognostic factors for a favourable response to a specific medicine. Homeopathic practitioners know that a specific symptom/characteristic is an indication for a specific medicine if this symptom/characteristic occurs more frequently in the population that responds well to that medicine than in the remainder of the population.

According to Hering, a drug should have undergone four phases to be called validated; *Possibility*: Symptoms that follow when a substance is taken in health; these may also be toxic; *Probability*: Depends on the frequency of appearance³²⁰ of the same/similar symptoms when the substance is diluted and dynamised; more the frequency of symptoms, higher the probability; *Confirmation*: When the same substance, diluted and dynamised, confirms the symptoms known from previous pathogenesis and provokes probable new symptoms; *Corroboration*: when

the symptoms so obtained are corroborated pathologically and physiologically as per the existing medical notions. All this but only magnifies probability, but the ultimate is – *Verification*: When at the bed of the sick, the correspondence of the probable symptom, confirmed and corroborated, is verified by the obtained clinical results.³²¹ This reflects the sheer importance of clinical verification in homeopathy. The final aim of the clinical verification of homeopathic symptoms is to evaluate the strength of the link between a symptom and the efficiency of a remedy verifying at the same time the principle of similar and the totality rule.³²²

Materia Medica is fundamental to homoeopathic prescription. Clinicians largely depend their choice of drug based on the information recorded in the source books. However, many symptoms recorded in the literature are included or graded not from drug proving findings but upon retrospective observation made by experts based on their clinical experiences. Over the time, the clinical symptoms, whether or not verified, have found a place in Materia Medica. This is true even for Jahr's 1840 manual and significant number of Kent's first degree symptoms. In order to keep in tune with times and to uphold the excellence in clinical results through prescribing drugs on most indicated symptoms, there is dire need to verify these symptoms. Even the symptoms proven by human volunteers centuries ago need verification as per the contemporary times. People are changing, morbidity patterns are changing, nature of our source material is also changing. Our Repertory and Materia Medica should remain living texts responding to these changes and provide contemporary information in contemporary

³¹⁸ Vandembroucke JP. In defense of case reports and case series. *An n Intern Med*. 2001;134:330-334.

³¹⁹ Riley RD, Hayden JA, Steyerberg EW, Moons KG, Abrams K et al. Prognosis research strategy (PROGRESS) 2: Prognostic Factor Research. *PloS Med* 2013;10(2): e1001380. doi: 10.1371/journal.pmed.1001380

³²¹ Hering C., The guiding symptoms of our Materia Medica; B.Jain Publishers Pvt. Ltd., Reprinted 1989; pp 4-10

³²² Wassenhoven M.V., Third Edition of LMHI Guidelines on Clinical Verification of Homeopathic Symptoms; March 2013; Available on: http://www.lmhi.org/dokumente/upload/e2dd4_2013_Guidelines_Clinical_verification_hom_symptoms_third_edition.pdf

language.³²³

The origin and reliability of symptoms in our *Materia Medica* and Repertory is not always clear. The influence of variance is not enough guarded, especially in symptoms that occur frequently. If, say, 10% of the patients that respond well to *Arsenicum album* are warm-blooded against 40% of the remainder of the population, being warm-blooded cannot be seen as an indication for *Arsenicum album* (although some of the *Arsenicum album* patients are indeed warm-blooded, this is due to natural variance). The influence of variance can be measured by quantitative research.

Efforts to verify and refine the abundant literature of *Materia Medica* are being made. In the Netherlands a group of experienced homeopathic doctors started discussing successful cases retrospectively concerning specific homeopathic medicines in 1997. The purpose was to validate existing *Materia Medica* by qualitative analysis of successful cases. Data collection was done for two projects assessing homeopathic prescribing; one qualitative, the other quantitative. A Dutch commercial database program (HARP) and three database programs made by doctors for their own practice facilitated retrieving successful cases. The first project, *Materia Medica Validation* (MMV), comprised consensus meetings from 1997 to 2007. Twice a year experienced (> 5 years) Dutch homeopathic physicians were invited to bring in their best cases concerning two specified homeopathic medicines to reflect on how to improve homeopathic prescribing. The meetings were structured as open discussions, but on a pre-structured format for each case, describing reasons for prescribing the homeopathic medicine and the effects ascribed to the medicine. The cases had a follow-up of at least one year considering the assessed medicine and the relation between effect and the medicine should be clarified. There were no other inclusion or exclusion criteria to allow an open discussion about different methods in homeopathy. All participants, however, were trained in classical homeopathy. These meetings were attended by 10-25 doctors, presenting in total between five (concerning *Naja*) and 23 (concerning *Sulphur*) best cases. Each case was discussed regarding causality (was the improvement really due to the medicine?), about the type of

person and the symptoms present in the case. The GHHOS scale was used as an instrument to assist the discussion about causality. The participants had the patient's file with them, so there was the possibility to confirm symptoms that were not mentioned at first by hindsight if the symptom came up in other cases. An attempt was made to estimate the prevalence of the most important symptoms. One of the outcomes that surprised the participants was the fact that some expected symptoms were not present in all cases. Only four out of ten *Causticum* patients were sensitive to injustice, five out of 12 *Stramonium* patients were afraid of the dark. Apparently, the absence of these symptoms is no absolute contra-indication for the respective medicines. Opinions appeared to differ about what results should be entered and when. Some participants thought that only good results were relevant, some recorded the first result three months after starting treatment, others after one month.

The second project, the Likelihood Ratio project (LR project), was a prospective observational study in 10 Dutch practices from 2004 to 2007, assessing six homeopathic symptoms ('Diarrhoea from anticipation', 'Fear of death', 'Grinding teeth during sleep', 'Recurrent herpes of the lips', 'Loquacity' and 'Sensitivity to injustice'). The purpose of this project was to assess the relationship between these symptoms and positive results of respective medicines, avoiding influencing daily practice and minimising time necessary for recording data. There was no interference with usual practice, ethical approval was not required, but patients were informed that their data would be used anonymously for practice evaluation. All symptoms were checked in each consecutive new patient. All patients older than two years with checked symptoms were included. Patients with acute pathology and with no grounds for homeopathic therapy were excluded. Only chronic cases were recorded. Results regarding prescribed medicines were frequently monitored and feedback was organised in newsletters and consensus meetings. In the end 4094 patients were included and 4074 prescriptions were evaluated. Results of treatment (per medicine) were recorded after at least three months following a modified Glasgow Homeopathic Hospital Outcome Scale (GHHOS). If the last GHHOS score within a

³²³ Swayne J., Data collection and research in homeopathic medicine, British

year for a specific medicine was ≥ 2 , with probable causal relationship between medicine and result, the patient was attributed to that medicine population.³²⁴

Wassenhoven in his book on clinical verification adopted both traditional and statistical methods to retrospectively analyse 80.625 symptoms of 100 drugs with respect to their recovery in 2,148 patients. He carried out this task over 16 years and compared his results with respect to the existing values of the symptoms in the literature (Synthesis repertory, Allen's Encyclopedia and Rixhard Hughes's Cyclopedia of Drug Pathogenesis). He recommends a prospective analysis on larger scale, involving more physicians, for validation of his findings.³²⁵

Central Council for Research in Homoeopathy has been conducting clinical verification studies of indigenous and fragmentarily proved drugs since its inception in 1975. The programme is as per open clinical trial design in which patients are enrolled from O.P.D. as and when they come, after confirmation of their inclusion criteria as per a standard protocol. The homoeopathic medicines are prescribed on the basis of symptom similarity. The individualistic symptoms of each case are evaluated as per the Materia Medica & Repertorial index. Clinical Verification of symptomatic data of 108 drugs has been conducted so far. 16 other drugs proved by the Council are being verified presently.³²⁶

The task of clinical verification of homoeopathic medicines is enormous and no one method is likely to verify all the symptoms. The approach to such a task has to be flexible and varied, wherein traditional verification, as explained by Hahnemann, needs to be adopted for the unquestionable cases where either spectacular recoveries or failures are taken into account. The statistical method, based on Bayes

theorem, which studies the existing relation between two elements and calculates the likelihood ratio of a symptom, is another method. This method, created in 1958, takes into account all the cases, including the intermediate ones, and therefore, allows more detailed analysis.³²⁷ A clinical verification guidelines drafted by LMHI provides a hands on information on the subject and explains how to take up and contribute to the task of verification. Much remains to be done on this front and information sharing and methodological tool development on larger scale are needed to expedite this work. Through a systematic clinical verification, an Evidence Based Repertory will be soon a reality, starting in your own office using your own daily results.³²⁸ However, to achieve this, it is important that we start to contribute. A web programme titled Cli-Fi-Col for "Clinical Files Collections" is one such platform where the doctors can contribute their cases for analysis. It is important to collect our clinical cases in a central site in order to improve our daily practice in Homeopathy. The programme allows to search for special cases treated by our colleagues and to send the most relevant cases by ourselves. One can also use this instrument as a tool for studying Homeopathy in the practice, to collect systematically the clinical cases that allow the clinical verification of the pathogenetic symptoms and consequently the improvement of our basic tools (the Repertory and Materia Medica), and for specific projects. By contributing to the clinical verification programmes, one can become a hinge in the improvement of the future homeopathic practice.³²⁹

³²⁴Rutten ALB, Data collection: treat every variable as a treasure; personal communication, pp 1-11

³²⁵Wassenhoven M.V., Clinical verification – Verification of homeopathic symptoms; B.Jain Publishers 2008

³²⁶ Official website of CCRH: http://ccrhindia.org/Clinical_verification.asp; Accessed on October 7, 2014

³²⁷Wassenhoven M.V., Clinical verification – Verification of homeopathic symptoms; B.Jain Publishers 2008

³²⁸ Wassenhoven M.V., Third Edition of LMHI Guidelines on Clinical Verification of Homeopathic Symptoms; March 2013; Available on: http://www.lmhi.org/dokumente/upload/e2dd4_2013_Guidelines_Clinical_verification_hom_symptoms_third_edition.pdf; last accessed on 6 October 2014

³²⁹ Information available on <http://www.femh.org/wp-content/uploads/2013/01/clificol.pdf>; last accessed on 6 October 2014

Table of recent publications of clinical vification of homeopathic symptoms.

Condition/Study	N	Design	N Symp	N Rem	Results
Van Wassenhoven ³³⁰ (2005)	2148	LR retrospective	>230	100	Symptoms – Similarity – Globality
CCRH ³³¹ Damiana (2007)	3032	Trad. Method	?	1	Symptoms
Rutten & all ³³² (2008)	4094	LR Prospective	6	75	Similarity
Araujo (*). Anacardium orientale (2008)	5	Trad. Method	?	1	16 groups of symptoms – Similarity (constitution)
Gnaiger & all (*) ³³³ Petroleum (2008)	25	Trad. Method	?	1	6 groups of symptoms – Similarity (constitution)
Dominici (*) Hydrogenium peroxidatum (2008)	18	Trad. Method	10	1	Symptoms of proving – Similarity
AFADH (*) Latrodectus Tredicim Guttatus (2008)	4	Trad. Method	?	1	24 groups of symptoms – Similarity (constitution)
AFADH (*) Tarentula Lycosa (2008)	5	Trad. Method	?	1	36 groups of symptoms – Similarity (constitution)
Louis (*) Borax (2008)	12	Trad. Method	?	1	6 groups of symptoms – Similarity (constitution)
Lustig (*) Neptunium muriaticum (2008)	2	Trad. Method	?	1	1 groups of symptoms – Similarity (constitution)
Marim & all (*) (2008)	5	Trad. Method	?	4	5 groups of symptoms – Similarity (constitution)
Petrucci (*) Falcon Peregrinus Disciplinatus (2008)	8	Trad. Method	8	1	Symptoms of proving – Similarity
Pla (*) Salix Fragilis (2008)	2	Trad. Method	95	1	7 groups of symptoms - Similarity (constitution)
Scheepers & all (*) (2008)	37	Trad. Method	38	6	Symptoms + 13 groups of symptoms – Similarity (constitution)
Servais & all (*) Petroleum (2008)	11	Trad. Method	220	1	Symptoms
Stolper & all (*) (2008)	26	Trad. Method	23	2	Symptoms of proving – Similarity
Uyttenhove (*) Cheirantus cheiri (2008)	300	Trad. Method	6	1	Symptoms of proving – Similarity
Uyttenhove & all (*) Hecla Lava (2008)	262	Trad. Method	?	1	Symptoms of proving – Similarity
Chakraborty & all ³³⁴ Blatta orientalis (2008)	6184	Trad. Method	80	1	Symptoms
Chakraborty & all ³³⁵ Amoora rohituka (2008)	4706	Trad. Method	89	1	Symptoms

³³⁰Van Wassenhoven M. Towards an evidence-based repertory: clinical evaluation of Veratrum Album. *Homeopathy* 2004;93, 71-77./ First line medicine – Clinical verification – Verification of homeopathic symptoms ISBN (2008) 978-2-87491-003-6 /Van Wassenhoven M. Clinical verification of symptoms of Natrium salts.Proceedings 2010 LMHI Congress LA-USA.

³³¹CCRH. Damiana – A Multicentric Clinical Verification Study. *Indian Journal of Research in Homeopathy* 2007 vol 1 n°1,17-23

³³²Rutten ALB, Stolper CF, Lugten RFG, Barthels RWJM. New repertory, new considerations. *Homeopathy* 2008;97:16-21.

³³³Gnaiger – Rathmanmer J, Schneider A, Loader B, Böhler M, Frass M, Singer SR, Oberbaum M. Petroleum a serie of 25 Cases. *Homeopathy*2008; 97:83-88.

³³⁴Chakraborty PS et al. Clinical verification of Blatta orientalis. *Indian Journal of Research in Homeopathy*. April-June 2008;Vol 2 n°2:25-30.

³³⁵Chakraborty PS et al. Clinical verification of Amoora rohituka. *Indian Journal of Research in Homeopathy*. January-March 2008;Vol 2 n°1:19- 25.

Chakraborty & al ³³⁶ Mentha piperita (2008)	6372	Trad. Method	105	1	Symptoms
Chakraborty & al ³³⁷ Ferrum picricum (2008)	3465	Trad. Method	70	1	Symptoms
Chakraborty & al ³³⁸ Fagopyrum esculentum (2009)	6675	Trad. Method	95	1	Symptoms
Chakraborty & al ³³⁹ Alstonia constricta (2009)	3854	Trad. Method	66	1	Symptoms
Chakraborty & al ³⁴⁰ Ephedra vulgaris (2009)	1657	Trad. Method	47	1	Symptoms
Chakraborty & al ³⁴¹ Tarentula Hispanica (2009)	2794	Trad. Method	148	1	Symptoms
Chakraborty & al ³⁴² Iris Tenax (2010)	2279	Trad. Method	29	1	Symptoms
Faingnaert Y. (**) Galium aparine	1	Trad. Method	?	1	Link between proving symptoms, botany and clinical case.
Nayak & al ³⁴³ Glycyrrhiza glabra (2010)	278	Trad. Method	109	1	Symptoms
Nayak & al ³⁴⁴ Glycyrrhiza glabra (2010)	340	Trad. Method	43	1	Symptoms
Chakraborty P.S. & al ³⁴⁵ Staphylococcinum (2012)	411	Trad. Method	24	1	Symptoms of proving – Similarity
Ross A.H.A. (*)	?	Comparison with the use of the plant by tradi- tional healers	?	1	Symptoms and syndromes Strychnos henningsii
Chakraborty P.S., Ali S.A. (*)	?	Concomitant symptoms	?	19	Concomitant symptoms (modalities)
Manchanda RK et al ³⁴⁶ (2015)	166	Trad. Method	34 (old)+ 47 (new)	1	Symptoms
Chakraborty P S ³⁴⁷ (2014)	225	Trad. Method	48	1	Symptoms

³³⁶Chakraborty PS et al. Clinical verification of Mentha piperita. *Indian Journal of Research in Homeopathy*. October-December 2008;Vol 2 n°4:26-33.

³³⁷Chakraborty PS et al. Clinical verification of Ferrum picricu. *Indian Journal of Research in Homeopathy*. July-September 2008;Vol 2 n°3:15-21.

³³⁸Chakraborty et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. January-March 2009;Vol 3 n°1:23-33.

³³⁹Chakraborty et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. April-June 2009;Vol 3 n°2:38-43.

³⁴⁰Chakraborty et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. July-September 2009;Vol 3 n°3:14-20.

³⁴¹Chakraborty et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. October-December 2009;Vol 3 n°4:25-36.

³⁴²Chakraborty et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. April-June 2010;Vol 4 n°4:18-22.

³⁴³Nayak et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. July-September 2010;Vol 4 n°3:22-33.

³⁴⁴Nayak et al. A multicentric Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. October-December 2010;Vol 4 n°4:12-18.

³⁴⁵Chakraborty et al. A multicenter Clinical Verification Study conducted by CCRH. *Indian Journal of Research in Homeopathy*. January-June 2012. Vol 6 n°1 & 2:15-21.

³⁴⁶ Manchanda RK et al. Mygale lasiodora: A multicentric observational homeopathic clinical verification study. *Indian J Res Homoeopathy* 2015;9:249-57. doi: 10.4103/0974-7168.172869.

³⁴⁷ Chakraborty P S, et al Assessing the therapeutic usefulness of Ricinus communis: A multicentric observational clinical verification study. *Indian J Res Homoeopathy* 2014;8:200-8. doi: 10.4103/0974-7168.147317.

CHAPTER X

Basic Research

Homeopathy is progressively receiving scientific validation, not only as a result of significant clinical research outcomes, but also due to evolved understanding of various concepts in physics, chemistry and biomedicine, which has forced the scientific community to notice various homeopathic concepts in new light. Basic research in Homeopathy investigates a particular set of questions, chiefly the presence of therapeutic powers of original substances in ultra-high-diluted potencies, mechanism of action of the medicine, once administered, in a biological system, be it human, animal or plant, both its pharmacokinetic and pharmacodynamics aspects and the relevance of negative controls in basic researches in order to validate the findings.

Physicochemical aspects

The major part of scepticism towards Homeopathy springs from the high dilutions of homeopathic medicines achieved through the process of potentisation. The scientific knowledge of the physical cessation of any substance diluted beyond the level of yoctomole that is 10^{-24} moles/L, makes Homeopathy rather intriguing to the curious and unscientific to those who abide by the book of physical science. However, many postulations have challenged the concept of Avogadro constant and proposed that there could be non-molecular (or rather, meta-molecular) information imprinted on the structure of the solvent (water, or mixture of water and alcohol) which can interact through resonance with the

biophysical regulation systems of the target organism.³⁴⁸ In fact, among the ever-puzzling features of water, lies the possibility that it can act as a repository and transmitter of biologically significant information. When a given molecule is dissolved or immersed in water, the structure of water changes in a manner dependent on the properties of the added molecule. At the interface between the macromolecules and solvent, an enormous restructuring of water takes place, resulting into entirely new configurations even at a considerable distance from the solute molecule. 'Vicinal water', water near a solid surface or macromolecules, is known to have alteration in its structure over distances ranging from 5 to 200 diameters from the surface in question.³⁴⁹

Additionally, the process of potentisation, as reflected in many basic research papers on Homeopathy, seem to alter the physico-chemical properties of the solvent permanently, thus rendering the unique therapeutic properties to homeopathic medicines.^{350,351,352} The impact of repeated strong shaking and fluid dynamics have been reviewed in inter-molecular solvent-solute and solvent-particle interactions, whereby it is argued, that the information exchange occurs between the solute and solvent, a process already known as epitaxy.³⁵³

Therefore, in order to understand the physico-chemical dynamics of homeopathic drugs, it is important that these drugs are explored in the light of new-age understanding of physics (quantum physics) with concepts like effects of magnetic fields on dilution^{354,355,356}, aggregation of water

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³⁴⁹ Cheng YK, Rossky PJ. The effect of vicinal polar and charged groups on hydrophobic hydration. Biopolymers 1999; 50:742-50.

³⁵⁰ Elia V, Napoli E, Niccoli M, Nonatelli L, Ramaglia A, Ventimiglia E. J New physico-chemical properties of extremely diluted aqueous solutions. A calorimetric and conductivity study at 25°C; Thermal Anal Calorim 2004;331-342.

³⁵¹ Voeikov VL. The possible role of active oxygen in the memory of water. Homeopathy 2007; 96: 196-201.

³⁵² Ives JA, Moffett JR, Arun P, et al. Enzyme stabilization by glass derived silicates in glass-exposed aqueous solutions. Homeopathy 2010; 99: 15e24.

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³⁵⁴ Benveniste J. Further biological effects induced by ultra high dilutions. Inhibition by a magnetic field. In: Endler PC, Schulte J (eds). Ultra High Dilution. Dordrecht: Kluwer Acad. Publ., 1994, p.35-38.

³⁵⁵ Benveniste J, Guillonnet D. QED and digital biology. Riv Biol 2004; 97: 169-172

³⁵⁶ Weber S, Endler PC, Welles SU, et al. The effect of homeopathically

molecules as explained in the clathrate model³⁵⁷, coherence domains inside which the whole matter (atoms, molecules, electrons and nuclei) oscillates in tune with a macroscopic electromagnetic field³⁵⁸, nanoparticles that could be an integral characteristic of the homeopathic dilutions^{359,360}, entanglement^{361,362} and fractals.³⁶³

Pharmacodynamic mechanisms

Pharmacokinetics is the branch of pharmacology that studies the fate of a substance administered to a living organism up to the end point of elimination from the body. Pharmacodynamics, on the other hand, studies the effect of the administered substance on the body. The two approaches are usually studied in conjunction. The pharmacologic activity of mother tinctures and low potencies (e.g., 2C, 3C, containing relatively high doses of active principles) poses no problems of interpretation and requires analysis of the components and identification of their targets in the organism, in a way not dissimilar from that of herbal products, snake toxins, or mineral oligoelements. The action of medium potencies, that contain low doses of active principles (from about 4C or 5C to approximately 12C, close to the Avogadro limit) entails high sensitivity of living organisms and inversion of drug effects, in the framework of models not much distant from modern pharmacology, like hormesis. The action of ultra-high-dilutions (HDs, namely homeopathic dilutions beyond the Avogadro constant) requires the identification of possible 'non-molecular' or 'meta-

molecular' information transfer mechanisms.³⁶⁴ However, the specificity of any drug is based on its interaction with the biological targets. The mechanism by which it is achieved has been studied using animals, cells, tissues, plants and even at molecular level. A famous study observed the effect of lung histamine (5C and 15C) and *Apis mellifica* (9C) on in vitro human basophil degranulation and found significant results.³⁶⁵ Similar results have been reproduced elsewhere. The effect was inhibited by histamine H2 receptor antagonists cimetidine, supporting the hypothesis that homeopathic dilutions may act through modulation of cell receptors and protein synthesis. Khuda-Bukhsh's works speak of similar effect as he proposes a model whereby the dilutions bring about repair of chromosomes and sperm head morphology in mice through regulation of genetic activity.³⁶⁶ In support of this hypothesis, is a study that reveals that in presence of a transcription blocker, Actinomycin D, potentized homeopathic medicines failed to act.³⁶⁷ Another theory that Majewsky et al postulates, as a result of reported positive effects of potentised 'plant growth substances' or 'plant hormones', is that homeopathic medicines act through hormonal stimulation. Since even stronger responses were observed in basic research animal models after application of potentised animal hormones, one might setup the hypothesis, that human hormones – unknown at Hahnemann's times – might be promising substances for human homeopathic therapy.³⁶⁸

prepared thyroxine on highland frogs: influence of electromagnetic fields. *Homeopathy* 2008; 97: 3-9.

³⁵⁷ Anagnostatos GS. Small water clusters clathrate in the preparation process of homeopathy. In: Endler PC, Schulte J (eds). *Ultra High Dilution*. Dordrecht: Kluwer Acad. Publ., 1994, p. 121-128.

³⁵⁸ Preparata G. Regimi coerenti in Fisica e Biologia. In: *Il problema della forma*. Biology Forum, 1997; 434e436.

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³⁶¹ Milgrom LR. Patient-practitioner-remedy (PPR) entanglement. Part 1: a qualitative, non-local metaphor for homeopathy based on quantum theory. *Homeopathy* 2002; 91: 239-248.

³⁶² Walach H. Entanglement model of homeopathy as an example of generalized

entanglement predicted by weak quantum theory. *Forsch Komplementarmed Klass Naturheilkd* 2003; 10: 192-200

³⁶³ Davenas E, Beauvais F, Amara J, et al. Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature* 1988; 333: 816-818.

³⁶⁴ Bellavite P., Marzotto M., Debora Olivos D., Elisabetta Moratti E. and Anita Conforti A.; High-dilution effects revisited 2: Pharmacodynamic mechanisms; *Homeopathy* (2014) 103, 22-43

³⁶⁵ Poitevin B, Davenas E, Benveniste J. In vitro immunological degranulation of human basophils is modulated by lung histamine and *Apis mellifica*. *Br J Clin Pharmacol* 1988; 25: 439-444.

³⁶⁶ Anisur Rahman Khuda-Bukhsh; Mice as a model for homeopathy research; *Homeopathy* (2009) 98, 267-279

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³⁶⁸ Majewsky V. et al; Use of homeopathic preparations in experimental studies with healthy plants; *Homeopathy* (2009) 98, 228-243

Challenges

Sensitive nature of basic research experiments

It has, however, been pointed out that the effects described in many basic research experiments in homeopathy are difficult to reproduce because the experiments are markedly affected by minimal technical differences and conditions, including the skill of the operator, the type of blood donors, the season and the day of the experiment, perhaps atmospheric pressure, the electromagnetic 'pollution' of the laboratory, the time left between a dilution and the subsequent, and similar factors.

In addition to these methodological problems, the 'ingredients' of the homeopathic HDs may vary due to trace compounds present in the triturations and in water solutions used to make the remedies and to different methods of succussion and storage of solutions.³⁶⁹ In order to provide strong evidence in favour of homeopathic dilutions and identify their specific effects, it is important to demonstrate the absence of false-positive effects arising from the influence of laboratory or ambient conditions. For this reason, it is necessary to perform systematic negative control experiments.³⁷⁰ A review of *in vitro* researches, Witt et al suggest that to prove that high potencies have a specific effect, they should only differ from controls in being a potentized stock preparation.³⁷¹

Interestingly, the sensitive nature of homeopathic preparations is also revealed by a pilot study that has suggested the blocking effect of certain magnetic fields, such as microwave oven and cell phone derived fields on homeopathic preparations of T4.³⁷² This further emphasises the need of environment controlled

experiments under strict conditions for best reproducible results.

The 'similia' principle

There is a need to explain the 'similia' principle through experimentation. The Similia Principle has been discussed in mainstream biomedicine in relation to hormesis, in which an originally toxic substance is said to become a stimulating agent at low concentration. There is adequate evidence in support of the phenomenon of hormesis.^{373,374,375} Hormesis is not limited to chemical substances. The hormetic effect via low doses of ionizing radiation has also been confirmed.³⁷⁶ Calabrese et al introduced the term 'post-conditioning hormesis' to indicate the possibility that small stimuli could exert a beneficial effect when applied to cells or organisms even after a severe stress.³⁷⁷ The new field of 'post-conditioning hormesis' is not only a new development with possible important biomedical implications for patient treatment, it also brings hormesis and the homeopathic similia principle closer together. However, the discussion of hormesis with reference to homeopathy has raised many unsolved questions. Hormesis acts at concentrations much higher than those typically used in homeopathy and avoid the problem of ultra high-dilutions that (theoretically) do not contain a single molecule of the original substance. Contrary to homeopathy, hormesis also does not need any special technique to prepare the 'active agent'. Therefore, more research needs to be done to further explore the connection between the concept of hormesis and pharmacodynamics of homeopathic dilutions which comes into action on the basis of similia.

³⁶⁹ Bellavite P., Marzotto M., Oliosio D., Moratti E. and Conforti A.; High-dilution effects revisited 1: Physicochemical aspects; *Homeopathy* (2014) 103, 4-21

³⁷⁰ Betti L.; Use of homeopathic preparations in phytopathological models and in field trials: a critical review; *Homeopathy* (2009) 98, 244-266

³⁷¹ Witt C.M., Bluth M., Albrecht H., Weißhuhn T.E.R., Baumgartner S., Willich S.N.; The *in vitro* evidence for an effect of high homeopathic potencies—A systematic review of the literature; *Complementary Therapies in Medicine* (2007) 15, 128-138

³⁷² Weber S., Endler PC., Welles SU, et al. The effect of homeopathically prepared thyroxine on highland frogs: influence of electromagnetic fields. *Homeopathy* 2008; 97: 3-9.

³⁷³ Neafsey PJ. Longevity hormesis. A review. *Mech Ageing Dev* 1990;51(1): 1-

31.

³⁷⁴ Calabrese EJ, Baldwin LA. Defining hormesis. *Hum Exp Toxicol*;2002; 21(2): 91-97.

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³⁷⁶ Luckey TD. Hormesis with ionizing radiation. Boca Raton: CRC Press Inc., 1980, pp 1-222.

³⁷⁷ Calabrese EJ, Bachmann KA, Bailer AJ, et al. Biological stress response terminology: integrating the concepts of adaptive response and preconditioning stress within a hormetic dose-response framework. *Toxicol Appl Pharmacol* 2007; 222(1): 122-128.

Overview

Data analysis of 1868 entries in basic research database, HomBRex (<http://www.carstens-stiftung.de/hombrex>), revealed that most publications on basic research were reported from France (n = 267), followed by Germany (n = 246) and India (n = 237). In the last ten years, the number of publications from Brazil dramatically increased from n = 13 (before 2004) to n = 164 (compared to n = 251 published in France before 2004, and n = 16 between 2004 and 2013). The oldest database entry was from Germany (1832)³⁷⁸.

Conclusion

A general adoption of succussed controls, randomization and blinding would strengthen the evidence of further experiments. More replications should be done independently to establish models that are stable across laboratories and teams. As the knowledge of the dynamic processes within living organisms and of various phenomena in the environment that influence these organisms advances, the understanding of the physicochemical and pharmacodynamics aspects of Homeopathy will grow further.

New results since 2007: references

2008 – 63rd IMHI Congress' proceedings

Costa BGB, Siqueira CM, Barbosa GM, Portela MB, Soares RMA, Holandino C. Development of a new biotherapeutic of *Candida Albicans* to the treatment of oral candidiasis using yeast cells cultures, placebo and Nystatin® controlled design./

Siqueira CM, Costa B, Amorim AM, Conzálvez M, Veiga VF, Lyrio C, Couceiro JN, Holandino C. Looking for a new biotherapeutic prepared from infectious influenza virus: an in

vitro study. Virus H3N2, MDCK cells cultures, antiviral activity. Other references.^{379, 380, 381}

The peer reviewed journal *Homeopathy* (144), published two special issues on biological models of homeopathy in 2009 and 2010 and concluded as such: "Above all this field is exciting and dynamic: there is a remarkable range of biological models of relevance to homeopathy, with encouraging progress in terms of quality and a growing number of positive findings. And we have not covered all the models in depth: for instance the work of Christian Doutremepuich's group on the effects of dilution of aspirin on blood clotting, the subject of several repetitions, is discussed only briefly. The replicability of experiments is a crucial criterion for their credibility. The multinational group led by Christian Endler and involving coauthors from Austria, Switzerland and Brazil address in this issue their bibliometric study of repetitions of fundamental research models. They found that 24 experimental models have been repeatedly investigated, 22 with similar inter-experiment results. They classify repetitions according to whether they came from the same group as the original report, or multicentre or independent work; and results as positive and similar, positive but qualitative different or negative. The most frequently and consistently replicable model is inhibition of basophil activation by high dilutions of histamine. But as Madeleine Ennis shows significant methodological issues remain. Methods vary between laboratories, although the same can be said of conventional studies. She suggests that following standardization another multicentre experiment be performed."

Once again results are very encouraging and are able to reach a significant evidence level, but more systematic standardized research is needed.

Medicine Nobel Prize winner Prof Luc Montagnier, does not hesitate now to support the idea of information

³⁷⁸ Clausen J., Wijk R.v. and Albrecht H.; Geographical and temporal distribution of basic research experiments in *Homeopathy*; *Homeopathy* (2014) 103, 193-197

³⁷⁹ Bresler A, Hawkins D, Razlog R, Abrahamse H. Effect of Low Level Laser Therapy and *Calendula officinalis* 3CH on Wound Healing in Human Skin Fibroblasts. *Indian Journal of Research in Homeopathy*. April-June 2008; Vol 2, n°2:7-15.

³⁸⁰ Almeida LR, Campos MCO, Herrera HM, Bonamin LV, Fonseca AH. Effects of

homeopathy in mice experimentally infected with *Trypanosoma cruzi*. *Homeopathy*. 2008;97:65-69.

³⁸¹ Almeida JD, Arisawa EAL, Balducci I, Rocha RF, Carvalho YD. Homeopathic treatment for bone regeneration: experimental study on rats. *Homeopathy*. 2009;98:92-96.

transmitted through water solvent. This is the result of his findings published already in *Interdiscip Sci Comput Life Sci* (2009) 1:81-90 "Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences". In Strasburg, during the Congress "Homeopathy, a chance for Europe" (May 2010) he concluded: "Since 2005 we discovered that plasma from patients suffering of chronic degenerative diseases

can emit low frequencies electromagnetic signals at high dilutions in water corresponding to the same frequencies of bacteria's DNA. These findings are confirming the idea of Water Memory and previous results obtained with, as example, the basophil activation model." At the XXIV GIRI symposium in Monaco (Nov. 2010) he presented also a second publication: *Electromagnetic Detection of HIV DNA in the Blood of AIDS Patients Treated by Antiretroviral Therapy*. *Interdiscip Sci Comput Life Sci*. 2009;1: 245–253 and he concluded that there is a highly sensitive detection system for chronic bacterial infections in human beings and animals. He also noted that serial dilution and agitation have found to be critical for the generation of electromagnetic signals.

A new area for research is now very active in laboratories in the world about the use of Homeopathy in viral infections? A first result has been published in 2010. Bhaswati Bandyopadhyay & all. Decreased intensity of Japanese Encephalitis virus infection in chick chorioallantoic membrane under influence of ultradiluted Belladonna extract.

Indian Journal of Research in Homeopathy. Vol 4, N°2, April-June 2010.

2011 – New publications

EEG as control of the effects of homeopathic medicines! Totally independently of each other, two teams arrived to a

similar conclusion; EEG can be a very objective "control tool" for the effects of homeopathic medicines. The first team³⁸² could demonstrate objective and specific changes in EEG of healthy volunteers during drug provings and the second team³⁸³ did the same in laboratory rats; the effect of the homeopathic medicines are comparable to the effects of neurologic conventional drugs.

Guedes JRP, Carrasco S, Ferreira CM, Bonamin LV, Souza W, Goldenstein-Schainberg C. Ultra High Dilution of Triiodothyronine (T3 10CH) modifies cellular apoptosis in *Rana catesbeiana* tadpole tail in vitro. *Homeopathy* (2011) 100, 220-227.

2013 – New publications

In a replication of the experiments on extremely diluted thyroxine and highland amphibians, obtained results are in line with the previous experiments. Harrer B. *Homeopathy* (2013) 102:25-30.

1. Saha S, Hossain DMS, Mukherjee S, Mohanty S, Mazumdar M, Mukherjee S, et al. *Calcarea carbonica induces apoptosis in cancer cells in p53-dependent manner via an immuno-modulatory circuit*. *BMC Complement Altern Med*. 2013;13:230.
 - The findings of the study indicated a "two-step" mechanism of the induction of apoptosis in tumor cells by *Calcarea carbonica* i.e., activation of the immune system of the host; and induction of cancer cell apoptosis via immuno-modulatory circuit in p53-dependent manner by down-regulating Bcl-2:Bax ratio. The observations delineate the significance of immuno-modulatory circuit during *Calcarea carbonica* mediated tumor apoptosis.
2. Betti L, Zurla M, Trebbi G, Brizzi M, Borghini G, Borghini F. *Extremely low doses of arsenic affect in vitro*

³⁸²Bell IR & all. Short-term effects of repeated olfactory administration of homeopathic Sulphur or Pulsatilla on electroencephalographic alpha power in healthy young adults. *Homeopathy* (2011) 100, 203-211.

³⁸³Dimpfel W, Biller A. In vivo and in vitro neurophysiological findings in the rat in the presence of Coffea D6, Gelsemium D4 and Veratrum D6 extracts. 2012 in publication. / Dimpfel W. Homeopathy in the light of state of the art experimental setups. A comparison between the effects of a homeopathic medicine Neurexan and conventional neurologic drugs such as Diazepam, Fentanyl, Haloperidol etc. 2012 in publication. / Dimpfel W, Dalhoff B, Hofmann W, Schlüter G. Electrically evoked potentials in the rat hippocampus slice in the presence of aminophylline alone

and in combination with quinolones. *European Neuropsychopharmacology*. 1994; 4:151–56. / Dimpfel W Effects of memantine on synaptic transmission in the hippocampus in vitro. *Arzneimittelforschung*. 1995; 45:1-5. Dimpfel W. Preclinical data base of pharmaco-specific rat EEG fingerprints (tele-stereo-EEG). *Eur J Med Res*. 2003; 8:199-207. / Dimpfel W, Hoffmann JA. Electropharmacograms of Rasagiline, Its Metabolite Aminoindan and Selegiline in the Freely Moving Rat. *Neuropsychobiol*. 2010; 62:213–220. / Dimpfel W, Hoffmann JA. Effects of rasagiline, its metabolite aminoindan and selegiline on glutamate receptor mediated signalling in the rat hippocampus slice in vitro. *BMC Pharmacol*. 2011; 11:2.

- pollen germination. Forsch Komplementmed. 2013;20:254-60.**
- The findings of this study seem to indicate the in vitro pollen performance as adequate to study the effects of physicochemical sub-threshold stimuli (extremely low doses or high dilutions of pharmacological compounds, weak extremely low frequency magnetic fields), mediated through water.
- 3. de Lima LF, Rocha RMP, Alves AMCV, Saraiva MVA, Araújo VR, Lima IMT. Dynamized follicle-stimulating hormone affects the development of ovine preantral follicles cultured in vitro. Homeopathy 2013;102:41-8.**
 - FSH 6cH (24 h) treatment maintained the viability, and promoted the activation and in vitro growth of ovine pre-antral follicles.
 - 4. Harrer B. Replication of an experiment on extremely diluted thyroxine and highland amphibians. Homeopathy 2013;102:25-30.**
 - The number of animals entering the juvenile stage with reduced tail was smaller for thyroxine (T30x) than for control water (W30x). There was a clear trend of T30x animals developing more slowly than W30x animals.
 - 5. Siqueira CM, Costa B, Amorim AM, Gonçalves M, da Veiga VF, Castelo-Branco M, et al. H3N2 homeopathic influenza virus solution modifies cellular and biochemical aspects of MDCK and J774G8 cell lines. Homeopathy 2013;102:31-40.**
 - Influenzinum 30dH was found to alter cellular and biochemical features of Madine Darby Canine Kidney (MDCK) and J774G8 cells.
 - 6. Bell IR, Koithan M, Brooks AJ. Testing the nanoparticle-allostatic cross-adaptation-sensitization model for homeopathic remedy effects. Homeopathy 2013;102:66-81.**
 - Homeopathic treatment is a form of nanomedicine acting by modulation of endogenous adaptation and metaplastic amplification processes in the organism to enhance long-term systemic resilience and health.
 - 7. de Camargo, da Costa ED, Catisti R. Effect of the oral administration homeopathic Arnica montana on mitochondrial oxidative stress. Homeopathy 2013;102:49-53.**
 - When administrated orally, Arnica 30cH protects against hepatic mitochondrial membrane permeabilization induced by Ca^{2+} and/or Fe^{2+} -citrate-mediated lipid peroxidation and fragmentation of proteins due to the attack by reactive oxygen species.
 - 8. Demangeat JL. Nanosized solvent superstructures in ultramolecular aqueous dilutions: twenty years' research using water proton NMR relaxation. Homeopathy 2013;102:87-105.**
 - Proton Nuclear Magnetic Resonance (NMR) relaxation demonstrated modifications of the solvent throughout the low to ultramolecular range of dilution and suggested the existence of superstructures that originate stereospecifically around the solute after an initial destructuring of the solvent, developing more upon dilution and persisting beyond 12c.
 - 9. Sampath S, Narasimhan A, Chinta R, KR Nair KRJ, Khurana A, Nayak D, et al. Effect of homeopathic preparations of Syzygium jambolanum and Cephalandra indica on gastrocnemius muscle of high fat and high fructose-induced type-2 diabetic rats. Homeopathy 2013;102, 160-71.**
 - In this study, homeopathic preparations of S. jambolanum and C. indica, including ultramolecular dilutions exhibit antidiabetic effects, improving insulin action through activation of insulin signaling molecules in skeletal muscle of type-2 diabetic rats.
 - 10. Jyothilakshmi V, Thellamudhu G, Kumar A, Khurana A, Nayak D, Kalaiselvi P. Preliminary investigation on ultra high diluted B. vulgaris in experimental urolithiasis. Homeopathy 2013;102: 172-8.**
 - Homeopathic B. vulgaris root bark was found to have strong anti-urolithiasis potential at ultra-diluted dose in experimental rats.
 - 11. Arora S, Aggarwal A, Singla P, Jyoti S, Tandon S. Anti-proliferative effects of homeopathic medicines on**

- human kidney, colon and breast cancer cells. **Homeopathy 2013;102:274-82.**
- This study provides preliminary laboratory evidence indicating the ability of homeopathic medicines as anticancer agents in the forms of mother tincture, and ultramolecular dilution (30C, 200C, 1M and 10M) against cell lines deriving from tumors of particular organs, Sarsaparilla (Sars) on ACHN cells (human renal adenocarcinoma), Ruta graveolens (Ruta) on COLO-205 (human colorectal carcinoma), and Phytolacca decandra (Phyto) on MCF-7 (human breast carcinoma).
- 12. ahata CR. Dielectric dispersion studies of some potentized homeopathic medicines reveal structured vehicle. Homeopathy (2013) 102, 262-7.**
- The range of resonance frequencies originated from the 6c and 30c potencies of Graphites and Cuprum metallicum in liquid form suggest that dielectric dispersion might originate from oscillation of dipoles caused by electric field in variously structured and polarised water. Also, there is reasonable evidence that frequencies change with materials and potency.
- 13. Huh YH, Kim MJ, Yeo MG. Homeopathic Rhus toxicodendron treatment increased the expression of cyclooxygenase-2 in primary cultured mouse chondrocytes. Homeopathy 2013;102:248-53.**
- Homeopathic treatment with Rhus tox 4X, 30X and 30c induced chondrocyte dedifferentiation and inflammatory responses, such as COX-2 expression and PGE2 production, in primary cultured chondrocytes.
- 14. Pal A, Misra BB, Das SS, Gauri SS, Patra M, Dey S. Antidiabetic effect of Cephalandra indica Q in diabetic rats. Ind J Res Hom. 2013;7(2):81-90.**
- The present study clearly indicates a significant anti-diabetic effect of Cephalandra indica mother tincture and potencies on blood glucose level, cholesterol level, body weight, and beta-cells of pancreatic islets of Langerhans, in streptozotocin (STZ)-induced diabetic Wistar rats and lend support for its usage as a homeopathic medicine.
- 15. Korukanti VP, Ponnamm H, Akondi BR. Evaluation of antiobesity activity of Fucus vesiculosus. Ind J Res Hom. 2013;7(3):126-32.**
- Fucus vesiculosus treatment prevented the adult female Wistar albino rats from becoming obese and the biochemical and physical parameters were maintained to normal levels.
- 16. Ghosh S, Bishayee K, Paul A, Mukherjee A, Sikdar S, Chakraborty D, et al. Homeopathic mother tincture of Phytolacca decandra induces apoptosis in skin melanoma cells by activating caspase-mediated signaling via reactive oxygen species elevation. J Integr Med. 2013; 11(2): 116-124.**
- The study demonstrated anticancer potentials of ethanolic extract of Phytolacca decandra on A375 cells through activation of caspase-mediated signaling and ROS generation.
- 17. Mukherjee A, Boujedaini N, Khuda-Bukhsh AR. Homeopathic Thuja 30C ameliorates benzo(a)pyrene-induced DNA damage, stress and viability of perfused lung cells of mice in vitro. J Integr Med. 2013;11(6):397-404.**
- Thuja 30C ameliorates benzo(a)pyrene induced toxicity, stress and DNA damage in perfused lung cells of mice and it apparently has no effect on normal lung cells.
- 18. Csupor D, Boros K, Hohmann J. Low potency homeopathic remedies and allopathic herbal medicines: is there an overlap? PLoS ONE 2013;8(9):e74181.**
- Homeopathic products containing active agents in allopathic doses should be treated the same way as allopathic medicines from the point of view of quality assurance and pharmacovigilance.
- 19. Soumyajit Maiti, Kazi M. Ali, Kishalay Jana, Kausik Chatterjee, Debasis De, and Debidas Ghosh. Ameliorating effect of mother tincture of Syzygium jambolanum on carbohydrate and lipid metabolic disorders in streptozotocin-induced diabetic rat: Homeopathic remedy. J Nat Sci Biol Med. 2013;4(1):68-73.**

- The homeopathic drug *Syzygium jambolanum* mother tincture has a protective effect on diabetic induced carbohydrate and lipid metabolic disorders in streptozotocin-induced diabetic Wistar rats.
20. **Samadder A, Das S, Das J, Paul A, Boujedaini N, Khuda-Bukhsh AR. The potentized homeopathic drug, *Lycopodium clavatum* (5C and 15C) has anti-cancer effect on hela cells in vitro. J Acupunct Meridian Stud. 2013;6(4):180-7.**
 - The highly-diluted, dynamized homeopathic remedies *Lycopodium clavatum* 5C and 15C demonstrated their capabilities to induce apoptosis in cancer (HeLa) cells, which was evident from the induction of DNA fragmentation, the increases in the expressions of protein and mRNA of caspase 3 and Bax, and the decreases in the expressions of Bcl2 and Apaf and in the release of cytochrome-c, signifying their possible use as supportive medicines in cancer therapy.
 21. **Rajan A, Bagai U. Antimalarial potential of China 30 and Chelidonium 30 in combination therapy against lethal rodent malaria parasite: *Plasmodium berghei*. J Complement Integr Med. 2013;7:10.**
 - Findings of the study point to the significant antiplasmodial and preventive efficacy of the combination of homeopathic drugs *Cinchona officinalis* 30C and *Chelidonium majus* 30C against *Plasmodium berghei*.
 22. **Bishayee K, Paul A, Ghosh S, Sikder S, Mukherjee A, Biswas R, Boujedaini N, Khuda-Bukhsh AR. Condurango-glycoside - a fraction of *Gonolobus condurango* induces DNA damage associated senescence and apoptosis via ROS-dependent p53 signalling pathway in HeLa cells. Mol Cell Biochem. 2013;382(1-2):173-83.**
 - Condurango-glycoside-A initiates ROS generation, promoting up-regulation of p53 expression, thus resulting in apoptosis and pre-mature senescence associated with DNA damage in cervix carcinoma cells (HeLa).
 23. **Lenger K, Bajpai RP, Spielmann M. Identification of unknown homeopathic remedies by delayed luminescence. Cell Biochem Biophys. 2013[Epub ahead of print].**
 - Six unknown homeopathic remedies could be identified as increasing potency levels of *Argentum metallicum* from 100MK to 1.000MK which indicates a calibration curve. A quality control of homeopathic remedies is possible by comparing the different B_2 -values of Bajpai's equation derived from the Hamiltonian equation of the remedies and their carrier substances.
 24. **Nitzsche D, Melziq MF, Arlt VM. Evaluation of the cytotoxicity and genotoxicity of aristolochic acid I - a component of Aristolochiaceae plant extracts used in homeopathy. Environ Toxicol Pharmacol. 2013;35(2):325-34.**
 - The medicinal plants *Aristolochia clematitis* and *Asarum europaeum*. The mother tinctures of the drugs inhibited DNA synthesis in human hepatoma HepG2 cells in a dose-dependent manner. One of the components of the plant extract, aristolochic acid I (AAI), is linked to the development of nephropathy and urothelial cancer in humans. Therefore the cytotoxicity and genotoxicity of AAI in HepG2 cells were evaluated. Cell proliferation was inhibited concentration-dependently by AAI using BrdU-ELISA and colony forming assay. AAI formed DNA adducts (measured by (32)P-postlabeling), induced chromosomal aberrations (micronuclei) and DNA strand breaks. DNA damage induced by AAI led to an arrest of cells in the S-phase which was associated with the increased expression of p53 and p21 proteins.
 25. **Bell IR, Schwartz GE. Adaptive network nanomedicine: an integrated model for homeopathic medicine. Front Biosci (Schol Ed). 2013;5:685-708.**
 - Homeopathic remedies act by stimulating hormetic adaptive rather than conventional pharmacological effects. Updating terminology from "homeopathy" to "adaptive network nanomedicine" reflects the integration of this historical but controversial medical system with modern scientific findings.

26. Chakraborty D, Ghosh S, Bishayee K, Mukherjee A, Sikdar S, Khuda-Bukhsh AR. Antihyperglycemic drug *Gymnema sylvestre* also shows anticancer potentials in human melanoma A375 cells via reactive oxygen species generation and mitochondria-dependent caspase pathway. *Integr Cancer Ther.* 2013;12(5):433-41.
 - The study findings indicate *Gymnema sylvestre* to have significant anticancer effect on A375 cells (human skin melanoma) apart from its reported anti-diabetic effect, indicating possibility of its palliative use in patients with symptoms of both the diseases.
27. Chakraborty I, Sukul NC, Mesripong R, Chaothanaphat N, Dhummaupakorn P, Sukul A. High dilutions of homeopathic remedies induce relaxation of rat aorta precontracted with Noradrenalin. *Int J High Dilution Res.* 2013; 12(43):44-51.
 - Both *Lycopus virginicus* 30 CH and *Aurum metallicum* 30 CH were found effective in reducing nor-adrenalin induced contraction of rat aorta.
28. Saha SK, Roy S, Khuda-Bukhsh AR. Evidence in support of gene regulatory hypothesis: Gene expression profiling manifests homeopathy effect as more than placebo. *Int J High Dilution Res.* 2013; 12(45):162-167.
 - Results indicate that action of the potentized drugs *Condurango* 30c and *Hydrastis canadensis* 30C used in the treatment of cancer was “more than placebo” and these ultra-highly diluted drugs acted primarily through modulation of gene expression.

2014-16: New publications

EXPLORING THE EFFECTS OF HOMEOPATHIC APIS MELLIFICA PREPARATIONS ON HUMAN GENE EXPRESSION PROFILES

Journal reference: *Homeopathy.* 2014 Apr;103(2):127-32

Authors: Bigagli E., Luceri C., Bernardini S., Dei A., Filippini A. and Dolara P.

Summary: Diluted preparations obtained from *Apis mellifica* are reported in the homeopathic literature to have anti-inflammatory activity. The study was designed to explore the effects on global gene expression profiles of human cells by means of microarrays, using *Apis mellifica* mother tincture (TM) and its 3C, 5C, 7C dynamized dilutions; the technique employed allowed us to study the changes in gene expression at concentrations much lower than those associated with pharmacological responses. An RWPE-1 cell line (human immortalized prostate epithelial cells) was used to study the effects on global gene expression by transcriptomic analysis. *Apis mellifica* TM and its 3C, 5C, 7C dynamized dilutions modulated hundreds of genes; using cluster

analysis we observed groups of genes up- or down-regulated with similar expression profiles among treatments; other genes showed opposite regulation profiles at low and high dilutions of *Apis mellifica*, suggesting a hormetic response. In particular, genes involved in cytokine expression, inflammatory processes, anti-oxidative responses and proteasome degradation were differentially, and sometimes divergently expressed by the TM or by *Apis mellifica* 3C, 5C and 7C dilutions. The authors confirmed these data by RT-PCR analyses on 5 selected candidate genes (*IL1 β* , *CD46*, *ATF1*, *UBE2Q2* and *MT1X*). The authors concluded that *Apis mellifica* TM modifies gene expression in human cells and has inhibitory effects on regulatory processes of inflammation; in addition, extremely diluted dynamized dilutions (3C, 5C and 7C) still exert significant effects on genes involved in inflammation and oxidative stress.

EXTREME SENSITIVITY OF GENE EXPRESSION IN HUMAN SH-SY5Y NEUROCYTES TO ULTRA-LOW DOSES OF *GELSEMIUM SEMPERVIRENS*;

Journal reference: *BMC Complementary and Alternative Medicine* 2014, 14:104

Authors: Marzotto M., Olioso D., Brizzi M., Tononi P., Cristofolletti M. and Bellavite P.

Summary: This work investigates the gene expression of a human neurocyte cell line treated with increasing dilutions of Gelsemium s. extract. Starting from the crude extract, six 100 × (centesimal, c) dilutions of Gelsemium s. (2c, 3c, 4c, 5c, 9c and 30c) were prepared according to the French homeopathic pharmacopoeia. Human SH-SY5Y neuroblastoma cells were exposed for 24 h to test dilutions, and their transcriptome compared by microarray to that of cells treated with control vehicle solutions. Exposure to the Gelsemium s. 2c dilution (the highest dose employed, corresponding to a gelsemine concentration of 6.5×10^{-9} M) significantly changed the expression of 56 genes, of which 49 were down-regulated and 7 were overexpressed. Several of the down-regulated genes belonged to G-protein coupled receptor signaling pathways, calcium homeostasis, inflammatory response and neuropeptide receptors. Fisher exact test, applied to the group of 49 genes down-regulated by Gelsemium s. 2c, showed that the direction of effects was significantly maintained across the treatment with high homeopathic dilutions, even though the size of the differences was distributed in a small range. The authors concluded that the study shows that Gelsemium s., a medicinal plant used in traditional remedies and homeopathy, modulates a series of genes involved in neuronal function. A small, but statistically significant, response was detected even to very low doses/high dilutions (up to 30c), indicating that the human neurocyte genome is extremely sensitive to this regulation.

EFFECTS OF GELSEMIUM SEMPERVIRENS L. ON PATHWAY-FOCUSED GENE EXPRESSION PROFILING IN NEURONAL CELLS

Journal reference: Journal of Ethnopharmacology; 2014 Apr 28;153(2):535-9

Authors: Olioso D, Marzotto M, Moratti E, Brizzi M. and Bellavite P.

Summary: This study investigated for the first time by a real-time PCR technique (RT-PCR Array) the gene expression of a panel of human neurotransmitter

receptors and regulators, involved in neuronal excitatory signaling, on a neurocyte cell line. Human SH-SY5Y neuroblastoma cells were exposed for 24h to Gelsemium sempervirens at 2c and 9c dilutions (i.e. 2 and 9-fold centesimal dilutions from mother tincture) and the gene expression profile compared to that of cells treated with control vehicle solutions. Exposure to the Gelsemium sempervirens 2c dilution, containing a nanomolar concentration of active principle gelsemine, induced a down-regulation of most genes of this array. In particular, the treated cells showed a statistically significant decrease of the prokineticin receptor 2, whose ligand is a neuropeptide involved in nociception, anxiety and depression-like behavior. Overall, the results indicate a negative modulation trend in neuronal excitatory signaling, which can suggest new working hypotheses on the anxiolytic and analgesic action of this plant.

CONTRIBUTION OF THE ROS-P53 FEEDBACK LOOP IN THUJA-INDUCED APOPTOSIS OF MAMMARY EPITHELIAL CARCINOMA CELLS

Journal reference: Oncology Reports, Volume 31, Issue 4, 2014, Pages 1589-1598.

Authors: Saha S, Bhattacharjee P, Mukherjee S, Mazumdar M, Chakraborty S, Khurana A, Nayak D, Manchanda R, Chakrabarty R, Das T, Sa G.

Summary: In this study, the anti-tumorigenic activity of Thuja occidentalis was evaluated, and the molecular mechanisms underlying thuja-induced apoptosis of functional p53-expressing mammary epithelial carcinoma cells were elucidated. Results showed that thuja successfully induced apoptosis in functional p53-expressing mammary epithelial carcinoma cells. Abrogation of intracellular reactive oxygen species (ROS), prevention of p53-activation, knockdown of p53 or inhibition of its functional activity significantly abridged ROS generation. Notably, under these conditions, thuja-induced breast cancer cell apoptosis was reduced, thereby validating the existence of an ROS-p53 feedback loop. Elucidating this feedback loop revealed bi-phasic ROS

generation as a key mediator of thuja-induced apoptosis. The first phase of ROS was instrumental in ensuring activation of p53 via p38MAPK and its nuclear translocation for transactivation of Bax, which induced a second phase of mitochondrial ROS to construct the ROS-p53 feedback loop. Such molecular crosstalk induced mitochondrial changes to maintain and amplify the thuja signal in a positive self-regulatory feedback manner; and to promote the mitochondrial death cascade through cytochrome c release and caspase-driven apoptosis. These results open the horizon for developing a targeted therapy by modulating the redox status of functional p53-expressing mammary epithelial carcinoma cells by thuja.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/24482097>

EXPERIMENTAL EVIDENCE OF STABLE WATER NANOSTRUCTURES IN EXTREMELY DILUTE SOLUTIONS, AT STANDARD PRESSURE AND TEMPERATURE

Journal reference: Homeopathy, Volume 103, Issue 1, 2014, Pages 44-50.

Authors: Elia V, Ausanio G, Gentile F, Germano R, Napoli E, Niccoli M.

Summary: This paper presents the results of several experimental methods (FT-IR spectroscopy, UV-vis spectroscopy, fluorescence microscopy (FM), Atomic Force Microscopy (AFM)) evidencing structural changes induced in extremely diluted solutions (EDS), which are prepared by an iterated process of centesimal (1:100) dilution and succussion (shaking). The iteration is repeated until an extremely high dilution is reached, so that the composition of the solution becomes identical to that of the solvent – in this case water – used to prepare it. The experimental observations reveal the presence of supramolecular aggregates hundreds of nanometres in size in EDS at ambient pressure and temperature, and in the solid state. These findings confirm the hypothesis – developed thanks to previous physico-chemical

investigations – that formation of water aggregates occurs in EDS. The experimental data can be analyzed and interpreted with reference to the thermodynamics of far-from-equilibrium systems and irreversible processes.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/24439454>

HIGH-DILUTION EFFECTS REVISITED (1 & 2)

Journal reference: Homeopathy, Volume 103, Issue 1, 2014, Pages 22-43, 4-21.

Authors: Bellavite P, Marzotto M, Oliosio D, Moratti E, Conforti A.

Summary (Physiochemical aspects): Several lines of evidence suggest that homeopathic high dilutions (HDs) can effectively have a pharmacological action, and so cannot be considered merely placebos. However, until now there has been no unified explanation for these observations within the dominant paradigm of the dose-response effect. Here the possible scenarios for the physicochemical nature of HDs are reviewed. A number of theoretical and experimental approaches, including quantum physics, conductometric and spectroscopic measurements, thermoluminescence, and model simulations investigated the peculiar features of diluted/succussed solutions. The heterogeneous composition of water could be affected by interactive phenomena such as coherence, epitaxy and formation of colloidal nanobubbles containing gaseous inclusions of oxygen, nitrogen, carbon dioxide, silica and, possibly, the original material of the remedy. It is likely that the molecules of active substance act as nucleation centres, amplifying the formation of supramolecular structures and imparting order to the solvent. Three major models for how this happens are currently being investigated: the water clusters or clathrates, the coherent domains postulated by quantum electrodynamics, and the formation of nanoparticles from the original solute plus solvent components. Other theoretical approaches based on quantum entanglement and on

fractal-type self-organization of water clusters are more speculative and hypothetical. The problem of the physicochemical nature of HDs is still far from to be clarified but current evidence strongly supports the notion that the structuring of water and its solutes at the nanoscale can play a key role.

Summary (Pharmacodynamic mechanisms): The pharmacodynamics aspects of homeopathic remedies are appraised by laboratory studies on the biological effects at various levels (cellular, molecular and systemic). The major question is how these medicines may work in the body. The possible answers concern the identification of biological targets, the means of drug-receptor interactions, the mechanisms of signal transmission and amplification, and the models of inversion of effects according to the traditional 'simile' rule. These problems are handled by two experimental and theoretical lines, according to the doses or dilutions considered (low-medium versus high dilutions). Homeopathic formulations in low-medium dilutions, containing molecules in the range of ultra-low doses, exploit the extreme sensitivity of biological systems to exogenous and endogenous signals. Their effects are interpreted in the framework of hormesis theories and paradoxical pharmacology. The hypotheses regarding the action mechanisms of highly diluted/dynamized solutions (beyond Avogadro-Loschmidt limit) variously invoke sensitivity to bioelectromagnetic information, participation of water chains in signalling, and regulation of bifurcation points of systemic networks. High-dilution pharmacology is emerging as a pioneering subject in the domain of nanomedicine and is providing greater plausibility to the puzzling claims of homeopathy.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24439452>;

<http://www.ncbi.nlm.nih.gov/pubmed/24439453>

CURRENT CONCEPTS ON INTEGRATIVE SAFETY ASSESSMENT OF ACTIVE SUBSTANCES OF BOTANICAL, MINERAL OR CHEMICAL ORIGIN IN

HOMEOPATHIC MEDICINAL PRODUCTS WITHIN THE EUROPEAN REGULATORY FRAMEWORK

Journal reference: Regulatory Toxicology and Pharmacology, Volume 68, Issue 2, 2014, Pages 193-200.

Authors: Buchholzer ML, Werner C, Knoess W.

Summary: For active substances of botanical, mineral or chemical origin processed in homeopathic medicinal products for human use, the adequate safety principles as with other human medicinal products are applied in line with the European regulatory framework. In homeopathy, nonclinical safety assessment is facing a particular challenge because of a multitude and diversity of source materials used and due to rarely available toxicological data. Thus, current concepts applied by the national regulatory authority in Germany (BfArM) on integrative safety assessment of raw materials used in homeopathic medicinal products involve several evaluation approaches like the use of the Lowest Human Recommended Dose (LHRD), toxicological limit values, Threshold of Toxicological Concern (TTC), data from food regulation or the consideration of unavoidable environmental or dietary background exposure. This publication is intended to further develop and clarify the practical use of these assessment routes by exemplary application on selected homeopathic preparations. In conclusion, the different approaches are considered a very useful scientific and simultaneously pragmatic procedure in differentiated risk assessment of homeopathic medicinal products. Overall, this paper aims to increase the visibility of the safety issues in homeopathy and to stimulate scientific discussion of worldwide existing regulatory concepts on homeopathic medicinal products.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/24384395>

IDENTIFICATION OF UNKNOWN HOMEOPATHIC REMEDIES BY DELAYED LUMINESCENCE

Journal reference: Cell Biochemistry and Biophysics, Volume 68, Issue 2, 2014, Pages 321-334.

Authors:Lenger K, Bajpai RP, Spielmann M.

Summary:A quality control method of highly diluted and potentized homeopathic remedies is important for curing patients applying homeopathic therapy. Lenger detected photons in highly potentized homeopathic remedies by delayed luminescence. The photons of Argentum metallicum 100MK and Cantharis 100MK magnetically bound to their carrier substances ethanol or saccharose were separated by their resonating magnetic field of about 2.06 MHz. The photons of these 100MK potency levels and of their reference substances were determined to be standard values calculated by the B2-values of Bajpai's equation derived from the Hamiltonian equation. The stability of ethanolic Argentum metallicum 100MK and Cantharis 100MK declined to 1/3 of their photons within a month in contrast to saccharose globules with Argentum metallicum 100MK having been stable during the period of these investigations for almost 1 year. Some remedies delivered as CMK potency had been proved to be ethanol. The testing amount of high ethanolic potencies is limited to 40 µl because 80 µl resulted in an attenuation of the photons; 40 µl equal 16 medicated saccharose globules. Six unknown homeopathic remedies could be identified as increasing potency levels of Argentum metallicum from 100MK to 1.000MK which indicates a calibration curve. The homeopathic factories having sent the unknown remedies confirmed the measurements. A quality control of homeopathic remedies is possible by comparing the different B2-values of the remedies and their carrier substances.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/23872840>

INTER-GROUP TRANSFER OF ANTI-ALCOHOLIC EFFECT OF NUX VOMICA 200 CH THROUGH THE BODY OF A LIVE TOAD

Journal reference: International Journal of High Dilution Research, Volume 13, Issue 46, 2014, Pages 3-12.

Authors: Chakraborty I, Sukul NC, Sukul A, Chakravarty R.

Summary: Using a toad model, the authors demonstrated that the anti-alcoholic effect of Nux vomica 200 cH could be transferred from one group of toads to another through capillary water carrying the information of Nux-v. Homeopathic potencies show UV spectra distinct from the hydro-ethanolic diluent medium. The authors intended to demonstrate that a potency effect might be transferred through the body of a live toad to other groups of toads connected to it through water. In addition, they sought to establish whether the UV spectra of the drug solution and the water connected to the drug are similar in nature. The anti-alcoholic effect of Nux-v 200 cH could be transferred through the body of a live toad to other groups of toads. The drug did not undergo denaturation during its passage through the living body. The fact that water carries the information of the original drug was further evidenced by the spectral properties of the water connected to the drug solution through capillary water.

Source:<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/684/689>

RAD50 TARGETING IMPAIRS DNA DAMAGE RESPONSE AND SENSITIZES HUMAN BREAST CANCER CELLS TO CISPLATIN THERAPY

Journal reference: Cancer Biology and Therapy, Volume 15, Issue 6, 2014.

Authors: Flores-Pérez A, Echarte Rafaelli L, Ramírez-Torres N, Aréchaga-Ocampo E, Frías S, Sánchez S, Marchat LA, Hidalgo-Miranda A, Quintanar-Jurado V,

Rodríguez-Cuevas S, Bautista-Piña V, Carlos-Reyes A, López-Camarillo C.

Summary: In tumor cells, the effectiveness of anti-neoplastic agents that cause cell death by induction of DNA damage is influenced by DNA repair activity. RAD50 protein plays key roles in DNA double strand breaks repair (DSBs), which is crucial to safeguard genome integrity and sustain tumor suppression. However, its role as a potential therapeutic target has not been addressed in breast cancer. The authors aimed to analyze the expression of RAD50 protein in breast tumors, and evaluate the effects of RAD50-targeted inhibition on the cytotoxicity exerted by cisplatin and anthracycline and taxane-based therapies in breast cancer cells. Immunohistochemistry assays on tissue microarrays indicate that the strong staining intensity of RAD50 was reduced in 14% of breast carcinomas in comparison with normal tissues. Remarkably, RAD50 silencing by RNA interference significantly enhanced the cytotoxicity of cisplatin. Combinations of cisplatin with doxorubicin and paclitaxel drugs induced synergistic effects in early cell death of RAD50-deficient MCF-7, SKBR3, and T47D breast cancer cells. Furthermore, the authors found an increase in number of DSBs, and delayed phosphorylation of histone H2AX after cisplatin treatment in RAD50-silenced cells. These cellular events were associated to a dramatical increase in the frequency of chromosomal aberrations and decrease of cell number in metaphase. Data showed that RAD50 abrogation impairs DNA damage response and sensitizes breast cancer cells to cisplatin-combined therapies. Development and use of inhibitors to manipulate RAD50 levels might represent a promising strategy to sensitize breast cancer cells to DNA damaging agents.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24642965>

EXTREME SENSITIVITY OF GENE EXPRESSION IN HUMAN SH-SY5Y NEUROCYTES TO ULTRA-LOW DOSES OF GELSEMIUM SEMPERVIRENS

Journal reference: BMC Complementary and Alternative Medicine, Volume 14, 2014, Pages 104.

Authors: Marzotto M, Oliosio D, Brizzi M, Tononi P, Cristofolletti M, Bellavite P.

Summary: Gelsemium sempervirens L. (Gelsemium s.) is a traditional medicinal plant, employed as an anxiolytic at ultra-low doses and animal models recently confirmed this activity. However the mechanisms by which it might operate on the nervous system are largely unknown. This work investigates the gene expression of a human neurocyte cell line treated with increasing dilutions of Gelsemium s. extract. Starting from the crude extract, six 100x (centesimal, c) dilutions of Gelsemium s. (2c, 3c, 4c, 5c, 9c and 30c) were prepared according to the French homeopathic pharmacopoeia. Human SH-SY5Y neuroblastoma cells were exposed for 24 h to test dilutions, and their transcriptome compared by microarray to that of cells treated with control vehicle solutions. Exposure to the Gelsemium s. 2c dilution (the highest dose employed, corresponding to a gelsemine concentration of 6.5×10^{-9} M) significantly changed the expression of 56 genes, of which 49 were down-regulated and 7 were overexpressed. Several of the down-regulated genes belonged to G-protein coupled receptor signaling pathways, calcium homeostasis, inflammatory response and neuropeptide receptors. Fisher exact test, applied to the group of 49 genes down-regulated by Gelsemium s. 2c, showed that the direction of effects was significantly maintained across the treatment with high homeopathic dilutions, even though the size of the differences was distributed in a small range. The study shows that Gelsemium s., a medicinal plant used in traditional remedies and homeopathy, modulates a series of genes involved in neuronal function. A small, but statistically significant, response was detected even to very low

doses/high dilutions (up to 30c), indicating that the human neurocyte genome is extremely sensitive to this regulation.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/24642002>;

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3999908/pdf/1472-6882-14-104.pdf>

EFFECTS OF GELSEMIUM SEMPERVIRENS L. ON PATHWAY-FOCUSED GENE EXPRESSION PROFILING IN NEURONAL CELLS

Journal reference: Journal of Ethnopharmacology, Volume 153, Issue 2, 2014, Pages 535- 539.

Authors: Olivos D, Marzotto M, Moratti E, Brizzi M, Bellavite P.

Summary: This study investigated by a real-time PCR technique (RT-PCR Array) the gene expression of a panel of human neurotransmitter receptors and regulators, involved in neuronal excitatory signaling, on a neurocyte cell line. Human SH-SY5Y neuroblastoma cells were exposed for 24h to Gelsemium sempervirens at 2c and 9c dilutions (i.e. 2 and 9-fold centesimal dilutions from mother tincture) and the gene expression profile compared to that of cells treated with control vehicle solutions. Exposure to the Gelsemium sempervirens 2c dilution, containing a nanomolar concentration of active principle gelsemine, induced a down-regulation of most genes of this array. In particular, the treated cells showed a statistically significant decrease of the prokineticin receptor 2, whose ligand is a neuropeptide involved in nociception, anxiety and depression-like behavior. Overall, the results indicate a negative modulation trend in neuronal excitatory signaling, which can suggest new working hypotheses on the anxiolytic and analgesic action of this plant.

Source:<http://www.ncbi.nlm.nih.gov/pubmed/24613275>

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Sikdar S, Kumar Saha S, Rahman Khuda-Bukhsh A. Relative

Apoptosis-inducing Potential of Homeopathic Condurango 6C and 30C in H460 Lung Cancer Cells In vitro: -Apoptosis-induction by homeopathic Condurango in H460 cells. J Pharmacopuncture. 2014 Mar;17(1):59-69. doi: 10.3831/KPI.2014.17.008. Objectives: In homeopathy, it is claimed that more homeopathically-diluted potencies render more protective/curative effects against any disease condition. Potentized forms of Condurango are used successfully to treat digestive problems, as well as esophageal and stomach cancers. However, the comparative efficacies of Condurango 6C and 30C, one diluted below and one above Avogadro's limit (lacking original drug molecule), respectively, have not been critically analyzed for their cell-killing (apoptosis) efficacy against lung cancer cells in vitro, and signalling cascades have not been studied. Hence, the present study was undertaken. Methods: 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assays were conducted on H460-non-small-cell lung cancer (NSCLC) cells by using a succussed ethyl alcohol vehicle (placebo) as a control. Studies on cellular morphology, cell cycle regulation, generation of reactive oxygen species (ROS), changes in mitochondrial membrane potential (MMP), and DNA-damage were made, and expressions of related signaling markers were studied. The observations were done in a "blinded" manner. Results: Both Condurango 6C and 30C induced apoptosis via cell cycle arrest at subG0/G1 and altered expressions of certain apoptotic markers significantly in H460 cells. The drugs induced oxidative stress through ROS elevation and MMP depolarization at 18-24 hours. These events presumably activated a caspase-3-mediated signalling cascade, as evidenced by reverse transcriptase-polymerase chain reaction (RT-PCR), western blot and immunofluorescence studies at a late phase (48 hours) in which cells were pushed towards apoptosis. Conclusion: Condurango 30C had greater apoptotic effect than Condurango 6C as claimed in the homeopathic doctrine.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4331988/>

Sandri P, Aleixo DL, Sanchez Falkowski GJ, Nascimento

Júnior AD, Gomes ML, Hernandez L, Machado de Oliveira Dalalio M, Moreira NM, Toledo MJ, Gabriel M, de Araújo SM. Trypanosoma cruzi: biotherapy made from trypomastigote modulates the inflammatory response. Homeopathy. 2015;104(1):48-56. doi: 10.1016/j.homp.2014.05.007. Abstract: This study evaluates the effect of Trypanosoma cruzi biotherapy 17dH (BIOT) on mice of different ages, infected with the protozoa concerned. METHOD: Performing a blind, controlled, randomized by drawing experiment, 110 animals four or eight-week-old, Swiss, male mice were divided into infected control treated hydroalcoholic 7% (CI-4 = 34 or CI-8 = 21 animals) and infected control treated with biotherapy 17dH-0.2 mL/animal/20 consecutive days/oral regimen (BIOT-4 = 33 or BIOT-8 = 21 animals). Animals were inoculated intraperitoneally with 1400 trypomastigote, T. cruzi Y-strain. Parasitological, immunological and histopathologic parameters were evaluated statistically, using Statistica-8.0 and R 3.0.2 program to analysis of survival. The study was approved by the Ethics Committee for Animal Experimentation/UEM. RESULTS: Four-week-old mice showed no statistical difference in parasitemia ($P = 0.5718$) between the treated and control group. Eight-week-old mice from the treated group had a higher parasite peak ($P = 0.0424$) and higher parasitemia ($P < 0.005$) than the control. To both groups of 4 and 8 weeks of age, treated or untreated, survival of mice was higher in the treated group than in the control, although it was not statistically significant (p -value = 0.32, 0.55 respectively). Four-week-old mice displayed a spleen section with a number of amastigote nests significantly higher in BIOT-4 than CI-4 ($P = 0.01$). In eight-week-old mice the number of amastigote nests ($P < 0.001$) and inflammatory foci ($P < 0.06$ -10% significance) in the liver section were smaller in BIOT-8 than CI-8. Spleen giant cells were significantly higher in CI-8 than in BIOT-8 ($P < 0.01$). Eight-week-old animals treated with biotherapy showed higher parasitemia and lower tissue parasitism. Opposite pattern was observed in four-week-old animals. CONCLUSION: There is a difference of high diluted medication effect in four and eight-week-old

mice. In the group of animals 8 weeks the immunomodulatory effect seems to have been higher. Hence, treatment with the medicine produced from T. cruzi modulates the inflammatory response with increased apoptosis and decreased serum levels of TGF- β .

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576271>

Arora S, Tandon S. DNA fragmentation and cell cycle arrest: a hallmark of apoptosis induced by Ruta graveolens in human colon cancer cells. Homeopathy. 2015 Jan;104(1):36-47. doi: 10.1016/j.homp.2014.10.001. Abstract: In the present study, we investigated the anti-cancer effect of various potencies of Ruta graveolens (Ruta) on COLO-205 cell line, as evidenced by cytotoxicity, migration, clonogenicity, morphological and biochemical changes and modification in the levels of genes associated with apoptosis and cell cycle. On treatment of COLO-205 cells maximal effects were seen with mother tincture (MT) and 30C potencies, wherein decrease in cell viability along with reduced clonogenicity and migration capabilities were noted. In addition morphological and biochemical alterations such as nuclear changes (fragmented nuclei with condensed chromatin) and DNA ladder-like pattern (increased amount of fragmented DNA) in COLO-205 cells indicating apoptotic related cell death were seen. The expression of apoptosis and cell-cycle related regulatory genes assessed by reverse transcriptase-PCR revealed an up-regulation of caspase 9, caspase-3, Bax, p21 and p27 expression and down-regulation of Bcl-2 expression in treated cells. The mode of cell death was suggestive of intrinsic apoptotic pathway along with cell cycle arrest at the G2/M of the cell cycle. Our findings indicate that phytochemicals present in Ruta showed potential for natural therapeutic product development for colon carcinoma.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576270>

Henrique da Silva G, Barros PP, Silva Gonçalves GM,

Landi MA. Hepatoprotective effect of *Lycopodium clavatum* 30CH on experimental model of paracetamol-induced liver damage in rats. *Homeopathy*. 2015 Jan;104(1):29-35. doi: 10.1016/j.homp.2014.05.005. Introduction: Homeopathic *Lycopodium clavatum* is indicated for disorders of the digestive system and its accessory organs, including atony of the liver and liver tissue failure. This suggests that it may have action on drug-induced hepatitis, as occurs in paracetamol overdose. PURPOSE: To evaluate the effectiveness of *Lycopodium clavatum* 30C (Lyc) as a hepatoprotector against liver damage experimentally induced by paracetamol (Pct) in Wistar rats. Methodology: Thirty animals subdivided into 6 groups were used. Animals from the treated groups were pretreated for 8 days with Lyc 30c (0.25 ml/day), receiving a dose of 3 g/kg of Pct on the 8th day. A positive control group received similar treatment, replacing Lyc 30c with 30% ethanol and a negative control received only 30% ethanol. After 24 and 72 h, the animals were sacrificed for tissue and blood sample collection. Subsequently, enzyme serum measurements indicative of liver damage (aspartate-aminotransferase (AST) and Alanine-aminotransferase (ALT)) and liver histological and morphometric analyses were performed. Results: Pretreatment with Lyc 30c reduced hepatic lesions produced by Pct overdose as evidenced by a significant reduction ($p < 0.05$) in ALT levels in the LyP 24h-group (901.04 ± 92.05 U/l) compared to the respective control group (1866.28 ± 585.44 U/l), promoted a significant decrease in the number of acinar zone 1 affected by necrosis and inflammatory infiltration (15.46 ± 13.86 clr/cm²) in LyP72 for 73.75 ± 16.60 clr/cm² in PC72), and inhibition of 1,2-glycol (glycogen) depletion in zone 3 (a significant reduction in Lyc 72 h group animals in comparison to the control group). Significant changes concerning the development of fibrosis or alterations in transaminase levels were not observed after 72 h. Conclusion: Lyc 30c exerted a moderate hepatoprotective effect on acute Pct-induced hepatitis, mainly shown by a histological decrease in necrosis and inflammatory foci, preserved glycogen and other 1,2-

glycols in zone 3 and reduced serum levels of ALT and AST.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576269>

Hanif K, Kumar M, Singh N, Shukla R. Effect of homeopathic *Lycopodium clavatum* on memory functions and cerebral blood flow in memory-impaired rats. *Homeopathy*. 2015 Jan;104(1):24-8. doi: 10.1016/j.homp.2014.08.003. Background: *Lycopodium clavatum* (Lyc) is a widely used homeopathic medicine for the liver, urinary and digestive disorders. Recently, acetyl cholinesterase (AChE) inhibitory activity has been found in Lyc alkaloid extract, which could be beneficial in dementia disorder. However, the effect of Lyc has not yet been explored in animal model of memory impairment and on cerebral blood flow. Aim: The present study was planned to explore the effect of Lyc on learning and memory function and cerebral blood flow (CBF) in intracerebroventricularly (ICV) administered streptozotocin (STZ) induced memory impairment in rats. Materials and methods: Memory deficit was induced by ICV administration of STZ (3 mg/kg) in rats on 1st and 3rd day. Male SD rats were treated with Lyc Mother Tincture (MT) 30, 200 and 1000 for 17 days. Learning and memory was evaluated by Morris water maze test on 14th, 15th and 16th day. CBF was measured by Laser Doppler flow meter on 17th day. Results: STZ (ICV) treated rats showed impairment in learning and memory along with reduced CBF. Lyc MT and 200 showed improvement in learning and memory. There was increased CBF in STZ (ICV) treated rats at all the potencies of Lyc studied. Conclusion: The above study suggests that Lyc may be used as a drug of choice in condition of memory impairment due to its beneficial effect on CBF.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576268>

Mutlu O, Ulak G, Kokturk S, Celikyurt IK, Akar F, Erden F. Effects of homeopathic *Anax imperator* on behavioural and pain models in mice. *Homeopathy*. 2015

Jan;104(1):15-23. doi: 10.1016/j.homp.2014.05.002. Background: Homeopathy is a medical theory and practice that asserts that disease can be cured by remedies that produce symptoms in a healthy person similar to those suffered by a patient with a malady. Methods: The aim of this study was to investigate effects of homeopathic Anax imperator (dragonfly) (Anax-i 30c and Anax-i 200c) in the forced swim test (FST), elevated plus-maze (EPM) test, hot plate (HP) test and open field test and examined NPY1 receptor expression, in naive mice. Results: In the FST, treatment with Anax-i 30c or Anax-i 200c significantly diminished immobility time while in EPM test, Anax-i 200c increased the percentage of time spent in open arms as well as the percentage of open arm/total arms. In the HP test, Anax-i 30c or Anax-i 200c decreased the total time mice spent licking their hind paws while in open field test, treatment with Anax-i 200c increased the total distance and speed mice traveled compared to the control group. Three weeks of daily injections with Anax-i 30c or Anax-i 200c caused significant weight loss in mice. Anax-i 30c or Anax-i 200c treatment significantly decreased NPY1 receptor expression, and Anax-i 30c also decreased NPY2 receptor expression. Conclusion: These results suggest that the homeopathic Anax-i exerts antidepressant, anxiolytic and analgesic-like effects and causes hyperlocomotion and weight loss.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576267>

Rodrigues de Santana F, Coelho Cde P, Cardoso TN, Laurenti MD, Perez Hurtado EC, Bonamin LV. Modulation of inflammation response to murine cutaneous Leishmaniasis by homeopathic medicines: thymulin 5cH. Homeopathy. 2014 Oct;103(4):275-84. doi: 10.1016/j.homp.2014.08.002. Background: In previous studies, we observed that thymulin 5cH could modulate BCG (Bacillus Calmette-Guerin) induced chronic inflammation by increasing peritoneal B1 stem cells differentiation into phagocytes and improving phagocytosis efficiency. Methods: We used the same protocol to study the effects of thymulin 5cH in the

experimental murine Leishmaniasis, in order to elucidate some aspects of the parasite-host relation under this homeopathic treatment. Male Balb/c mice were orally treated with thymulin 5cH or vehicle during 60 days, after the subcutaneous inoculation of 2×10^6 units of Leishmania (L.) amazonensis into the footpad. Washed inflammatory cell suspension from peritoneal cavity, spleen, local lymph node and infected subcutaneous tissue were harvested after 2 and 60 days from infection to quantify the inflammation cells by flow cytometry and histometry methods. Results: After a transitory increase of peritoneal T reg cells, treated mice presented, chronically, increase in the peritoneal and spleen B1 cells percentage ($p = 0.0001$) in relation to other cell types; more organized and exuberant inflammation response in the infection site, and decrease in the number of parasites per field inside the primary lesion ($p = 0.05$). No difference was seen in local lymph node histology. Conclusions: Thymulin 5cH is able to improve B1 cell activation and Leishmania (L.) amazonensis phagocytosis efficiency in mice, similarly to that observed previously in BCG experimental infection.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25439044>

Rodrigues de Santana F, de Paula Coelho C, Cardoso TN, Perez Hurtado EC, Roberti Benites N, Dalstra Laurenti M, Villano Bonamin L. Modulation of inflammation response to murine cutaneous Leishmaniasis by homeopathic medicines: Antimonium crudum 30cH. Homeopathy. 2014 Oct;103(4):264-74. doi: 10.1016/j.homp.2014.08.006. Background: Leishmaniasis is a zoonotic disease caused by protozoan parasites of the mononuclear phagocytic system. The modulation activity of these cells can interfere in the host/parasite relationship and influences the prognosis. Methods: We evaluated the effects of the homeopathic preparation Antimonium crudum 30cH on experimental infection induced by Leishmania (L.) amazonensis. Male Balb/c mice were inoculated with 2×10^6 Leishmania (L.) amazonensis promastigotes into the footpad and, after 48 h (acute phase) or 60 days (chronic phase), cell

population of lymphocytes and phagocytes present in the peritoneal washing fluid and spleen were analyzed by flow cytometry and histopathology, with histometry of the subcutaneous primary lesion, local lymph node and spleen. Immunohistochemistry was performed to quantify CD3 (T lymphocyte), CD45RA (B lymphocyte) and CD11b (phagocytes) positive cells. Results: In treated mice, during the acute phase, there was significant increase of the macroscopic lesion, associated to inflammatory edema, as well increase in the number of free amastigotes and B lymphocytes inside the lesion. Increase of B lymphocytes (predominantly B-2 cells) was also seen in the local lymph node, spleen and peritoneum. In the chronic phase, the inflammatory process in the infection focus was reduced, with reduced phagocyte migration and peritoneal increase of B-1a cells (precursors of B-2 immunoglobulin producers cells) and T CD8+ cells. Conclusion: The treatment of mice with Antimonium crudum 30cH induced a predominantly B cell pattern of immune response in *Leishmania (L.) amazonensis* experimental infection, alongside the increase of free amastigote forms number in the infection site. The clinical significance of this study is discussed, further studies are suggested.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25439043>

Freyer G, You B, Villet S, Tartas S, Fournel-Federico C, Trillet-Lenoir V, Hamizi S, Colomban O, Chaverno N, Falandry C. Open-label uncontrolled pilot study to evaluate complementary therapy with *Ruta graveolens* 9c in patients with advanced cancer. *Homeopathy*. 2014 Oct;103(4):232-8. doi: 10.1016/j.homp.2014.06.001. Background: Patients with advanced metastatic disease are often treated aggressively with multiple lines of chemotherapy, even in the last month of life. The benefit of such an approach remains uncertain. The objective of the study was to investigate whether *Ruta graveolens* 9c homeopathic medicine can improve quality of life (QoL) and tumour progression in patients with advanced cancer. Material and methods: This was a single-centre, open-label, uncontrolled, pilot study.

Patients (>18-years, life-expectancy ≥ 3 months, performance status ≤ 2) with locally-advanced solid tumours or metastases, previously treated with all available standard anti-cancer treatments were recruited. Oral treatment consisted of two 1-mL ampoules of *Ruta graveolens* (9c dilution) given daily for a minimum of 8 weeks, or until tumour and/or clinical progression. Primary outcome was QoL measured using the EORTC QLQ-C30 questionnaire. Secondary outcome measures were anxiety/depression measured using the Hospital Anxiety and Depression Scale (HADS), WHO performance status (PS), tumour progression assessed using RECIST criteria and tumour markers, survival and tolerance. Results: Thirty-one patients were included (mean age: 64.3 years). Mean duration of treatment was 3.3 months (median: 2.1). QoL global health status improved significantly between baseline and week 8 ($P < 0.001$) and week 16 ($P = 0.035$), but was at the limit of significance ($P = 0.057$) at the end of the study. There was no significant change in anxiety/depression or PS during treatment. *Ruta graveolens* 9c had no obvious effect on tumour progression. Median survival was 6.7 months [95%CI: 4.8-14.9]. *Ruta graveolens* 9c was well-tolerated. Conclusion: Some patients treated with *Ruta graveolens* 9c had a transitory improvement in QoL, but the effectiveness of this treatment remains to be confirmed in further studies.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25439039>

Marzotto M, Oliosio D, Bellavite P. Gene expression and highly diluted molecules. *Front Pharmacol*. 2014 Nov 12;5:237. doi: 10.3389/fphar.2014.00237. eCollection 2014.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25429268>

Mondal J, Panigrahi AK, Khuda-Bukhsh AR. Anticancer potential of *Conium maculatum* extract against cancer cells in vitro: Drug-DNA interaction and its ability to induce apoptosis through ROS generation. *Pharmacogn Mag*. 2014 Aug;10(Suppl 3):S524-33. doi: 10.4103/0973-1296.139792. Objective: *Conium*

maculatum extract is used as a traditional medicine for cervix carcinoma including homeopathy. However, no systematic work has so far been carried out to test its anti-cancer potential against cervix cancer cells in vitro. Thus, in this study, we investigated whether ethanolic extract of conium is capable of inducing cytotoxicity in different normal and cancer cell lines including an elaborate study in HeLa cells. Materials and methods: Conium's effects on cell cycle, reactive oxygen species (ROS) accumulation, mitochondrial membrane potential (MMP) and apoptosis, if any, were analyzed through flow cytometry. Whether Conium could damage DNA and induce morphological changes were also determined microscopically. Expression of different proteins related to cell death and survival was critically studied by western blotting and ELISA methods. If Conium could interact directly with DNA was also determined by circular dichroism (CD) spectroscopy. Results: Conium treatment reduced cell viability and colony formation at 48 h and inhibited cell proliferation, arresting cell cycle at sub-G stage. Conium treatment lead to increased generation of reactive oxygen species (ROS) at 24 h, increase in MMP depolarization, morphological changes and DNA damage in HeLa cells along with externalization of phosphatidyl serine at 48 hours. While cytochrome c release and caspase-3 activation led HeLa cells toward apoptosis, down-regulation of Akt and NFkB inhibited cellular proliferation, indicating the signaling pathway to be mediated via the mitochondria-mediated caspase-3-dependent pathway. CD-spectroscopy revealed that Conium interacted with DNA molecule. Conclusion: Overall results validate anti-cancer potential of Conium and provide support for its use in traditional systems of medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4189268/>

Lara-Ramírez EE, Salazar MI, López-López Mde J, Salas-Benito JS, Sánchez-Varela A, Guo X. Large-scale genomic analysis of codon usage in dengue virus and evaluation of its phylogenetic dependence. Biomed Res Int.

2014;2014:851425. doi: 10.1155/2014/851425.

Abstract: The increasing number of dengue virus (DENV) genome sequences available allows identifying the contributing factors to DENV evolution. In the present study, the codon usage in serotypes 1-4 (DENV1-4) has been explored for 3047 sequenced genomes using different statistics methods. The correlation analysis of total GC content (GC) with GC content at the three nucleotide positions of codons (GC1, GC2, and GC3) as well as the effective number of codons (ENC, ENCp) versus GC3 plots revealed mutational bias and purifying selection pressures as the major forces influencing the codon usage, but with distinct pressure on specific nucleotide position in the codon. The correspondence analysis (CA) and clustering analysis on relative synonymous codon usage (RSCU) within each serotype showed similar clustering patterns to the phylogenetic analysis of nucleotide sequences for DENV1-4. These clustering patterns are strongly related to the virus geographic origin. The phylogenetic dependence analysis also suggests that stabilizing selection acts on the codon usage bias. Our analysis of a large scale reveals new feature on DENV genomic evolution.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4124757/pdf/BMRI2014-851425.pdf>

Bagai U, Walter NS. Antiplasmodial potential of homeopathic drugs Chelidonium and nosode against Plasmodium berghei infection. J Complement Integr Med. 2014;11(3):195-201. Background: Malaria remains a major global health concern in developing regions of the world. Homeopathy, a holistic system of medicine, has a lot to offer in protecting against malaria. Methods: In the present study, antimalarial efficacy of combination of two homeopathic drugs Chelidonium 30 and nosode 30 has been evaluated in vivo against Plasmodium berghei (P. berghei) infection using Peters 4-day test. Biochemical assays have been performed to assess the levels of hepatic and renal function biomarkers upon drug treatment using diagnostic kits. Results: The combination of the drugs demonstrated considerable in vivo antimalarial activity with

chemosuppression of 91.45% on day 7. The combination also significantly ($p < 0.0005$) enhanced the mean survival time of mice which was calculated to be 22.5 ± 6.31 days, whereas it was 8.55 ± 0.83 days in infected control. The increase in levels of the liver function marker enzymes tested in serum of treated mice were significantly less ($p < 0.0005$) than those observed in infected control on day 10. The serum urea and creatinine used for assessment of renal sufficiency were slightly elevated above normal, but were statistically significant ($p < 0.0005$) as compared to infected control. Conclusions: The study establishes the effectiveness of the combination against *P. berghei* in vivo along with the safety of the drugs to the liver and kidney functions of the host.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25046315>

López-Rosas I, Marchat LA, Olvera BG, Guillen N, Weber C, Hernández de la Cruz O, Ruiz-García E, Astudillo-de la Vega H, López-Camarillo C. Proteomic analysis identifies endoribonuclease EhL-PSP and EhRRP41 exosome protein as novel interactors of EhCAF1 deadenylase. *J Proteomics*. 2014;111:59-73. doi: 10.1016/j.jprot.2014.06.019. Abstract: In higher eukaryotic cells mRNA degradation initiates by poly(A) tail shortening catalyzed by deadenylases CAF1 and CCR4. In spite of the key role of mRNA turnover in gene expression regulation, the underlying mechanisms remain poorly understood in parasites. Here, we aimed to study the function of EhCAF1 and identify associated proteins in *Entamoeba histolytica*. By biochemical assays, we evidenced that EhCAF1 has both RNA binding and deadenylase activities in vitro. EhCAF1 was located in cytoplasmic P-bodies that increased in number and size after cellular stress induced by DNA damage, heat shock, and nitric oxide. Using pull-down assays and ESI-MS/MS mass spectrometry, we identified 15 potential EhCAF1-interacting proteins, including the endoribonuclease EhL-PSP. Remarkably, EhCAF1 colocalized with EhL-PSP in cytoplasmic P-bodies in trophozoites. Bioinformatic analysis of EhL-PSP network proteins predicts a potential interaction with EhRRP41

exosome protein. Consistently, we evidenced that EhL-PSP colocalizes and physically interacts with EhRRP41. Strikingly, EhRRP41 did not coimmunoprecipitate EhCAF1, suggesting the existence of two EhL-PSP-containing complexes. In conclusion, our results showed novel interactions between mRNA degradation proteins and evidenced for the first time that EhCAF1 is a functional deadenylase that interacts with EhL-PSP endoribonuclease in P-bodies, while EhL-PSP interacts with EhRRP41 exosome protein in this early-branched eukaryote. Biological significance: This study provides evidences for the functional deadenylase activity of EhCAF1 and shows a link between different mRNA degradation proteins in *E. histolytica*. By proteomic tools and pull down assays, we evidenced that EhCAF1 interacts with the putative endoribonuclease EhL-PSP, which in turn interacts with exosome EhRRP41 protein. Our data suggest for the first time the presence of two complexes, one containing the endoribonuclease EhL-PSP and the deadenylase EhCAF1 in P-bodies; and another containing the endoribonuclease EhL-PSP and the exosome EhRRP41 exoribonuclease. Overall, these results provide novel data that may help to understand mRNA decay mechanisms in this parasite.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24998979>

Yamabhai M, Chumseng S, Yoohat K, Srila W. Diverse biological effects of electromagnetic-treated water. *Homeopathy*. 2014;103(3):186-92. doi: 10.1016/j.homp.2013.11.004. Abstract: The effects of water treated with an electromagnetic field (EMF) were investigated on two biological systems, humans and plants. Purified de-ionised water was treated by (1) boiling, (2) exposure to microwave radiation, and (3) low frequency electromagnetic oscillation molecular resonance effect technology (MRET), before being used to prepare media for culturing human peripheral blood mononuclear cells (PBMC) from three healthy females. Our results indicated that PBMC culture in MRET-activated medium showed significantly less oxidative metabolism when compared to media prepared from other types of water. As for the effects on soybean, our

results indicated that both MRET- and microwave-treated water greatly enhanced the length of the root. These results suggested that electromagnetic-treated water can have diverse biological effects on both animal and plant cells. Since these effects are related to the 'Memory of Water', hypothesis which has been suggested as an explanation of the action of high homeopathic dilutions, our finding warrant a further investigation on the mechanisms of various types of physically conditioned water on specific cellular activities.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24931750>

Raja K, Prabahar A, Selvakumar S, Raja TK. In Silico Analysis to Compare the Effectiveness of Assorted Drugs Prescribed for Swine flu in Diverse Medicine Systems. *Indian J Pharm Sci.* 2014;76(1):10-8. Abstract: The genome of the virus H1N1 2009 consists of eight segments but maximum number of mutations occurs at segments 1 and 4, coding for PB2 subunit of hemagglutinin. Comparatively less number of mutations occur at segment 6, coding for neuraminidase. Two antiviral drugs, oseltamivir and zanamivir are commonly prescribed for treating H1N1 infection. Alternate medical systems do compete equally; andrographolide in Siddha and gelsemine in Homeopathy. Recent studies confirm the efficacy of eugenol from Tulsi and vitamins C and E against H1N1. As the protein structures are unavailable, we modeled them using Modeller by identifying suitable templates, 1RUY and 3BEQ, for hemagglutinin and neuraminidase, respectively. Prior to docking simulations using AutoDock, the drug likeness properties of the ligands were screened using in silico techniques. Docking results showed interaction between the proteins individually into selected ligands, except for gelsemine and vitamin E no interactions were shown. The best docking simulation was reported by vitamin C interacting through six hydrogen bonds into proteins hemagglutinin and neuraminidase with binding energies -4.28 and -4.56 kcal/mol, respectively. Furthermore, vitamin C showed hydrophobic interactions with both proteins,

two bonds with Arg119, Glu120 of HA, and one bond with Arg74 of NA. In silico docking studies thus recommend vitamin C to be more effective against H1N1.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4007250/>

Muñiz Lino MA, Palacios-Rodríguez Y, Rodríguez-Cuevas S, Bautista-Piña V, Marchat LA, Ruíz-García E, Astudillo-de la Vega H, González-Santiago AE, Flores-Pérez A, Díaz-Chávez J, Carlos-Reyes Á, Álvarez-Sánchez E, López-Camarillo C. Comparative proteomic profiling of triple-negative breast cancer reveals that up-regulation of RhoGDI-2 is associated to the inhibition of caspase 3 and caspase 9. *J Proteomics.* 2014;111:198-211. doi: 10.1016/j.jprot.2014.04.019. Abstract: There are no targeted therapeutic modalities for triple-negative breast cancer (TNBC), thus it is associated with poor prognosis and worst clinical outcome. Here, our aim was to identify deregulated proteins in TNBC with potential therapeutic applications. Proteomics profiling of TNBC and normal breast tissues through two-dimensional electrophoresis and ESI-MS/MS mass spectrometry revealed the existence of 16 proteins (RhoGDI-2, HSP27, SOD1, DJ1, UBE2N, PSME1, FTL, SH3BGR1, and eIF5A-1) with increased abundance in carcinomas. We also evidenced for the first time the deregulation of COX5, MTPN and DB1 proteins in TNBC that may represent novel tumor markers. Particularly, we confirmed the overexpression of the Rho-GDP dissociation inhibitor 2 (RhoGDI-2) in distinct breast cancer subtypes, as well as in metastatic cell lines derived from lung, prostate, and breast cancer. Remarkably, targeted disruption of RhoGDI-2 by RNA interference induced mitochondrial dysfunction, and facilitated caspase-3 and -9 activation in two breast cancer cell lines. Moreover, suppression of RhoGDI-2 resulted in a robust sensitization of breast cancer cells to cisplatin therapy. In conclusion, we identified novel proteins deregulated in TNBC, and confirmed the overexpression of RhoGDI-2. We propose that RhoGDI-2 inhibition may be exploited as a potential therapeutic strategy along cisplatin-based

chemotherapy in breast cancer. Biological significance: There are no useful biomarkers neither targeted therapeutic modalities for triple-negative breast cancer, which highly contributes to the poor prognosis of this breast cancer subtype. In this work, we used two-dimensional electrophoresis and ESI-MS/MS spectrometry to identify novel deregulated proteins in breast cancer tissues. Particularly, our results showed that RhoGDI-2, a protein that has been associated to metastasis and poor survival in human cancers, is overexpressed in different subtypes of breast tumors, as well as in metastatic cell lines derived from lung, prostate, and breast cancer. Our data also provided novel insights about the role of RhoGDI-2 in apoptosis through intrinsic pathway inhibition. Importantly, they suggested that targeted modulation of RhoGDI-2 levels might be a useful strategy for breast cancer therapy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24768906>

Bell IR, Sarter B, Koithan M, Banerji P, Banerji P, Jain S, Ives J. Integrative nanomedicine: treating cancer with nanoscale natural products. *Glob Adv Health Med*. 2014;3(1):36-53. doi: 10.7453/gahmj.2013.009. Abstract: Finding safer and more effective treatments for specific cancers remains a significant challenge for integrative clinicians and researchers worldwide. One emerging strategy is the use of nanostructured forms of drugs, vaccines, traditional animal venoms, herbs, and nutraceutical agents in cancer treatment. The recent discovery of nanoparticles in traditional homeopathic medicines adds another point of convergence between modern nanomedicine and alternative interventional strategies. A way in which homeopathic remedies could initiate anticancer effects includes cell-to-cell signaling actions of both exogenous and endogenous (exosome) nanoparticles. The result can be a cascade of modulatory biological events with antiproliferative and pro-apoptotic effects. The Banerji Protocols reflect a multigenerational clinical system developed by homeopathic physicians in India who have treated thousands of patients with cancer. A number of homeopathic remedy sources from the Banerji

Protocols (eg, *Calcarea phosphorica*; *Carcinosin*-tumor-derived breast cancer tissue prepared homeopathically) overlap those already under study in nonhomeopathic nanoparticle and nanovesicle tumor exosome cancer vaccine research. Past research on antineoplastic effects of nano forms of botanical extracts such as *Phytolacca*, *Gelsemium*, *Hydrastis*, *Thuja*, and *Ruta* as well as on homeopathic remedy potencies made from the same types of source materials suggests other important overlaps. The replicated finding of silica, silicon, and nano-silica release from agitation of liquids in glassware adds a proven nonspecific activator and amplifier of immunological effects. Taken together, the nanoparticulate research data and the Banerji Protocols for homeopathic remedies in cancer suggest a way forward for generating advances in cancer treatment with natural product-derived nanomedicines.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3921611/pdf/gahmj.2013.009.pdf>

Sarkar A, Datta P, Das AK, Gomes A. Anti-rheumatoid and anti-oxidant activity of homeopathic *Guaiaecum officinale* in an animal model. *Homeopathy*. 2014;103(2):133-8. doi: 10.1016/j.homp.2013.08.006. Background: Homeopathy is a popular form of complementary and alternative medicine. *Guaiaecum* extract is said to be useful for pain and inflammation, but there appears to be no scientific evidence to support this. Aims: The aim of the present study was to evaluate the anti-rheumatic and anti-oxidant activity of homeopathic preparations of *Guaiaecum officinale* (Gua) on experimental animal model. Design: Rheumatoid arthritis (RA) was induced in male albino rats by Freund's complete adjuvant (FCA) at a dose of (0.25 mg heat killed *Mycobacterium tuberculosis*/ml of emulsion). Gua mother tincture (MT) (prepared from the latex part of the plant) (MT), Gua 30cc and 200cc were purchased commercially from King Company, Kolkata, India. Male albino Wistar rats (130 ± 10 g) were divided into 6 groups: Sham control; Arthritis control; Standard treatment indomethacin (0.25 mg 100 g(-1) p.o. × 5 alternative days), Gua MT (1 ml kg(-1) p.o. × 5

days) treated; Gua (30c 1 ml kg⁻¹) p.o. × 5 days) treated; Gua (200c; 1 ml kg⁻¹) p.o. × 5 days) treated. Anti-rheumatic activity was examined through physical, urinary, serum parameters. All the results were expressed in terms of mean ± SEM (statistical error of mean n = 6) at each dose level. The level of significance was determined through one-way analysis of variance (ANOVA), p < 0.05 was considered significant. Results: It was observed that body weight, ankle and knee diameter, urinary parameters (hydroxyproline (OH-P), glucosamine, calcium (Ca²⁺(+)), creatinine (CRE), phosphate (PO₄(3)(-))), serum ACP (acid phosphatase)/ALP (alkaline phosphatase)/Ca²⁺/CRE/PO₄(3-)/gamma-glutamyl transferase (GGT)/Lipid peroxidation (LPO)/Glutathione (GSH)/Superoxide dismutase (SOD)/Catalase, serum GGT, serum interleukins like IL-1β/CINC-1/PGE₂/TNF-α/IL-6, IL-12/IL-4/IL-6 levels were significantly affected. After treatment with *Guaiacum* in all 3 regimes was associated with normalization of these parameters compared to control group. Conclusion: These findings suggest that homeopathic *G. officinale* possesses anti-rheumatic and anti-oxidant activity in experimental animal and these activities may be more significant in higher potencies.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24685418>

Bigagli E, Luceri C, Bernardini S, Dei A, Filippini A, Dolara P. Exploring the effects of homeopathic *Apis mellifica* preparations on human gene expression profiles. *Homeopathy*. 2014;103(2):127-32. doi: 10.1016/j.homp.2014.01.003. Background: Diluted preparations obtained from *Apis mellifica* are reported in the homeopathic literature to have anti-inflammatory activity. The present study was designed to explore the effects on global gene expression profiles of human cells by means of microarrays, using *Apis mellifica* mother tincture (TM) and its 3C, 5C, 7C dynamized dilutions; the technique employed allowed us to study the changes in gene expression at concentrations much lower than those associated with pharmacological responses. Methods: An RWPE-1 cell line (human immortalized

prostate epithelial cells) was used to study the effects on global gene expression by transcriptomic analysis. Results: *Apis mellifica* TM and its 3C, 5C, 7C dynamized dilutions modulated hundreds of genes; using cluster analysis we observed groups of genes up- or down-regulated with similar expression profiles among treatments; other genes showed opposite regulation profiles at low and high dilutions of *Apis mellifica*, suggesting a hormetic response. In particular, genes involved in cytokine expression, inflammatory processes, anti-oxidative responses and proteasome degradation were differentially, and sometimes divergently expressed by the TM or by *Apis mellifica* 3C, 5C and 7C dilutions. We confirmed these data by RT-PCR analyses on 5 selected candidate genes (IL1β, CD46, ATF1, UBE2Q2 and MT1X). Conclusions: *Apis mellifica* TM modifies gene expression in human cells and has inhibitory effects on regulatory processes of inflammation; in addition, extremely diluted dynamized dilutions (3C, 5C and 7C) still exert significant effects on genes involved in inflammation and oxidative stress.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24685417>

Majewsky V, Scherr C, Arlt SP, Kiener J, Frrokaj K, Schindler T, Klocke P, Baumgartner S. Reproducibility of effects of homeopathically potentised gibberellic acid on the growth of *Lemna gibba* L. in a randomised and blinded bioassay. *Homeopathy*. 2014;103(2):113-26. doi: 10.1016/j.homp.2013.12.004. Background: Reproducibility of basic research investigations in homeopathy is challenging. This study investigated if formerly observed effects of homeopathically potentised gibberellic acid (GA3) on growth of duckweed (*Lemna gibba* L.) were reproducible. Methods: Duckweed was grown in potencies (14x-30x) of GA3 and one time succussed and unsuccussed water controls. Outcome parameter area-related growth rate was determined by a computerised image analysis system. Three series including five independent blinded and randomised potency experiments (PE) each were carried out. System stability was controlled by three series of five systematic negative control (SNC)

experiments. Gibbosity (a specific growth state of *L. gibba*) was investigated as possibly essential factor for reactivity of *L. gibba* towards potentised GA3 in one series of potency and SNC experiments, respectively. Results: Only in the third series with gibbous *L. gibba* L. we observed a significant effect ($p = 0.009$, F-test) of the homeopathic treatment. However, growth rate increased in contrast to the former study, and most biologically active potency levels differed. Variability in PE was lower than in SNC experiments. The stability of the experimental system was verified by the SNC experiments. Conclusions: Gibbosity seems to be a necessary condition for reactivity of *L. gibba* to potentised GA3. Further still unknown conditions seem to govern effect direction and the pattern of active and inactive potency levels. When designing new reproducibility studies, the physiological state of the test organism must be considered. Variability might be an interesting parameter to investigate effects of homeopathic remedies in basic research.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24685416>

Flores-Pérez A, Rafaelli LE, Ramírez-Torres N, Aréchaga-Ocampo E, Frías S, Sánchez S, Marchat LA, Hidalgo-Miranda A, Quintanar-Jurado V, Rodríguez-Cuevas S, Bautista-Piña V, Carlos-Reyes A, López-Camarillo C. RAD50 targeting impairs DNA damage response and sensitizes human breast cancer cells to cisplatin therapy. *Cancer Biol Ther.* 2014;15(6):777-88. doi: 10.4161/cbt.28551. Abstract: In tumor cells the effectiveness of anti-neoplastic agents that cause cell death by induction of DNA damage is influenced by DNA repair activity. RAD50 protein plays key roles in DNA double strand breaks repair (DSBs), which is crucial to safeguard genome integrity and sustain tumor suppression. However, its role as a potential therapeutic target has not been addressed in breast cancer. Our aim in the present study was to analyze the expression of RAD50 protein in breast tumors, and evaluate the effects of RAD50-targeted inhibition on the cytotoxicity exerted by cisplatin and anthracycline and taxane-based therapies in breast cancer cells. Immunohistochemistry

assays on tissue microarrays indicate that the strong staining intensity of RAD50 was reduced in 14% of breast carcinomas in comparison with normal tissues. Remarkably, RAD50 silencing by RNA interference significantly enhanced the cytotoxicity of cisplatin. Combinations of cisplatin with doxorubicin and paclitaxel drugs induced synergistic effects in early cell death of RAD50-deficient MCF-7, SKBR3, and T47D breast cancer cells. Furthermore, we found an increase in the number of DSBs, and delayed phosphorylation of histone H2AX after cisplatin treatment in RAD50-silenced cells. These cellular events were associated to a dramatical increase in the frequency of chromosomal aberrations and a decrease of cell number in metaphase. In conclusion, our data showed that RAD50 abrogation impairs DNA damage response and sensitizes breast cancer cells to cisplatin-combined therapies. We propose that the development and use of inhibitors to manipulate RAD50 levels might represent a promising strategy to sensitize breast cancer cells to DNA damaging agents.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4049793/pdf/cbt-15-777.pdf>

Marzotto M, Oliosio D, Brizzi M, Tononi P, Cristofolletti M, Bellavite P. Extreme sensitivity of gene expression in human SH-SY5Y neurocytes to ultra-low doses of *Gelsemium sempervirens*. *BMC Complement Altern Med.* 2014;14:104. doi: 10.1186/1472-6882-14-104. Background: *Gelsemium sempervirens* L. (*Gelsemium* s.) is a traditional medicinal plant, employed as an anxiolytic at ultra-low doses and animal models recently confirmed this activity. However the mechanisms by which it might operate on the nervous system are largely unknown. This work investigates the gene expression of a human neurocyte cell line treated with increasing dilutions of *Gelsemium* s. extract. Methods: Starting from the crude extract, six 100 × (centesimal, c) dilutions of *Gelsemium* s. (2c, 3c, 4c, 5c, 9c and 30c) were prepared according to the French homeopathic pharmacopoeia. Human SH-SY5Y neuroblastoma cells were exposed for 24 h to test dilutions, and their

transcriptome compared by microarray to that of cells treated with control vehicle solutions. Results: Exposure to the Gelsemium s. 2c dilution (the highest dose employed, corresponding to a gelsemine concentration of 6.5×10^{-9} M) significantly changed the expression of 56 genes, of which 49 were down-regulated and 7 were overexpressed. Several of the down-regulated genes belonged to G-protein coupled receptor signaling pathways, calcium homeostasis, inflammatory response and neuropeptide receptors. Fisher exact test, applied to the group of 49 genes down-regulated by Gelsemium s. 2c, showed that the direction of effects was significantly maintained across the treatment with high homeopathic dilutions, even though the size of the differences was distributed in a small range. Conclusions: The study shows that Gelsemium s., a medicinal plant used in traditional remedies and homeopathy, modulates a series of genes involved in neuronal function. A small, but statistically significant, response was detected even to very low doses/high dilutions (up to 30c), indicating that the human neurocyte genome is extremely sensitive to this regulation.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3999908/pdf/1472-6882-14-104.pdf>

Oliosio D, Marzotto M, Moratti E, Brizzi M, Bellavite P. Effects of Gelsemium sempervirens L. on pathway-focused gene expression profiling in neuronal cells. J Ethnopharmacol. 2014;153(2):535-9. doi: 10.1016/j.jep.2014.02.048. Ethnopharmacological relevance: Gelsemium sempervirens L. is a traditional medicinal plant mainly distributed in the southeastern of the United States, employed in phytotherapy and homeopathy as nervous system relaxant to treat various types of anxiety, pain, headache and other ailments. Although animal models showed its effectiveness, the mechanisms by which it might operate on the nervous system are largely unknown. This study investigated for the first time by a real-time PCR technique (RT-PCR Array) the gene expression of a panel of human neurotransmitter receptors and regulators, involved in

neuronal excitatory signaling, on a neurocyte cell line. Materials and methods: Human SH-SY5Y neuroblastoma cells were exposed for 24h to Gelsemium sempervirens at 2c and 9c dilutions (i.e. 2 and 9-fold centesimal dilutions from mother tincture) and the gene expression profile compared to that of cells treated with control vehicle solutions. Results: Exposure to the Gelsemium sempervirens 2c dilution, containing a nanomolar concentration of active principle gelsemine, induced a down-regulation of most genes of this array. In particular, the treated cells showed a statistically significant decrease of the prokineticin receptor 2, whose ligand is a neuropeptide involved in nociception, anxiety and depression-like behavior. Conclusions: Overall, the results indicate a negative modulation trend in neuronal excitatory signaling, which can suggest new working hypotheses on the anxiolytic and analgesic action of this plant.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24613275>

Milgrom LR. Toward topological descriptions of the therapeutic process: part 3. Two new metaphors based on quantum superposition, wave function "collapse," and conic sections. J Altern Complement Med. 2014;20(6):452-60. doi: 10.1089/acm.2013.0212. Introduction: Quantum theoretical discourse has previously illustrated (1) the therapeutic process as three-way macro-entanglement (between patient, practitioner, and remedy, called PPR entanglement), and (2) depicted the Vital Force (Vf) as a quantized spinning gyroscope. Combining the two via semiotic geometry leads to a topological description of the patient's journey to cure. In this present article, two new metaphors for the homeopathic therapeutic encounter are described, based on (1) a quantum mechanical model of adaptive mutation (QMAM), and (2) the illuminated geometric patterns generated by a light source attached to a spinning gyroscope. Methods: (1) QMAM demonstrates how quantum superposition between DNA and mutant adaptations could arise and how environmental pressure "collapses" the DNA wave function to a particular state. In QMAM for the

therapeutic process, isolation helps induce coherence between patient, practitioner, and remedy, generating a quantum-like superposition of patient "unwell" and "well" states. (2) The light beam from a precessing gyroscope sweeps out an ellipse, which becomes circular, the faster the gyroscope spins on its axis and the less it precesses. Ellipses have two foci that, as a metaphor for the state of a patient's Vf, are seen to represent the patient's "unwell" and "well" states. Results: Superposition of the patient's "unwell" and "well" states generated by the QMAM metaphor can "collapse" to the cured state, following decoherence at the end of therapeutic process. Similarly, the curative therapeutic process may be thought to "spin up" the patient's Vf, so the precessing ellipse's foci (i.e., the patient's "unwell" and "well" states) merge into a "circular" curative state. Conclusions: The two new metaphors may be seen as equivalent and semiotic simplifications of the previous more complex topological description of the patient's "journey to cure."

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24611462>

Saha S, Bhattacharjee P, Mukherjee S, Mazumdar M, Chakraborty S, Khurana A, Nayak D, Manchanda R, Chakraborty R, Das T, Sa G. Contribution of the ROS-p53 feedback loop in thuja-induced apoptosis of mammary epithelial carcinoma cells. *Oncol Rep*. 2014;31(4):1589-98. doi: 10.3892/or.2014.2993. Abstract: The adverse side-effects associated with chemotherapy during cancer treatment have shifted considerable focus towards therapies that are targeted but devoid of toxic side-effects. In the present study, the antitumorigenic activity of thuja, the bioactive derivative of the medicinal plant *Thuja occidentalis*, was evaluated, and the molecular mechanisms underlying thuja-induced apoptosis of functional p53-expressing mammary epithelial carcinoma cells were elucidated. Our results showed that thuja successfully induced apoptosis in functional p53-expressing mammary epithelial carcinoma cells. Abrogation of intracellular reactive oxygen species (ROS), prevention of p53-activation,

knockdown of p53 or inhibition of its functional activity significantly abridged ROS generation. Notably, under these conditions, thuja-induced breast cancer cell apoptosis was reduced, thereby validating the existence of an ROS-p53 feedback loop. Elucidating this feedback loop revealed bi-phasic ROS generation as a key mediator of thuja-induced apoptosis. the first phase of ROS was instrumental in ensuring activation of p53 via p38MAPK and its nuclear translocation for transactivation of Bax, which induced a second phase of mitochondrial ROS to construct the ROS-p53 feedback loop. Such molecular crosstalk induced mitochondrial changes i) to maintain and amplify the thuja signal in a positive self-regulatory feedback manner; and ii) to promote the mitochondrial death cascade through cytochrome c release and caspase-driven apoptosis. These results open the horizon for developing a targeted therapy by modulating the redox status of functional p53-expressing mammary epithelial carcinoma cells by thuja.

Source:

<https://www.spandidos-publications.com/or/31/4/1589?text=fulltext>

Elia V, Ausanio G, Gentile F, Germano R, Napoli E, Niccoli M. Experimental evidence of stable water nanostructures in extremely dilute solutions, at standard pressure and temperature. *Homeopathy*. 2014;103(1):44-50. doi: 10.1016/j.homp.2013.08.004. Abstract: This paper presents the results of several experimental methods (FT-IR spectroscopy, UV-vis spectroscopy, fluorescence microscopy (FM), Atomic Force Microscopy (AFM)) evidencing structural changes induced in extremely diluted solutions (EDS), which are prepared by an iterated process of centesimal (1:100) dilution and succussion (shaking). The iteration is repeated until an extremely high dilution is reached, so that the composition of the solution becomes identical to that of the solvent--in this case water--used to prepare it. The experimental observations reveal the presence of supramolecular aggregates hundreds of nanometres in size in EDS at ambient pressure and temperature, and in the solid state. These findings confirm the hypothesis--developed thanks to previous

physico-chemical investigations--that formation of water aggregates occurs in EDS. The experimental data can be analyzed and interpreted with reference to the thermodynamics of far-from-equilibrium systems and irreversible processes.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24439454>

Bellavite P, Marzotto M, Oliosio D, Moratti E, Conforti A. High-dilution effects revisited. 2. Pharmacodynamic mechanisms. *Homeopathy*. 2014 Jan;103(1):22-43. doi: 10.1016/j.homp.2013.08.002. Abstract: The pharmacodynamics aspects of homeopathic remedies are appraised by laboratory studies on the biological effects at various levels (cellular, molecular and systemic). The major question is how these medicines may work in the body. The possible answers concern the identification of biological targets, the means of drug-receptor interactions, the mechanisms of signal transmission and amplification, and the models of inversion of effects according to the traditional 'simile' rule. These problems are handled by two experimental and theoretical lines, according to the doses or dilutions considered (low-medium versus high dilutions). Homeopathic formulations in low-medium dilutions, containing molecules in the range of ultra-low doses, exploit the extreme sensitivity of biological systems to exogenous and endogenous signals. Their effects are interpreted in the framework of hormesis theories and paradoxical pharmacology. The hypotheses regarding the action mechanisms of highly diluted/dynamized solutions (beyond Avogadro-Loschmidt limit) variously invoke sensitivity to bioelectromagnetic information, participation of water chains in signalling, and regulation of bifurcation points of systemic networks. High-dilution pharmacology is emerging as a pioneering subject in the domain of nanomedicine and is providing greater plausibility to the puzzling claims of homeopathy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24439453>

Bellavite P, Marzotto M, Oliosio D, Moratti E, Conforti A.

High-dilution effects revisited. 1. Physicochemical aspects. *Homeopathy*. 2014;103(1):4-21. doi: 10.1016/j.homp.2013.08.003. Abstract: Several lines of evidence suggest that homeopathic high dilutions (HDs) can effectively have a pharmacological action, and so cannot be considered merely placebos. However, until now there has been no unified explanation for these observations within the dominant paradigm of the dose-response effect. Here the possible scenarios for the physicochemical nature of HDs are reviewed. A number of theoretical and experimental approaches, including quantum physics, conductometric and spectroscopic measurements, thermoluminescence, and model simulations investigated the peculiar features of diluted/succussed solutions. The heterogeneous composition of water could be affected by interactive phenomena such as coherence, epitaxy and formation of colloidal nanobubbles containing gaseous inclusions of oxygen, nitrogen, carbon dioxide, silica and, possibly, the original material of the remedy. It is likely that the molecules of active substance act as nucleation centres, amplifying the formation of supramolecular structures and imparting order to the solvent. Three major models for how this happens are currently being investigated: the water clusters or clathrates, the coherent domains postulated by quantum electrodynamics, and the formation of nanoparticles from the original solute plus solvent components. Other theoretical approaches based on quantum entanglement and on fractal-type self-organization of water clusters are more speculative and hypothetical. The problem of the physicochemical nature of HDs is still far from to be clarified but current evidence strongly supports the notion that the structuring of water and its solutes at the nanoscale can play a key role.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24439452>

Lenger K, Bajpai RP, Spielmann M. Identification of unknown homeopathic remedies by delayed luminescence. *Cell Biochem Biophys*. 2014;68(2):321-34. doi: 10.1007/s12013-013-9712-7. Abstract: A quality

control method of highly diluted and potentized homeopathic remedies is important for curing patients applying homeopathic therapy. Lenger detected photons in highly potentized homeopathic remedies by delayed luminescence. The photons of *Argentum metallicum* 100MK and *Cantharis* 100MK magnetically bound to their carrier substances ethanol or saccharose were separated by their resonating magnetic field of about 2.06 MHz. The photons of these 100MK potency levels and of their reference substances were determined to be standard values calculated by the B2-values of Bajpai's equation derived from the Hamiltonian equation. The stability of ethanolic *Argentum metallicum* 100MK and *Cantharis* 100MK declined to 1/3 of their photons within a month in contrast to saccharose globules with *Argentum metallicum* 100MK having been stable during the period of these investigations for almost 1 year. Some remedies delivered as CMK potency had been proved to be ethanol. The testing amount of high ethanolic potencies is limited to 40 µl because 80 µl resulted in an attenuation of the photons; 40 µl equal 16 medicated saccharose globules. Six unknown homeopathic remedies could be identified as increasing potency levels of *Argentum metallicum* from 100MK to 1.000MK which indicates a calibration curve. The homeopathic factories having sent the unknown remedies confirmed the measurements. A quality control of homeopathic remedies is possible by comparing the different B2-values of the remedies and their carrier substances.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/23872840>

Marwaha RK, Tandon N, Garg MK, Narang A, Mehan N, Bhadra K. Normative data of body fat mass and its distribution as assessed by DXA in Indian adult population. *J Clin Densitom.* 2014;17(1):136-42. doi: 10.1016/j.jocd.2013.01.002. Abstract: Dual-energy X-ray absorptiometry (DXA) assessment of body fat mass is precise and highly correlated with under water weighing. In view of ethnic differences, we undertook this study to prepare normative data for body fat mass in apparently healthy adult Indians and correlate it with

body mass index (BMI). This cross-sectional population-based study included 2347 subjects (male: 924; female: 1423) aged >20 yr who participated in a general health examination. They were evaluated for anthropometry and body fat mass by DXA. All subjects were categorized as overweight and obese based on standard BMI criteria. Mean age and BMI were 49.1 ± 18.2 yr and 25.0 ± 4.7 kg/m², respectively. Mean percent total and regional fat (trunk, arm, and leg) reached maximum in the age group of 30-40yr in males and 50-60yr in females. Females had significantly higher total and regional fat mass compared with males. Fat mass was positively correlated with age ($r = 0.224$; $p < 0.00001$) and BMI ($r = 0.668$; $p < 0.00001$). Prevalence of overweight and obesity was seen in 2119 (46.1%) and 536 (13.8%), respectively, according to World Health Organization definition and 64.0% and 31.1%, respectively, as per Indian guidelines. Percent total body fat mass (PTBFM) of 25% in males and 30% in females corresponds to BMI of 22.0kg/m² with sensitivity of >80% and specificity of >70% in receiver operating characteristic curve analysis. Body fat mass in Indians is higher than that in Western populations for a given age and BMI. PTBFM of 25% in males and 30% in females corresponds to BMI of 22kg/m² in Indians.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/23541124>

Kokornaczyk MO, Baumgartner S, Betti L. Polycrystalline structures formed in evaporating droplets as a parameter to test the action of *Zincum metallicum* 30c in a wheat seed model. *Homeopathy.* 2016;105(2):173-9. doi: 10.1016/j.homp.2015.10.002. Background: Polycrystalline structures formed inside evaporating droplets of different biological fluids have been shown sensitive towards various influences, including ultra high dilutions (UHDs), representing so a new approach potentially useful for basic research in homeopathy. In the present study we tested on a wheat seed model *Zincum metallicum* 30c efficacy versus lactose 30c and water. Materials and methods: Stressed and non-stressed wheat seeds were watered with the three treatments. Seed-leakage droplets were evaporated

and the polycrystalline structures formed inside the droplet residues were analyzed for their local connected fractal dimensions (LCFDs) (measure of complexity) using the software ImageJ. Results: We have found significant differences in LCFD values of polycrystalline structures obtained from stressed seeds following the treatments ($p < 0.0001$); Zincum metallicum 30c lowered the structures' complexity compared to lactose 30c and water. In non-stressed seeds no significant differences were found. Conclusions: The droplet evaporation method (DEM) might represent a potentially useful tool in basic research in homeopathy. Furthermore our results suggest a sensitization of the stressed model towards the treatment action, which is conforming to previous findings.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211324>

Jyoti S, Tandon S. Impact of homeopathic remedies on the expression of lineage differentiation genes: an in vitro approach using embryonic stem cells. *Homeopathy*. 2016;105(2):148-59. doi: 10.1016/j.homp.2015.11.002. Background: Well-documented studies of the potential effects and safety of homeopathic medicines in pregnancy are required. In this study, specific genes were studied which could serve as biomarkers for specification of three lineages to predict the safety of homeopathic remedies using mouse embryonic stem (ES) cells. Thus, the present work was to study the effects of homeopathic remedies taken during pregnancy using ES cells as the model. Methods: Mouse ES cells were exposed to 30C potency of Nux Vomica and Sepia, which are homeopathic medicines prescribed for the management of pregnancy related symptoms. Cytotoxicity studies were done using a modified Embryonic Stem cell test (EST). The expression levels of key genes and proteins were analyzed using real time polymerase chain reaction and immunocytochemistry, respectively. Results: Homeopathic treatment led to modulations in the expression of certain lineage specific genes but this difference was not significant with respect to solvent control and showed normal differentiation as

demonstrated by the expression of α/β MHC and α -actinin proteins in the differentiated ES cells. Conclusions: Our study for the first time has shown the feasibility of using ES cells in the developmental toxicity testing of remedies. The results suggest that they are not associated with developmental toxicity.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211322>

Gonçalves de Freitas AT, Lemonica L, De Faveri J, Pereira S, Bedoya Henao MD. Preemptive Analgesia with Acupuncture Monitored by c-Fos Expression in Rats. *J Acupunct Meridian Stud*. 2016;9(1):16-21. doi: 10.1016/j.jams.2015.08.002. Abstract: Pain behavior and awareness are characterized by heightened alertness and anxiety, which begin to disappear as soon as the curative process starts. The present study aimed to quantify c-fos expression in rat spinal cords and brains after a surgical stimulus and with preoperative or postoperative acupuncture. Animals were randomly divided into preoperative and postoperative groups and were then further divided into control, manual acupuncture (MA), or electroacupuncture (EA) groups. Expression of c-fos was quantified using immunohistochemistry. The collected data were analyzed using the t test at a 5% probability level. Presurgery and postsurgery spinal cord c-fos expressions were similar in all of the treatment groups. In the control rats, c-fos expression was higher before surgery than after surgery, contradicting the expected outcome of acupuncture and preemptive analgesia. After treatment, the expression of c-fos in the brains of the rats in the MA and the EA groups was reduced compared with that of the rats in the control group. These findings suggest that acupuncture used as preemptive analgesia in rats is a useful model for studying its application in human treatment.

Source: [http://www.jams-kpi.com/article/S2005-2901\(15\)00148-X/pdf](http://www.jams-kpi.com/article/S2005-2901(15)00148-X/pdf)

Martínez-Ladrón de Guevara E, Pérez-Hernández N, Villalobos-López MÁ, Pérez-Ishiwara DG, Salas-Benito JS, Martínez A, Hernández-García V. The

Actions of Lyophilized Apple Peel on the Electrical Activity and Organization of the Ventricular Syncytium of the Hearts of Diabetic Rats. *J Diabetes Res*. 2016;2016:8178936. doi: 10.1155/2016/8178936. Abstract: This study was designed to examine the effects of lyophilized red delicious apple peel (RDP) on the action potentials (APs) and the input resistance-threshold current relationship. The experiments were performed on isolated papillary heart muscles from healthy male rats, healthy male rats treated with RDP, diabetic male rats, and diabetic male rats treated with RDP. The preparation was superfused with oxygenated Tyrode's solution at 37°C. The stimulation and the recording of the APs, the input resistance, and the threshold current were made using conventional electrophysiological methods. The RDP presented no significant effect in normal rats. Equivalent doses in diabetic rats reduced the APD and ARP. The relationship between input resistance and threshold current established an inverse correlation. The results indicate the following: (1) The functional structure of the cardiac ventricular syncytium in healthy rats is heterogeneous, in terms of input resistance and threshold current. Diabetes further accentuates the heterogeneity. (2) As a consequence, conduction block occurs and increases the possibility of reentrant arrhythmias. (3) These modifications in the ventricular syncytium, coupled with the increase in the ARP, are the adequate substrate so that, with diabetes, the heart becomes more arrhythmogenic. (4) RDP decreases the APD, the ARP, and most syncytium irregularity caused by diabetes.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4709627/pdf/JDR2016-8178936.pdf>

Ferrari de Andrade L, Mozeleski B, Leck AR, Rossi G, da Costa CR, de Souza Fonseca Guimarães F, Zotz R, Fialho do Nascimento K, Camargo de Oliveira C, de Freitas Buchi D, da Silva Trindade E. Inhalation therapy with M1 inhibits experimental melanoma development and metastases in mice. *Homeopathy*. 2016;105(1):109-18. doi: 10.1016/j.homp.2015.08.007. Background: M1 is a homeopathic medicine with immunostimulatory

properties used mainly by cancer patients to complement current therapies. Metastatic melanoma is a skin-originated form of cancer without a single therapy able to produce high rate and sustained responses, which attracts the use of complementary therapies such as M1. However, M1's anti-melanoma effects remain to be pre-clinically demonstrated. Therefore in the present work, we utilized a pulmonary metastatic melanoma model and a subcutaneous melanoma growth model to investigate the potential benefits of treatment with M1. Methods: C57BL/6 mice were injected intravenously or subcutaneously with B16F10 mouse melanoma cells. After 24 h, mice were treated with either M1 or vehicle (water) for 14 days, euthanized and harvested for multi-parameter pulmonary and tumor analyses. Results: Mice treated with M1 had significantly lower tumor burden in the lungs and subcutaneous tissue than control mice. Furthermore, tumors were impaired in proliferation and tumor related angiogenesis by the inhibition of myeloid derived suppressor cells (MDSC) positive for angiotensin II type 1 receptor (AT1R). Conclusion: Altogether these data suggest M1 is an efficient candidate for melanoma therapy to be considered for future clinic studies as this study is the first supporting the idea that melanoma patients may benefit with the treatment. The treatment with M1 provides advantages considering the highly-diluted properties and a cost effective alternative to costly chemotherapeutic approaches with, if any, lower toxicity.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828006>

Mutlu O, Ulak G, Kokturk S, Komsuoglu Celikyurt I, Tanyeri P, Akar F, Erden F. Effects of a dragonfly (Anax i.) homeopathic remedy on learning, memory and cell morphology in mice. *Homeopathy*. 2016;105(1):96-101. doi: 10.1016/j.homp.2015.07.004. Background: Homeopathy is a form of alternative medicine in which uses highly diluted preparations that are believed to cause healthy people to exhibit symptoms similar to those exhibited by patients. The aim of this study was to investigate the effects of dragonfly (Anax imperator,

Anax i.) on learning and memory in naive mice using the Morris water maze (MWM) test; moreover, the effects of dragonfly on MK-801-induced cognitive dysfunction were evaluated. Methods: Male balb-c mice were treated with dragonfly (30C and 200C) or MK-801 (0.2 mg/kg) alone or concurrently (n = 10). Dragonfly (D) and MK-801 were administered subchronically for 6 days intraperitoneally 60 min and 30 min, respectively, before the daily performance of the MWM test. Results: This study revealed that in the familiarization session and first session of the MWM test, Anax i. D30 significantly decreased escape latency compared to the control group, although MK-801, D30 and D200 significantly increased escape latency at the end of five acquisition sessions. Anax i. combined with dizocilpine maleate (MK-801) also significantly decreased escape latency in the familiarization session and first session of the MWM test, although this combination increased escape latency compared to the MK-801 alone group at the end of the test. Time spent in escape platform's quadrant in the probe trial significantly decreased while mean distance to platform significantly increased in MK-801, D30 and D200 groups. In the MWM test, Anax i. combined with MK-801 significantly decreased speed of the animals compared to the MK-801 alone group. General cell morphology was disturbed in the MK-801 group while D30 and D200 seemed to improve cell damage in the MK-801 group. Conclusions: These results suggest that the homeopathic Anax i. can impair learning acquisition and reference memory, and it has beneficial effects on disturbed cell morphology.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828004>

Cartwright SJ. Solvatochromic dyes detect the presence of homeopathic potencies. *Homeopathy*. 2016;105(1):55-65. doi: 10.1016/j.homp.2015.08.002. Abstract: A systematic approach to the design of simple, chemical systems for investigating the nature of homeopathic medicines has led to the development of an experimental protocol in which solvatochromic dyes are used as molecular probes of serially diluted and agitated solutions. Electronic spectroscopy has been

used to follow changes in the absorbance of this class of dyes across the visible spectrum in the presence of homeopathic potencies. Evidence is presented using six different solvatochromic dyes in three different solvent systems. In all cases homeopathic potencies produce consistent and reproducible changes in the spectra of the dyes. Results suggest that potencies influence the supramolecular chemistry of solvatochromic dyes, enhancing either dye aggregation or disaggregation, depending upon dye structure. Comparable dyes lacking the intramolecular charge transfer feature of solvatochromic dyes are unaffected by homeopathic potencies, suggesting potencies require the oscillating dipole of solvatochromic dyes for effective interaction. The implications of the results presented, both for an eventual understanding of the nature of homeopathic medicines and their mode of action, together with future directions for research in this area, are discussed.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(15\)00062-4/pdf](http://www.homeopathyjournal.net/article/S1475-4916(15)00062-4/pdf)

Lee KJ, Yeo MG. Homeopathic Rhus toxicodendron has dual effects on the inflammatory response in the mouse preosteoblastic cell line MC3T3-e1. *Homeopathy*. 2016;105(1):42-7. doi: 10.1016/j.homp.2015.09.004. Background: Homeopathic remedy Rhus toxicodendron (Rhus tox) is used for several symptoms including skin irritations, rheumatic pains, mucous membrane afflictions, and typhoid type fever. Previously, we reported that Rhus tox treatment increased the cyclooxygenase-2 (COX-2) mRNA expression in primary cultured mouse chondrocytes. Methods: A preosteoblastic mouse cell line, MC3T3-e1, was treated with different homeopathic dilutions of Rhus tox and the COX-2 mRNA and protein expression was examined using reverse transcriptase-polymerase chain reaction (RT-PCR) and immunoblotting. Additionally, nitric oxide (NO) generation was examined in LPS-induced MC3T3-e1 cells using a Griess reaction assay. Results: Stimulation with different concentrations of Rhus tox increased the expression of Cox2 mRNA, with 30X Rhus tox showing the most prominent increase in mRNA

expression. In addition, treatment with 30X Rhus tox significantly increased prostaglandin E2 (PGE2) release compared with other homeopathic dilutions. However, the COX-2 protein expression level differed slightly from its mRNA expression, because the 30C Rhus tox treatment increased COX-2 protein to a greater extent compared with other dilutions. NO generation was dramatically decreased in MC3T3-e1 cells after Rhus tox treatment co-stimulated with lipopolysaccharide. Conclusion: Homeopathic dilution of Rhus tox has a dual activity that increases COX-2 expression and decreases NO generation, thus modulating inflammation. Further study is needed to examine the cellular signaling mechanisms that are associated with inflammatory regulation by Rhus tox treatment in greater detail.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26827996>

Schulte J, Endler PC. Update on preliminary elements of a theory of ultra high dilutions. *Homeopathy*. 2015;104(4):337-42. doi: 10.1016/j.homp.2015.09.010. Introduction: The different mechanisms: A. of the interaction between the molecular mother substance and the solvent water or ethanol B. of the storage of molecule-specific information in the solvent. C. the physiological basis of the sensitivity of the living organism towards an ultra high dilution (UHD). D. the mechanism of the interaction of the test dilution with the organism are largely unknown. Several ideas have been postulated, and experiments to test them carried out in physics and in biology. Method: The authors revisited a 1994 contribution on 'preliminary elements of a theory on UHDs' and updated it with regard to more recent literature and research findings. Results: Although the experimental basis can still be questioned in most cases, remarkable fundamental observations have been made to explain the effects of UHDs. For some topics in question, it appears that information specific properties of the diluted substance to be transferred is stored by means electromagnetic fields. The interaction between the UHD and the organism seems to be electromagnetic in nature. The transmission of information from (bio-)molecules to the

UHD is of special interest. Again, electromagnetic actions and vector potential fields appear to be implicated. Conclusion: The mechanisms of information storage and transfer in UHDs are far from fully understood, but progress has been made at experimental and theoretical levels.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678740>

Stock-Schröer B. v Reporting Experiments in Homeopathic Basic Research (REHBaR). *Homeopathy*. 2015;104(4):333-6. doi: 10.1016/j.homp.2015.06.006. Introduction: The aim of this study was to develop a criteria catalogue serving as a guideline for authors to improve quality of Reporting Experiments in Homeopathic Basic Research (REHBaR). Main focus was in the field of biochemical and biological experiments. So far, there was no guideline for scientists and authors available, unlike criteria catalogues common in clinical research. Methods: A Delphi Process was conducted among experts who published experimental work within the last five years in this field. The process included a total of five rounds, three rounds of adjusting and phrasing plus two consensus conferences. Results: A checklist of 23 items was achieved, augmented with detailed examples how to handle each item while compiling a publication. Background, objectives and possible hypotheses are necessary to be given in the part 'introduction'. The section 'materials and methods' is the most important part, where a detailed description of chosen controls, object of investigation, experimental setup, replication, parameters, intervention, allocation, blinding, and statistical methods is mandatory. In the 'results' section sufficient details on analysed data, descriptive as well as inferential are needed. Moreover, authors should discuss their results and interpret them in the context of current evidence. REHBaR was compiled for authors when preparing their manuscripts, and to be used by scientific journals in the reviewing process. Conclusions: Reporting experiments in basic research in homeopathy is an important issue to state the quality and validity of gained results. A guideline for REHBaR seemed to be the first step to come to a

commitment what information is necessary to be given in a paper. More than that, the catalogue can serve as a statement what the standards in good basic research should be.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678739>

Schulte J. Observations on entanglement, non-locality and ultra-high dilutions. *Homeopathy*. 2015;104(4):316-21. doi: 10.1016/j.homp.2015.06.010. Introduction: Fundamental research into the scientific basis of the manufacture of ultra-high dilutions and their working in applications has evolved over the past twenty years since our last critical analysis of the field was published in 1994. New contenders from the realm of physics (entanglement, non-locality) have entered the scene. The vast majority within the community of the application of ultra-high dilutions are not physicists. This paper attempts to elucidate the concepts of entanglement, non-locality and their application in ultra-high dilution research (UHD). Method: A selected study on the activity of fundamental research into UHD is performed to gain insight into trends of development activity of fundamental research in this area. In an attempt to nurture further development of theoretical models in fundamental research in UHD, an attempt is made to made recent theoretical concepts more accessible to the larger community including practitioners, policy makers and beneficiaries of UHD. Results: Fundamental research in UHD had a period of prolific activity and recognition at the turn of the millennium until about ten years ago. Since then, research output as well as its recognition receded sharply suggesting that a period of reflection and consolidation may be in progress. Conclusion: The study and the knowledge gained from more recent theoretical models in UHD and entanglement suggest that there may be some benefit in stocktaking of what we really know about the fundamental workings of UHD as well as identifying or developing models that include measurable predictors that go beyond metaphorical descriptors.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678736>

Schulte J. Publications on experimental physical methods to investigate ultra high dilutions--an assessment on quality. *Homeopathy*. 2015;104(4):311-5. doi: 10.1016/j.homp.2015.06.004. Introduction: Our first evaluation of fundamental research into the physics and physiology of Ultra High Dilution (UHD) was conducted in 1994. Since then, in 2003, Becker-Witt et al. conducted a more systematic evaluation of the literature and established the Score for Assessment of Physical Experiments on Homeopathy (SAPEH). While this evaluation focused on experimental methodologies, Stock-Schröer et al., in 2009, formulated a detailed guideline for authors on Reporting Experiments in Homeopathic Basic research (REHBaR) to promote a high standard in research as well as in its communication in scientific literature. Method: In this paper, we evaluate publications on basic research into the physics of UHD since the decade following the presentation of the SAPEH score (2004-2014), and present the state of progress in this field. Results: Fundamental research into the physics of UHD has been reported at a steady rate over the past 60 years. Reported research of high quality as per SAPEH scoring appears to be still the exception rather than standard. Conclusion: Considering the importance of a fundamental understanding of what makes a UHD preparation, results of this study suggest that it may be beneficial to this field of fundamental research if grant challenges are approached in strategic way similar to other grant challenges in science.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678735>

Schulte J. Experimental physical methods and theories--then and now. *Homeopathy*. 2015;104(4):305-10. doi: 10.1016/j.homp.2015.06.005. Introduction: A first evaluation of fundamental research into the physics and physiology of Ultra high dilutions (UHDs) was conducted by the author in 1994(1). In this paper we revisit methods and theories from back then and follow their

paths through their evolution and contribution to new knowledge in UHD research since then. Method: Physical methods and theories discusses in our anthology on UHD in 1994(1) form the basis for tracing ideas and findings along their path of further development and impact on new knowledge in UHD. Results: Experimental approaches to probe physical changes in homeopathic preparations have become more sophisticated over past two decades, so did the desire to report results to a scientific standard that is on par with those in specialist literature. The same cannot be said about underlying supporting theoretical models and simulations. Conclusion: Grant challenges in science often take a more targeted and more concerted approach to formulate a research question and then look for answers. A concerted effort to focus on one hypothesized physical aspect of a well-defined homeopathic preparation may help aligning experimental methods with theoretical models and, in doing so, help to gain a deeper understanding of the whole body of insights and data produced.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678734>

Smith CW. Electromagnetic and magnetic vector potential bio-information and water. Homeopathy. 2015;104(4):301-4. doi: 10.1016/j.homp.2015.08.006. Abstract: This work developed over the past 40 years starting from dielectric measurements on enzymes and the subsequent finding that the measurements were affected by electric, magnetic, electromagnetic fields and quantum fields. A request for help in the diagnosis and therapy of chemically sensitive patients who had become sensitive to their electromagnetic environment came in 1982. The same symptoms could be provoked by a chemical or a frequency challenge and this led to an appreciation of the synergy between chemical and frequency environmental sensitivities. Experimental cooperation with theoretical physicist Herbert Fröhlich FRS and others led to an understanding of the physics of coherent water in living systems and a mechanism for the memory of water for coherent frequencies. In a coherent system there are interacting frequencies

proportionate to any velocity the system will support, in particular the velocity of light and the velocity of coherence diffusion. Thus, there can be biological interaction between the optical, microwave and ELF spectral regions. Frequency modulation of light scattered by bio-fields and its retention in recorded images is discussed. A 'nil-potent' frequency can erase a frequency signature and thence affect a biological system. Homeopathy is interpreted through the biological effects of coherent frequencies derived from the frequency signature of the 'Mother Tincture' and developed through dilution and succussion. A homeopathic potency has a frequency signature therefore it must be able to have a biological effect.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678733>

Thomas Y. From high dilutions to digital biology: the physical nature of the biological signal. Homeopathy. 2015;104(4):295-300. doi:

10.1016/j.homp.2015.06.008. Abstract: The memory of water was a radical idea that arose in the laboratory of Jacques Benveniste in the late 1980s. Twenty-five years have passed and yet the often angry debate on its merits continues despite the increasing number of scientists who have reported confirmation of the basic results. One working hypothesis was that molecules can communicate with each other, exchanging information without being in physical contact and that at least some biological functions can be mimicked by certain energetic modes characteristics of a given molecule. These considerations informed exploratory research which led to the speculation that biological signaling might be transmissible by electromagnetic means. Around 1991, the transfer of specific molecular signals to sensitive biological systems was achieved using an amplifier and electromagnetic coils. In 1995, a more sophisticated procedure was established to record, digitize and replay these signals using a multimedia computer. From a physical and chemical perspective, these experiments pose a riddle, since it is not clear what mechanism can sustain such 'water memory' of the exposure to molecular signals. From a biological

perspective, the puzzle is what nature of imprinted effect (water structure) can impact biological function. A parallel can be drawn between this debate on the memory of water, which presumes that the action of molecules is mediated by an electromagnetic phenomenon, and the often acrimonious debate on the transmission of nerve influxes via synaptic transfer of specific molecules, neurotransmitters. The latter debate began in 1921 with the first experiments by Loewi and was still active in 1949, 28 years later. A strong reluctance to accept research that questions basic aspects of long-accepted biochemical paradigms is to be expected. In this paper we will provide a brief summary of experiments relating to the memory of water: the earlier work on high dilutions (HD) and then the experiments, which followed and continue today, on digital biology.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678732>

Jäger T, Scherr C, Shah D, Majewsky V, Wolf U, Betti L, Baumgartner S. The use of plant-based bioassays in homeopathic basic research. *Homeopathy*. 2015;104(4):277-82. doi: 10.1016/j.homp.2015.06.009. Objectives: The objective was to evaluate homeopathic basic research studies that use plant-based bioassays. With this in view, a compilation was made of the findings of three systematic literature reviews covering plant-based bioassays in the three fields of healthy, abiotically, or biotically stressed plants. This compilation focused on investigations using advanced experimental methods and detailed descriptions, also with the aim of supporting the design of future experiments. Methods: Publications included had to report on studies into the effects of homeopathic preparations on whole plants, seeds, plant parts and cells. Outcomes had to be measured by established procedures and statistically evaluated. A Manuscript Information Score (MIS) was applied using predefined criteria to identify publications with sufficient information for adequate interpretation ($MIS \geq 5$). Additional evaluation focused on the use of adequate controls to investigate specific effects of homeopathic preparations, and on the use of

systematic negative control (SNC) experiments to ensure the stability of the bioassay. Only a fraction of the studies reported here were performed with 'ultra high' dilutions, whereas other studies were performed with moderate or high dilutions. Results: A total of 157 publications were identified, describing a total of 167 experimental studies. 84 studies included statistics and 48 had a $MIS \geq 5$, thus allowing adequate interpretation. 29 studies had adequate controls to identify specific effects of homeopathic preparations, and reported significant effects of decimal and centesimal homeopathic potencies, including dilution levels beyond Avogadro's number. 10 studies reported use of SNC experiments, yielding evidence for the stability of the experimental set-up. Conclusion: Plant models appear to be a useful approach for investigating basic research questions relating to homeopathic preparations, but more independent replication trials are needed in order to verify the results found in single experiments. Adequate controls and SNC experiments should be implemented on a routine basis to exclude false-positive results.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678729>

Endler PC, Scherer-Pongratz W, Harrer B, Lingg G, Lothaller H. Amphibians and ultra high diluted thyroxine--further experiments and re-analysis of data. *Homeopathy*. 2015;104(4):250-6. doi: 10.1016/j.homp.2015.10.001. Background: A model of thyroxine and metamorphosis of highland amphibians is frequently mentioned as an example of experiments on extremely diluted substances in discussions around 'homeopathy'. Methods: The model was scrutinized by reanalysing the results of the initial researcher A and a second researcher B as well as of 5 external researchers C between 1990 and 2013. *Rana temporaria* larvae were taken from an alpine highland biotope. The test solution was thyroxine 10(-30) (T30x), tetra-iodo-thyronine sodium pentahydrate diluted with pure water in 26 steps of 1:10, being agitated after each step. Analogously prepared water (W30x) was used for control. Tadpoles were observed from the 2-legged to

the 4-legged stage. Experiments were performed in different years, at different times of season, and their duration could vary. Frequencies of 4-legged animals, effect sizes and areas under the curves (AUCs) were calculated and regression analyses were performed to investigate possible correlations between year, season, duration etc. Experiments were in line with animal protection guidelines. Results: The total set of data A + B + C as well as subsets A (initial researcher, N=286+293), B (second centre, 965 + 965) and C (5 external researchers, 690 + 690) showed an effect of extremely diluted agitated thyroxine reverse to that known of molecular thyroxine, i.e. test values were below control by 11.4% for A, 9.5% for B and 7.0% for C ($p < 0.001$ for each of the subsets). The effect size (Cohen's d) was > 0.8 (large) for both A and B and 0.74 (medium) for C. Conclusion: Although a perfect reproducibility was not obtained, this paradoxical phenomenon was generally consistent in different observations. Correlations were found between details of laboratory handling, as well as environment temperature, and the size of the results.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678725>

Anushree B, Fawaz MA, Narahari R, Shahela T, Syed A. Comparison of Antimicrobial Efficacy of Triclosan-Containing, Herbal and Homeopathy Toothpastes- An Invitro Study. *J Clin Diagn Res.* 2015;9(10):DC05-8. doi: 10.7860/JCDR/2015/11984.6626. Background: Use of antimicrobial agents is one of the important strategies to prevent oral diseases. These agents vary in their abilities to deliver preventive and therapeutic benefits. Objectives: This invitro study was conducted to assess antimicrobial efficacy of different toothpastes against various oral pathogens. Materials and methods: A total of nine toothpastes in three groups were tested for their antimicrobial activity against *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC 25923), *Streptococcus mutans* (ATCC 0266P) and *Candida albicans* (Laboratory Strain) by modified agar well diffusion method. Statistical Analysis was performed using Minitab Software. A p-value of less than 0.05 was

considered significant. Results: Triclosan-based dental formulation with combination of fluoride (1000ppm) exhibited higher antimicrobial activity against test organisms than the combination of lower fluoride-concentration or sodium monofluorophosphate. Among herbal dentifrices, formulation containing Neem, Pudina, Long, Babool, Turmeric and Vajradanti showed significant antimicrobial activity against all the four tested microorganisms ($p < 0.05$). However, against *Streptococcus mutans*, all three herbal products showed significant antimicrobial activity. Homeo products showed least antimicrobial activity on the tested strains. Formulation with kreosotum, *Plantago major* and *calendula* was significantly effective only against *Streptococcus mutans*. Conclusion: In the present study, antimicrobial activity of the toothpaste containing both triclosan and fluoride (1000ppm) as active ingredients showed a significant difference ($p < 0.05$) against all four tested microflora compared to that of with lower fluoride-concentration or sodium monofluorophosphate. Of herbal groups, the only dentifrice containing several phytochemicals was found to be significantly effective and comparable to triclosan-fluoride (1000ppm) formulation. Thus, this herbal toothpaste can be used as alternative to triclosan-based formulations. However, these results might not be clinically useful unless tested invivo.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4625235/pdf/jcdr-9-DC05.pdf>

Bishayee K, Mondal J, Sikdar S, Khuda-Bukhsh AR. Condurango (*Gonolobus condurango*) Extract Activates Fas Receptor and Depolarizes Mitochondrial Membrane Potential to Induce ROS-dependent Apoptosis in Cancer Cells in vitro: CE-treatment on HeLa: a ROS-dependent mechanism. *J Pharmacopuncture.* 2015;18(3):32-41. doi: 10.3831/KPI.2015.18.022. Objectives: Condurango (*Gonolobus condurango*) extract is used by complementary and alternative medicine (CAM) practitioners as a traditional medicine, including homeopathy, mainly for the treatment of syphilis. Condurango bark extract is also known to reduce tumor

volume, but the underlying molecular mechanisms still remain unclear. Methods: Using a cervical cancer cell line (HeLa) as our model, the molecular events behind condurango extract's (CE's) anticancer effect were investigated by using flow cytometry, immunoblotting and reverse transcriptase-polymerase chain reaction (RT-PCR). Other included cell types were prostate cancer cells (PC3), transformed liver cells (WRL-68), and peripheral blood mononuclear cells (PBMCs). Results: Condurango extract (CE) was found to be cytotoxic against target cells, and this was significantly deactivated in the presence of N-acetyl cysteine (NAC), a scavenger of reactive oxygen species (ROS), suggesting that its action could be mediated through ROS generation. CE caused an increase in the HeLa cell population containing deoxyribonucleic acid (DNA) damage at the G zero/Growth 1 (G0/G1) stage. Further, CE increased the tumor necrosis factor alpha (TNF- α) and the fas receptor (FasR) levels both at the ribonucleic acid (RNA) and the protein levels, indicating that CE might have a cytotoxic mechanism of action. CE also triggered a sharp decrease in the expression of nuclear factor kappa-light-chain-enhancer of activated B cells (NF- κ B) both at the RNA and the protein levels, a possible route to attenuation of B-cell lymphoma 2 (Bcl-2), and caused an opening of the mitochondrial membrane's permeability transition (MPT) pores, thus enhancing caspase activities. Conclusion: Overall, our results suggest possible pathways for CE mediated cytotoxicity in model cancer cells.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4573805/pdf/2093-6966-v18-n03-032.pdf>

Bell IR, Sarter B, Standish LJ, Banerji P, Banerji P. Low Doses of Traditional Nanophytomedicines for Clinical Treatment: Manufacturing Processes and Nonlinear Response Patterns. *J Nanosci Nanotechnol*. 2015;15(6):4021-38. Abstract: The purpose of the present paper is to (a) summarize evidence for the nanoparticle nature and biological effects of traditional homeopathically-prepared medicines at low and ultralow doses; (b) provide details of historically-based

homeopathic green manufacturing materials and methods, relating them to top-down mechanical attrition and plant-based biosynthetic processes in modern nanotechnology; (c) outline the potential roles of nonlinear dose-responses and dynamical interactions with complex adaptive systems in generating endogenous amplification processes during low dose treatment. Possible mechanisms of low dose effects, for which there is evidence involving nanoparticles and/or homeopathically-manufactured medicines, include hormesis, time-dependent sensitization, and stochastic resonance. All of the proposed mechanisms depend upon endogenous nonlinear amplification processes in the recipient organism in interaction with the salient, albeit weak signal properties of the medicine. Conventional ligand-receptor mechanisms relevant to higher doses are less likely involved. Effects, especially for homeopathically-prepared nanophytomedicines, include bidirectional host state-dependent changes in function. Homeopathic clinicians report successful treatment of serious infections and cancers. Preclinical biological evidence is consistent with such claims. Controlled biological data on homeopathically-prepared medicines indicate modulation of gene expression and biological signaling pathways regulating cell cycles, immune reactions, and central nervous system function from studies on cells, animals, and human subjects. As a 200-year old system of traditional medicine used by millions of people worldwide, homeopathy offers a pulsed low dose treatment strategy and strong safety record to facilitate progress in translational nanomedicine with plants and other natural products. In turn, modern nanotechnology methods can improve homeopathic manufacturing procedures, characterize nanoparticle end-products, and describe interactions of homeopathic nanophytomedicines with living systems at the nanoparticle and even individual organism level of detection. Faster progress toward safe and effective personalized nanophytomedicine treatments can result.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26369009>

Gorlowska K, Gorlowska J, Skibiński R, Komsta Ł. Chemometrics meets homeopathy--an exploratory analysis of infrared spectra of homeopathic granules. *J Pharm Biomed Anal.* 2015;115:36-8. doi: 10.1016/j.jpba.2015.06.025. Abstract: 10 homeopathic remedies commercially available (each in 3 dilutions) as sugar granules, where half of them were of organic (and half inorganic) origin were subjected to solid-state infrared spectroscopy, both in middle infrared (ATR-FTIR) and near infrared (NIR) range. Measurements were repeated six times (six days, each sample was measured once in the same day, samples were measured in random order). The obtained spectra was subjected to unsupervised (PCA) and supervised (PLS-DA) chemometric techniques to check any visible differences in spectral data between homeopathic remedies, including also feature selection approaches. It can be concluded that the only one information encoded in this dataset is the atmospheric drift of spectra between consecutive measurement days. This proves that homeopathy is not "infrared visible" in the case of proper experimental design. These results can be useful in further investigations of possible mechanisms of action of homeopathy (if they exist).

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26148470>

Remya V, Kuttan G. Homeopathic remedies with antineoplastic properties have immunomodulatory effects in experimental animals. *Homeopathy.* 2015;104(3):211-9. doi: 10.1016/j.homp.2014.11.004. Background: Our previous work suggests that *Thuja occidentalis*, *Carcinosinum* and *Ruta graveolens* have antineoplastic properties. The mechanism of this action has not previously been studied. We studied the hypothesis that the mechanism of action is through the immune modulation. Methods: We evaluated the effects of *Thuja occidentalis*, *Carcinosinum* and *Ruta graveolens* 1M, 200c and 30c on the immune system of Balb/c mice. The homeopathic preparations were administered orally for ten consecutive days. Haematological parameters (Total White Blood Cell (WBC) Count, Differential Count and Haemoglobin

content), haematopoietic parameters (bone marrow cellularity and α -esterase positive cells) and immune parameters for antibody response and lymphoid cell proliferation were assessed using standard methods. Results were analysed by statistical comparison with the control. Results: We observed significant enhancement of haematological parameters including total WBC count, haematopoietic parameters such as bone marrow cellularity and the number of α -esterase positive cells, other parameters of immune response such as circulating antibody titre and the number of plaque forming cells (PFC), particularly with higher dilutions of *Thuja* and *Ruta*. Enhanced proliferation of B and T lymphoid cells was also observed. No toxic effects were observed. Conclusions: The results suggest immunomodulatory activity of homeopathic preparations in high dilution. This may be a mechanism through which homeopathic preparations act.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143455>

Karabacak M, Eraslan G, Kanbur M, Sarıca ZS. Effects of *Tarantula cubensis* D6 on aflatoxin-induced injury in biochemical parameters in rats. *Homeopathy.* 2015;104(3):205-10. doi: 10.1016/j.homp.2015.02.005. Introduction: Aflatoxins are toxic fungal metabolites that have adverse effects on humans and animals. *Tarantula cubensis* D6 is used as a homeopathic medicine for different purposes. The present study investigates the effects of *Tarantula cubensis* D6 on the oxidant-antioxidant balance and some biochemical parameters against exposure to aflatoxin. Methods: Thirty-two Sprague-Dawley female rats were used and evenly divided into four groups. Group 1 served as control. Groups 2, 3, and 4 received 200 μ l/kg.bw/day *Tarantula cubensis* D6 (applied subcutaneously), 400 μ g/kg.bw/day total aflatoxin (approximately 80% AF B1, 10% AF B2, 6 %AF G1, and 4% AF G2), and 200 μ l/kg.bw/day *Tarantula cubensis* D6 plus 400 μ g/kg.bw/day total aflatoxin, respectively, for 28 days. At the end of 28 days, blood samples and some organs (liver, kidney, brain, and spleen) were taken from all the animals. Oxidative stress markers (MDA, SOD, CAT, GSH-

Px) and some biochemical parameters (glucose, triglyceride, cholesterol, BUN, creatinine, AST, ALT and ALP, total protein, albumin) were evaluated in blood samples and tissues. Results: Aflatoxin caused negative changes in all oxidative stress parameters and some biochemical parameters (glucose, triglyceride, cholesterol, creatinine, AST, ALT, ALP, total protein, albumin). Administration of *Tarantula cubensis* D6 partly alleviated aflatoxin-induced negative changes. Conclusions: Our results indicated that *Tarantula cubensis* D6 partially neutralized the deleterious effects of aflatoxin.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143454>

Tupe RS, Kulkarni A, Adeshara K, Shaikh S, Shah N, Jadhav A. *Syzygium jambolanum* and *Cephalandra indica* homeopathic preparations inhibit albumin glycation and protect erythrocytes: an in vitro study. *Homeopathy*. 2015;104(3):197-204. doi: 10.1016/j.homp.2015.02.009. Background: Diabetes mellitus is a common endocrine disorder characterized by hyperglycemia eventually resulting in long-term complications. Increased glycation of proteins is implicated in the pathogenesis of complications. For treatment of diabetes, *Syzygium jambolanum* and *Cephalandra indica* are frequently prescribed in homeopathy. However their role in glycation is not well elucidated. The present study aimed to evaluate the role of these homeopathic preparations in glycation induced structural modifications and further to examine their cellular protection ability. Methods: In human erythrocytes, in vitro mother tincture and dilutions of *S. jambolanum* (Sj ϕ , 30c, 200c), *C. indica* (Ci ϕ , 30c, 200c) and standard antiglycator (AG) were compared and their antiglycation potential assessed by the estimating different markers of glycation (fructosamines, carbonyls, bound sugar), structural modifications (free amino and thiol group). Phytochemical characterization (total phenolic, flavonoids and glycosides contents) was performed. Results: The homeopathic preparations have different mode of action on albumin glycation modifications. Sj ϕ preparation demonstrated effective

inhibition of all glycation, structural modifications except amino group protection. When dilutions were compared, Sj preparations showed reduction of glycation, structural modifications. All preparations showed significant erythrocyte protection. Sj ϕ preparation exhibited noteworthy antiglycation and cell protection ability as compared to AG. Conclusion: These homeopathic preparations especially Sj ϕ prevented glycation induced albumin modifications and subsequent toxicity in human erythrocyte in vitro. Further investigation of their potential as antiglycators is justified.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143453>

Saha S, Bhattacharjee P, Guha D, Kajal K, Khan P, Chakraborty S, Mukherjee S, Paul S, Manchanda R, Khurana A, Nayak D, Chakrabarty R, Sa G, Das T. Sulphur alters NF κ B-p300 cross-talk in favour of p53-p300 to induce apoptosis in non-small cell lung carcinoma. *Int J Oncol*. 2015;47(2):573-82. doi: 10.3892/ijo.2015.3061. Abstract: Adverse side effects of chemotherapy during cancer treatment have shifted considerable focus towards therapies that are not only targeted but are also devoid of toxic side effects. We evaluated the antitumorigenic activity of sulphur, and delineated the molecular mechanisms underlying sulphur-induced apoptosis in non-small cell lung carcinoma (NSCLC) cells. A search for the underlying mechanism revealed that the choice between the two cellular processes, NF κ Bp65-mediated survival and p53-mediated apoptosis, was decided by the competition for a limited pool of transcriptional coactivator protein p300 in NSCLC cells. In contrast, sulphur inhibited otherwise upregulated survival signaling in NSCLC cells by perturbing the nuclear translocation of p65NF κ B, its association with p300 histone acetylase, and subsequent transcription of Bcl-2. Under such anti-survival condition, induction of p53-p300 cross-talk enhanced the transcriptional activity of p53 and intrinsic mitochondrial death cascade. Overall, the findings of this preclinical study clearly delineated the molecular mechanism underlying the apoptogenic effect of the

non-toxic homeopathic remedy, sulphur, in NSCLC cells.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26095308>

Bellavite P, Signorini A, Marzotto M, Moratti E, Bonafini C, Oliosio D. Cell sensitivity, non-linearity and inverse effects. *Homeopathy*. 2015;104(2):139-60. doi: 10.1016/j.homp.2015.02.002. Abstract: It has been claimed that the homeopathic principle of 'similarity' (or 'similia') and the use of individualized remedies in extremely low doses conflicts with scientific laws, but this opinion can be disputed on the basis of recent scientific advances. Several mechanisms to explain the responsiveness of cells to ultra-low doses and the similarity as inversion of drug effects, have again been suggested in the framework of hormesis and modern paradoxical pharmacology. Low doses or high dilutions of a drug interact only with the enhanced sensitivities of regulatory systems, functioning as minute harmful stimuli to trigger specific compensatory healing reactions. Here we review hypotheses about homeopathic drug action at cellular and molecular levels, and present a new conceptual model of the principle of similarity based on allosteric drug action. While many common drugs act through orthostatic chemical interactions aimed at blocking undesired activities of enzymes or receptors, allosteric interactions are associated with dynamic conformational changes and functional transitions in target proteins, which enhance or inhibit specific cellular actions in normal or disease states. The concept of allostery and the way it controls physiological activities can be broadened to include diluted/dynamized compounds, and may constitute a working hypothesis for the study of molecular mechanisms underlying the inversion of drug effects.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(15\)00005-3/pdf](http://www.homeopathyjournal.net/article/S1475-4916(15)00005-3/pdf)

Bell IR, Schwartz GE. Enhancement of adaptive biological effects by nanotechnology preparation methods in homeopathic medicines. *Homeopathy*.

2015;104(2):123-38. doi: 10.1016/j.homp.2014.11.003.

Abstract: Multiple studies have demonstrated that traditional homeopathic manufacturing reagents and processes can generate remedy source and silica nanoparticles (NPs). Homeopathically-made NPs would initiate adaptive changes in an organism as a complex adaptive system (CAS) or network. Adaptive changes would emerge from several different endogenous amplification processes that respond to exogenous danger or threat signals that manufactured nanomaterials convey, including (1) stochastic resonance (SR) in sensory neural systems and (2) time-dependent sensitization (TDS)/oscillation. SR is nonlinear coherent amplification of a weak signal by the superposition of a larger magnitude white noise containing within it the same frequencies of the weak signal. TDS is progressive response magnitude amplification and oscillatory reversal in response direction to a given low dose at physiological limits with the passage of time. Hormesis is an overarching adaptive phenomenon that reflects the observed nonlinear adaptive dose-response relationship. Remedies would act as enhanced micro- and nanoscale forms of their source material via direct local ligand-receptor interactions at very low potencies and/or by triggering systemic adaptive network dynamical effects via their NP-based electromagnetic, optical, and quantum mechanical properties at higher potencies. Manufacturing parameters including dilution modify sizes, shapes, and surface charges of nanoparticles, thereby causing differences in physico-chemical properties and biological effects. Based on surface area, size, shape, and charge, nanoparticles adsorb a complex pattern of serum proteins, forming a protein corona on contact that constitutes a unique biological identity. The protein corona may capture individualized dysfunctional biological mediator information of the organism onto the surfaces of the salient, i.e., resonant, remedy nanostructures. SR would amplify this weak signal from the salient remedy NPs with protein corona adsorbed, leading to sensitized nonlinear dynamical modulation of gene expression and associated changes

in biological signaling pathways. When the system reaches its physiological limits during a homeopathic aggravation or the natural disease state, the amplified remedy signal triggers a nonlinear reversal in dynamical direction back towards health.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869977>

Dei A, Bernardini S. Hormetic effects of extremely diluted solutions on gene expression. *Homeopathy*. 2015;104(2):116-22. doi: 10.1016/j.homp.2015.02.008. Abstract: This paper summarizes the results of investigations showing how molecular biological tools, such as DNA-microarrays, can provide useful suggestions about the behaviour of human organisms treated with microamounts of drugs or homeopathic medicines. The results reviewed here suggest firstly that the action of drugs is not quenched by ultra-high dilution and proceeds through modulation of gene expressions. The efficacy of drug solutions seems to be maintained in ultra-highly diluted preparations, a fact which constitutes a challenge to the dogma of quantization of matter. The second and more important result is that the different gene expression profiles of cell systems treated with the same drugs at different dilutions suggest the existence of hormetic mechanisms. The gene expression profiles of cells treated with copper(II) sulfate, *Gelsemium sempervirens* and *Apis mellifica*, are characterized by the same common denominator of the concentration-dependent inversion of gene expression, which can justify at a molecular level the concept of simile adopted in homeopathy. The main conclusion we draw from these results is that these procedures provide new kinds of information and a tool for disclosing the mechanisms involved in hormetic effects. The application of these effects to modern medicine may allow researchers to conceive unprecedented therapeutic applications or to optimize the currently used ones in the framework of a low-dose pharmacology based on a reliable experimental platform.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869976>

Demangeat JL. Gas nanobubbles and aqueous nanostructures: the crucial role of dynamization. *Homeopathy*. 2015;104(2):101-15. doi: 10.1016/j.homp.2015.02.001. Abstract: Nanobubbles (NBs) have been a subject of intensive research over the past decade. Their peculiar characteristics, including extremely low buoyancy, longevity, enhanced solubility of oxygen in water, zeta potentials and burst during collapse, have led to many applications in the industrial, biological and medical fields. NBs may form spontaneously from dissolved gas but the process is greatly enhanced by gas supersaturation and mechanical actions such as dynamization. Therefore, the formation of NBs during the preparation of homeopathic dilutions under atmospheric pressure cannot be ignored. I suggested in 2009 the involvement of NBs in nanometric superstructures revealed in high dilutions using NMR relaxation. These superstructures seemed to increase in size with dilution, well into the ultramolecular range (>12c). I report here new experiments that confirm the involvement of NBs and prove the crucial role of dynamization to create superstructures specific to the solute. A second dynamization was shown to enhance or regenerate these superstructures. I postulate that superstructures result from a nucleation process of NBs around the solute, with shells of highly organized water (with ions and silicates if any) which protect the solute against out-diffusion and behave as nucleation centres for further dilution steps. The sampling tip may play an active role by catching the superstructures and thus carry the encaged solute across the dilution range, possibly up to the ultramolecular range. The superstructures were not observed at low dilution, probably because of a destructuring of the solvent by the solute and/or of an inadequate gas/solute ratio.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869975>

Mishra G, Khosa RL, Singh P, Jha KK. Hepatoprotective potential of ethanolic extract of *Pandanus*

odoratissimus root against paracetamol-induced hepatotoxicity in rats. *J Pharm Bioallied Sci.* 2015;7(1):45-8. doi: 10.4103/0975-7406.148776. Background: *Pandanus odoratissimus* (Pandanaceae) is popular in the indigenous system of medicines like Ayurveda, Siddha, Unani and Homoeopathy. In the traditional system of medicine various plant parts such as leaves, root, flowers, and oils are used as anthelmintic, tonic, stomachic, digestive and in the treatment of jaundice and various liver disorders. Objective: The aim was to investigate the hepatoprotective activity of ethanolic extract of the root of *P. odoratissimus* against paracetamol (PCM) induced hepatotoxicity in rats. Materials and methods: Hepatotoxicity was induced in male Wistar rat by PCM (2 g/kg b.w. p.o. for 7 days). The ethanolic extract of *P. odoratissimus* root was administered at the dose level of 200 mg/kg and 400 mg/kg b.w. orally for 7 days and silymarin (100 mg/kg b.w. p.o.) as standard drug was administered once daily for a week. The hepatoprotective effect of ethanolic extract was evaluated by assessment of biochemical parameters such as serum glutamic oxaloacetic transaminase, serum glutamic-pyruvic transaminase, serum alkaline phosphatase, total and direct bilirubin and triglycerides. Histopathological study of rat liver was also done. Results: Experimental findings revealed that the extract at dose level of 200 mg/kg and 400 mg/kg of b.w. showed dose dependant hepatoprotective effect against PCM induced hepatotoxicity by significantly restoring the levels of serum enzymes to normal that was comparable to that of silymarin, but the extract at dose level of 400 mg/kg was found to be more potent when compared to that of 200 mg/kg. Besides, the results obtained from histopathological study also support the study. Conclusion: From the results, it can be concluded that ethanolic extract of the root of *P. odoratissimus* afforded significant protection against PCM induced hepatotoxicity in rats.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4333627/>

Arora S, Tandon S. DNA fragmentation and cell cycle arrest: a hallmark of apoptosis induced by *Ruta graveolens* in human colon cancer cells. *Homeopathy.* 2015;104(1):36-47. doi: 10.1016/j.homp.2014.10.001. Abstract: In the present study, we investigated the anti-cancer effect of various potencies of *Ruta graveolens* (Ruta) on COLO-205 cell line, as evidenced by cytotoxicity, migration, clonogenicity, morphological and biochemical changes and modification in the levels of genes associated with apoptosis and cell cycle. On treatment of COLO-205 cells maximal effects were seen with mother tincture (MT) and 30C potencies, wherein decrease in cell viability along with reduced clonogenicity and migration capabilities were noted. In addition morphological and biochemical alterations such as nuclear changes (fragmented nuclei with condensed chromatin) and DNA ladder-like pattern (increased amount of fragmented DNA) in COLO-205 cells indicating apoptotic related cell death were seen. The expression of apoptosis and cell-cycle related regulatory genes assessed by reverse transcriptase-PCR revealed an up-regulation of caspase 9, caspase-3, Bax, p21 and p27 expression and down-regulation of Bcl-2 expression in treated cells. The mode of cell death was suggestive of intrinsic apoptotic pathway along with cell cycle arrest at the G2/M of the cell cycle. Our findings indicate that phytochemicals present in *Ruta* showed potential for natural therapeutic product development for colon carcinoma.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576270>

Henrique da Silva G, Barros PP, Silva Gonçalves GM, Landi MA. Hepatoprotective effect of *Lycopodium clavatum* 30CH on experimental model of paracetamol-induced liver damage in rats. *Homeopathy.* 2015;104(1):29-35. doi: 10.1016/j.homp.2014.05.005. Introduction: Homeopathic *Lycopodium clavatum* is indicated for disorders of the digestive system and its accessory organs, including atony of the liver and liver tissue failure. This suggests that it may have action on drug-induced hepatitis, as occurs in paracetamol overdose. Purpose: To evaluate the effectiveness of

Lycopodium clavatum 30C (Lyc) as a hepatoprotector against liver damage experimentally induced by paracetamol (Pct) in Wistar rats. Methodology: Thirty animals subdivided into 6 groups were used. Animals from the treated groups were pretreated for 8 days with Lyc 30c (0.25 ml/day), receiving a dose of 3 g/kg of Pct on the 8th day. A positive control group received similar treatment, replacing Lyc 30c with 30% ethanol and a negative control received only 30% ethanol. After 24 and 72 h, the animals were sacrificed for tissue and blood sample collection. Subsequently, enzyme serum measurements indicative of liver damage (aspartate-aminotransferase (AST) and Alanine-aminotransferase (ALT)) and liver histological and morphometric analyses were performed. Results: Pretreatment with Lyc 30c reduced hepatic lesions produced by Pct overdose as evidenced by a significant reduction ($p < 0.05$) in ALT levels in the LyP 24h-group (901.04 ± 92.05 U/l) compared to the respective control group (1866.28 ± 585.44 U/l), promoted a significant decrease in the number of acinar zone 1 affected by necrosis and inflammatory infiltration (15.46 ± 13.86 clr/cm²) in LyP72 for 73.75 ± 16.60 clr/cm² in PC72), and inhibition of 1,2-glycol (glycogen) depletion in zone 3 (a significant reduction in Lyc 72 h group animals in comparison to the control group). Significant changes concerning the development of fibrosis or alterations in transaminase levels were not observed after 72 h. Conclusion: Lyc 30c exerted a moderate hepatoprotective effect on acute Pct-induced hepatitis, mainly shown by a histological decrease in necrosis and inflammatory foci, preserved glycogen and other 1,2-glycols in zone 3 and reduced serum levels of ALT and AST.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576269>

Hanif K, Kumar M, Singh N, Shukla R. Effect of homeopathic *Lycopodium clavatum* on memory functions and cerebral blood flow in memory-impaired rats. Homeopathy. 2015;104(1):24-8. doi: 10.1016/j.homp.2014.08.003. Background: *Lycopodium clavatum* (Lyc) is a widely used

homeopathic medicine for the liver, urinary and digestive disorders. Recently, acetyl cholinesterase (AChE) inhibitory activity has been found in Lyc alkaloid extract, which could be beneficial in dementia disorder. However, the effect of Lyc has not yet been explored in animal model of memory impairment and on cerebral blood flow. Aim: The present study was planned to explore the effect of Lyc on learning and memory function and cerebral blood flow (CBF) in intracerebroventricularly (ICV) administered streptozotocin (STZ) induced memory impairment in rats. Materials and methods: Memory deficit was induced by ICV administration of STZ (3 mg/kg) in rats on 1st and 3rd day. Male SD rats were treated with Lyc Mother Tincture (MT) 30, 200 and 1000 for 17 days. Learning and memory was evaluated by Morris water maze test on 14th, 15th and 16th day. CBF was measured by Laser Doppler flow meter on 17th day. Results: STZ (ICV) treated rats showed impairment in learning and memory along with reduced CBF. Lyc MT and 200 showed improvement in learning and memory. There was increased CBF in STZ (ICV) treated rats at all the potencies of Lyc studied. Conclusion: The above study suggests that Lyc may be used as a drug of choice in condition of memory impairment due to its beneficial effect on CBF.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576268>

Mutlu O, Ulak G, Kokturk S, Celikyurt IK, Akar F, Erden F. Effects of homeopathic *Anax imperator* on behavioural and pain models in mice. Homeopathy. 2015;104(1):15-23. doi: 10.1016/j.homp.2014.05.002. Background: Homeopathy is a medical theory and practice that asserts that disease can be cured by remedies that produce symptoms in a healthy person similar to those suffered by a patient with a malady. Methods: The aim of this study was to investigate effects of homeopathic *Anax imperator* (dragonfly) (*Anax-i* 30c and *Anax-i* 200c) in the forced swim test (FST), elevated plus-maze (EPM) test, hot plate (HP) test and open field test and examined NPY1 receptor expression, in naive mice. Results: In the FST, treatment with *Anax-i* 30c or *Anax-i*

200c significantly diminished immobility time while in EPM test, Anax-i 200c increased the percentage of time spent in open arms as well as the percentage of open arm/total arms. In the HP test, Anax-i 30c or Anax-i 200c decreased the total time mice spent licking their hind paws while in open field test, treatment with Anax-i 200c increased the total distance and speed mice traveled compared to the control group. Three weeks of daily injections with Anax-i 30c or Anax-i 200c caused significant weight loss in mice. Anax-i 30c or Anax-i 200c treatment significantly decreased NPY1 receptor expression, and Anax-i 30c also decreased NPY2 receptor expression. Conclusion: These results suggest that the homeopathic Anax-i exerts antidepressant, anxiolytic and analgesic-like effects and causes hyperlocomotion and weight loss.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576267>

Deni D, Caminiti A, Lai O, Alfieri L, Casati D, Sciarri M, Scaramozzino P, Brocherel G. Effect of a homeopathic complex on reproductive performance in a commercial pig farm. *Homeopathy*. 2015;104(1):9-14. doi: 10.1016/j.homp.2014.05.006. Background and aim: Alternative therapies based on homeopathy can be effective in improving reproductive performance in intensive pig breeding. In this study, the effect of a homeopathic complex on reproductive performance of sows under intensive farming has been investigated. Material and methods: Over period of three years, 186 sows were recruited from a farm where a large proportion of animals were suffering from prolonged weaning-to-oestrus intervals (WEI) and weaning-to-service intervals (WSI). Sows were allocated to two groups; once per month, one group was given a homeopathic complex (Borax 10 mK plus Lycopodium 10 mK), while the other group was given a hydro-alcoholic solution (placebo). The follow-up period started one week before the expected date of oestrus, continued for two pregnancies and ended after the weaning of the second farrowing. To evaluate reproductive performance, during the follow-up we collected data on quantitative parameters such as the

average number of stillbirths, newborns, and repeat services per farrowing. Time-related data such as WEI, WSI, length of the two pregnancies and weaning periods were also collected to measure the length of the follow-up of each sow. Differences in quantitative parameters between the two groups were evaluated using parametric and non-parametric statistics. Time-related data were used to plot Kaplan-Meier curves and in Cox regression models to evaluate whether treated sows had a higher probability of experiencing a shorter follow-up in comparison to untreated sows. Results: We did not find significant differences in the number of newborns, while the number of stillbirths was higher in the treatment group, even if the difference was slightly significant (p -value = 0.03). The number of repeat services was lower in the treatment group, and this difference was highly significant (p -value < 0.001). Results from the Cox regression models suggest that the end of the follow-up was reached by sows of the treatment group at about twice the rate of sows of the control group (model 2, Hazard Ratio treatment = 2.27; 95%CI: 1.56-3.24).

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576266>

Lopes CR, Falkowski GJ, Brustolin CF, Massini PF, Ferreira EC, Moreira NM, Aleixo DL, Kaneshima EN, de Araújo SM. Highly diluted medication reduces tissue parasitism and inflammation in mice infected by *Trypanosoma cruzi*. *Homeopathy*. 2016;105(2):186-93. doi: 10.1016/j.homp.2015.09.005. AIM: To evaluate the effects of *Kalium causticum*, *Conium maculatum*, and *Lycopodium clavatum* 13cH in mice infected by *Trypanosoma cruzi*. MATERIALS AND METHODS: In a blind, controlled, randomized study, 102 male Swiss mice, 8 weeks old, were inoculated with 1400 trypomastigotes of the Y strain of *T. cruzi* and distributed into the following groups: Cl (treated with 7% hydroalcoholic solution), Ca (treated with *Kalium causticum* 13cH), Co (treated with *Conium maculatum* 13cH), and Ly (treated with *Lycopodium clavatum* 13cH). The treatments were performed 48 h before and 48, 96, and 144 h after infection. The medication was

repetorized and prepared in 13cH, according to Brazilian Homeopathic Pharmacopoeia. The following parameters were evaluated: infectivity, prepatent period, parasitemia peak, total parasitemia, tissue tropism, inflammatory infiltrate, and survival. Statistical analysis was conducted considering 5% of significance. RESULTS: The prepatent period was greater in the Ly group than in the CI group ($p = 0.02$). The number of trypomastigotes on the 8th day after infection was lower in the Ca group than in the CI group ($p < 0.05$). Total parasitemia was significantly lower in the Ca, Co, and Ly groups than in the CI group. On the 12th day after infection, the Ca, Co, and Ly groups had fewer nests and amastigotes/nest in the heart than the CI group ($p < 0.05$). Decreases in the number of nests and amastigotes in the intestine were observed in the Ly group compared with the CI group ($p < 0.05$). In the liver (day 12), Ly significantly prevented the formation of inflammatory foci compared with the other groups. In skeletal muscle, Co and Ly decreased the formation of inflammatory foci compared with CI ($p < 0.05$). Ly afforded greater animal survival compared with CI, Ca, and Co ($p < 0.05$). The animals in the Co group died prematurely compared with the CI group ($p = 0.03$). CONCLUSIONS: Ly with 13cH potency had significantly more benefits in the treatment of mice infected with *T. cruzi*, reducing the number of blood parasites, amastigote nests in tissue, and the number of amastigotes per nest and increasing animal survival.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211326>

Temgire MK, Suresh AK, Kane SG, Bellare JR. Establishing the interfacial nano-structure and elemental composition of homeopathic medicines based on inorganic salts: a scientific approach. *Homeopathy*. 2016;105(2):160-72. doi: 10.1016/j.homp.2015.09.006. Abstract: Extremely dilute systems arise in homeopathy, which uses dilution factors 10(60), 10(400) and also higher. These amounts to potencies of 30c, 200c or more, those are far beyond Avogadro's number. There is extreme skepticism among scientists about the possibility of presence of starting materials due to these

high dilutions. This has led modern scientists to believe homeopathy may be at its best a placebo effect. However, our recent studies on 30c and 200c metal based homeopathic medicines clearly revealed the presence of nanoparticles of starting metals, which were found to be retained due to the manufacturing processes involved, as published earlier.(9,10) Here, we use HR-TEM and STEM techniques to study medicines arising from inorganic salts as starting materials. We show that the inorganic starting materials are present as nano-scale particles in the medicines even at 1 M potency (having a large dilution factor of 10(2000)). Thus this study has extended our physicochemical studies of metal based medicines to inorganic based medicines, and also to higher dilution. Further, we show that the particles develop a coat of silica: these particles were seen embedded in a meso-microporous silicate layer through interfacial encapsulation. Similar silicate coatings were also seen in metal based medicines. Thus, metal and inorganic salt based homeopathic medicines retain the starting material as nanoparticles encapsulated within a silicate coating. On the basis of these studies, we propose a universal microstructural hypothesis that all types of homeopathic medicines consist of silicate coated nano-structures dispersed in the solvent.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211323>

Oliosio D, Marzotto M, Bonafini C, Brizzi M, Bellavite P. Arnica montana effects on gene expression in a human macrophage cell line. Evaluation by quantitative Real-Time PCR. *Homeopathy*. 2016;105(2):131-47. doi: 10.1016/j.homp.2016.02.001. Background: Arnica montana is a popular traditional remedy widely used in complementary medicine, also for its wound healing properties. Despite its acknowledged action in clinical settings at various doses, the molecular aspects relating to how A. montana promotes wound healing remain to be elucidated. To fill this gap, we evaluated the whole plant extract, in a wide range of dilutions, in THP-1 human cells, differentiated into mature macrophages and into an alternative IL-4-activated phenotype

involved in tissue remodelling and healing. Methods: Real-time quantitative Reverse Transcription Polymerase Chain Reaction (PCR) analysis was used to study the changes in the expression of a customized panel of key genes, mainly cytokines, receptors and transcription factors. Results: On macrophages differentiated towards the wound healing phenotype, *A. montana* affected the expression of several genes. In particular CXC chemokine ligand 1 (CXCL1), coding for an chief chemokine, exhibited the most consistent increase of expression, while also CXC chemokine ligand 2 (CXCL2), Interleukin8 (IL8) and bone morphogenetic protein (BMP2) were slightly up-regulated, suggesting a positive influence of *A. montana* on neutrophil recruitment and on angiogenesis. MMP1, coding for a metalloproteinase capable of cleaving extracellular matrix substrates, was down-regulated. Most results showed non-linearity of the dose-effect relationship. Conclusions: This exploratory study provides new insights into the cellular and molecular mechanisms of action of *A. montana* as a promoter of healing, since some of the genes it modifies are key regulators of tissue remodelling, inflammation and chemotaxis.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211321>

Medina-Aguilar R, Marchat LA, Arechaga Ocampo E, Gariglio P, García Mena J, Villegas Sepúlveda N, Martínez Castillo M, López-Camarillo C. Resveratrol inhibits cell cycle progression by targeting Aurora kinase A and Polo-like kinase 1 in breast cancer cells. *Oncol Rep.* 2016;35(6):3696-704. doi: 10.3892/or.2016.4728. Abstract: The Aurora protein kinase (AURKA) and the Polo-like kinase-1 (PLK1) activate the cell cycle, and they are considered promising druggable targets in cancer therapy. However, resistance to chemotherapy and to specific small molecule inhibitors is common in cancer patients; thus alternative therapeutic approaches are needed to overcome clinical resistance. Here, we showed that the dietary compound resveratrol suppressed the cell cycle by targeting AURKA and PLK1 kinases. First, we identified genes modulated by resveratrol using a genome-wide analysis of gene

expression in MDA-MB-231 breast cancer cells. Transcriptional profiling indicated that 375 genes were modulated at 24 h after resveratrol intervention, whereas 579 genes were regulated at 48 h. Of these, 290 genes were deregulated in common at 24 and 48 h. Interestingly, a significant decrease in the expression of genes involved in the cell cycle, DNA repair, cytoskeleton organization, and angiogenesis was detected. In particular, AURKA and PLK1 kinases were downregulated by resveratrol at 24 h. In addition the BRCA1 gene, an AURKA/PLK1 inhibitor, was upregulated at 24 h of treatment. Moreover, two well-known resveratrol effectors, cyclin D1 (CCND1) and cyclin B1 (CCNB1), were also repressed at both times. Congruently, we found that resveratrol impaired G1/S phase transition in both MDA-MB-231 and MCF-7 cells. By western blot assays, we confirmed that resveratrol suppressed AURKA, CCND1 and CCNB1 at 24 and 48 h. In summary, we showed for the first time that resveratrol regulates cell cycle progression by targeting AURKA and PLK1. Our findings highlight the potential use of resveratrol as an adjuvant therapy for breast cancer.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27109433>

Acosta P, Pérez N, Pérez E, Correa B, Pérez C, Gómez C, Sánchez V, Pérez DG. Anti-inflammatory effect of dialysable leucocyte extract in a rat model of osteoarthritis: histopathological and molecular characterization. *Scand J Rheumatol.* 2016;1-8. Objectives: To evaluate the effect of dialysable leucocyte extract (DLE) on pro- and anti-inflammatory profiles in a rat model of osteoarthritis (OA). Method: Forty-eight male Wistar rats were divided into three groups: normal rats without treatment, OA rats treated with placebo, and OA rats treated with DLE. After treatment, the animals were killed to obtain cartilage for histological analysis and to determine the expression of pro- and anti-inflammatory cytokines by reverse transcription multiplex polymerase chain reaction (RT-MPCR) and immunohistofluorescence analyses. Results: Histological analysis revealed that OA cartilage from rats

treated with DLE displayed similar characteristics to non-OA cartilage from the control group. The OA cartilage treated with placebo showed alterations in the cellular architecture and in chondrocyte cluster formation. Analysis of cytokine expression by RT-MPCR showed that OA cartilage from DLE-treated rats expressed platelet-derived growth factor (PDGF), interferon (IFN)- γ , and fibroblast growth factor (FGF)-2, similar to non-OA cartilage from the control group. However, OA cartilage from rats treated with placebo expressed interleukin (IL)-1, PDGF, and I kappa B (I κ B). Confocal immunodetection of FGF-2, PDGF, and non-phosphorylated I κ B showed that they were distributed in the cytoplasm of most chondrocytes in OA cartilage from DLE-treated rats whereas no nuclear factor kappa B (NF- κ B) expression was observed in the nuclei. Instead, in OA cartilage from the placebo group, only weak FGF-2 staining was observed, PDGF and I κ B were not detected, and NF- κ B was strongly observed in both cytoplasm and nuclei. Conclusions: Our findings suggest that DLE treatment modifies the OA process, promoting the expression of anti-inflammatory cytokines and diminishing the inflammatory effects, avoiding the nuclear translocation of NF- κ B in chondrocytes.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27098310>

Lima LF, Rocha RM, Alves AM, Carvalho AA, Chaves RN, Lopes CA, B  o SN, Campello CC, Rodrigues AP, Figueiredo JR. Comparison between the additive effects of diluted (rFSH) and diluted/dynamized (FSH 6 cH) recombinant follicle-stimulating hormone on the in vitro culture of ovine preantral follicles enclosed in ovarian tissue. *Complement Ther Med*. 2016;25:39-44. doi: 10.1016/j.ctim.2015.12.016. Objective: This study compared 2 types of recombinant follicle stimulating hormone (rFSH): diluted and diluted/dynamized, on in vitro development of ovine follicles. Methods: In experiment 1, ovarian fragments were cultured for 1 or 7 days in α -MEM(+) in the absence or presence of different concentrations of diluted rFSH to determine the best concentration. In experiment 2, the effect of diluted and diluted/dynamized rFSH (rFSH 6 cH-

ultradiluted and succussioned), alone or in combination, was studied. Results: In experiment 1, compared to control, 50ng/mL of diluted rFSH induced higher rates of follicular survival after 7 days of culture and higher percentages of growing follicles at day 1 of culture ($P<0.05$). In experiment 2, compared to control, diluted/dynamized rFSH induced higher follicular diameter and survival rate after 7 days and early follicle activation at day 1 of culture ($P<0.05$). Compared to diluted rFSH, diluted/dynamized rFSH induced higher rates of follicle activation at day 1 of culture ($P<0.05$). Conclusion: In conclusion, compared to the control medium, diluted/dynamized rFSH promoted survival and early activation of follicles, while diluted rFSH promoted higher activation later in the culture. Thus, diluted/dynamized rFSH may be used as an alternative to diluted rFSH for the in vitro culture of ovine preantral follicles.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27062946>

Mondal J, Samadder A, Khuda-Bukhsh AR. Psorinum 6 \times triggers apoptosis signals in human lung cancer cells. *J Integr Med*. 2016;14(2):143-53. doi: 10.1016/S2095-4964(16)60230-3. Objective: To provide in vitro evidence of Psorinum treatment against cancer cells in a controlled study. Methods: Effects of homeopathic Psorinum 6 \times on cell viability were initially determined in several cancer cell lines, including A549, HepG2 and MCF-7, using 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay, and an ethanol 6 \times control. The cell line that exhibited highest inhibition was selected and used in the following experiments. A range of Psorinum 6 \times doses was used to explore treatment effects on cell cycle arrest, cell death (apoptosis), generation of reactive oxygen species (ROS) and change in mitochondrial membrane potential (MMP) using flow cytometry and fluorescence microscopy, respectively. Expression of several signal proteins related to apoptosis and cell survival were quantified with Western blotting and confocal microscopy. Further, circular dichroism (CD) spectroscopy was used to determine possible drug-DNA

interactions, as well as the induction of conformational changes. Results: Treatment of cancer cell lines with Psorinum showed greater anticancer effects in A549 cells than in others. In A549 cells Psorinum treatment inhibited cell proliferation at 24 h after treatment, and arrested cell cycle at sub-G1 stage. It also induced ROS generation, MMP depolarization, morphological changes and DNA damage, as well as externalization of phosphatidyl serine. Further, increases in p53 expression, Bax expression, cytochrome c release, along with reduction of Bcl-2 level and caspase-3 activation were observed after Psorinum 6× treatment, which eventually drove A549 cells towards the mitochondria-mediated caspase-3-dependent pathway. CD spectroscopy revealed direct interaction of Psorinum with DNA, using calf thymus-DNA as target. Conclusion: Psorinum 6× triggered apoptosis in A549 cells via both up- and down-regulations of relevant signal proteins, including p53, caspase-3, Bax and Bcl-2.

Source:

[http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964\(16\)60230-3.pdf](http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964(16)60230-3.pdf)

Torres A, Vargas Y, Uribe D, Carrasco C, Torres C, Rocha R, Oyarzún C, San Martín R, Quezada C. Pro-apoptotic and anti-angiogenic properties of the α / β -thujone fraction from *Thuja occidentalis* on glioblastoma cells. *J Neurooncol*. 2016;128(1):9-19. doi: 10.1007/s11060-016-2076-2. Abstract: The most aggressive type of brain tumor is glioblastoma multiforme, which to date remains incurable. *Thuja occidentalis* is used in homeopathy for the treatment of cancer, however, its mechanism of action remains unknown. We set out to study the effects of thujone fractions of *Thuja* on glioblastoma using in vitro and in vivo models. We found that the α / β -thujone fraction decrease the cell viability and exhibit a potent anti-proliferative, pro-apoptotic and anti-angiogenic effects in vitro. In vivo assays showed that α / β -thujone promotes the regression of neoplasia and inhibits the angiogenic markers VEGF, Ang-4 and CD31 into the tumor.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26900077>

Gonçalves de Freitas AT, Lemonica L, De Faveri J, Pereira S, Bedoya Henao MD. Preemptive Analgesia with Acupuncture Monitored by c-Fos Expression in Rats. *J Acupunct Meridian Stud*. 2016;9(1):16-21. doi: 10.1016/j.jams.2015.08.002. Abstract: Pain behavior and awareness are characterized by heightened alertness and anxiety, which begin to disappear as soon as the curative process starts. The present study aimed to quantify c-fos expression in rat spinal cords and brains after a surgical stimulus and with preoperative or postoperative acupuncture. Animals were randomly divided into preoperative and postoperative groups and were then further divided into control, manual acupuncture (MA), or electroacupuncture (EA) groups. Expression of c-fos was quantified using immunohistochemistry. The collected data were analyzed using the t test at a 5% probability level. Presurgery and postsurgery spinal cord c-fos expressions were similar in all of the treatment groups. In the control rats, c-fos expression was higher before surgery than after surgery, contradicting the expected outcome of acupuncture and preemptive analgesia. After treatment, the expression of c-fos in the brains of the rats in the MA and the EA groups was reduced compared with that of the rats in the control group. These findings suggest that acupuncture used as preemptive analgesia in rats is a useful model for studying its application in human treatment.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26896072>

Klein SD, Wolf U. Comparison of homeopathic globules prepared from high and ultra-high dilutions of various starting materials by ultraviolet light spectroscopy. *Complement Ther Med*. 2016;24:111-7. doi: 10.1016/j.ctim.2015.12.017. Objective: Homeopathic globules are commonly used in clinical practice, while research focuses on liquid potencies. Sequential dilution and succussion in their production process has been proposed to change the physico-chemical properties of the solvent(s). It has been reported that aqueous

potencies of various starting materials showed significant differences in ultraviolet light transmission compared to controls and between different dilution levels. The aim of the present study was to repeat and expand these experiments to homeopathic globules. Methods: Globules were specially produced for this study by Spagyros AG (Gümligen, Switzerland) from 6 starting materials (Aconitum napellus, Atropa belladonna, phosphorus, sulfur, Apis mellifica, quartz) and for 6 dilution levels (6x, 12x, 30c, 200c, 200CF (centesimal discontinuous fluxion), 10,000CF). Native globules and globules impregnated with solvents were used as controls. Globules were dissolved in ultrapure water, and absorbance in the ultraviolet range was measured. The average absorbance from 200 to 340nm was calculated and corrected for differences between measurement days and instrumental drift. Results: Statistically significant differences were found for A. napellus, sulfur, and A. mellifica when normalized average absorbance of the various dilution levels from the same starting material (including control and solvent control globules) was compared. Additionally, absorbance within dilution levels was compared among the various starting materials. Statistically significant differences were found among 30c, 200c and 200CF dilutions. Conclusion: This study has expanded previous findings from aqueous potencies to globules and may indicate that characteristics of aqueous high dilutions may be preserved and detectable in dissolved globules.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26860812>

Ferrari de Andrade L, Mozeleski B, Leck AR, Rossi G, da Costa CR, de Souza Fonseca Guimarães F, Zotz R, Fialho do Nascimento K, Camargo de Oliveira C, de Freitas Buchi D, da Silva Trindade E. Inhalation therapy with M1 inhibits experimental melanoma development and metastases in mice. *Homeopathy*. 2016;105(1):109-18. doi: 10.1016/j.homp.2015.08.007. Background: M1 is a homeopathic medicine with immunostimulatory properties used mainly by cancer patients to complement current therapies. Metastatic melanoma is a skin-originated form of cancer without a single

therapy able to produce high rate and sustained responses, which attracts the use of complementary therapies such as M1. However, M1's anti-melanoma effects remain to be pre-clinically demonstrated. Therefore in the present work, we utilized a pulmonary metastatic melanoma model and a subcutaneous melanoma growth model to investigate the potential benefits of treatment with M1. Methods: C57BL/6 mice were injected intravenously or subcutaneously with B16F10 mouse melanoma cells. After 24 h, mice were treated with either M1 or vehicle (water) for 14 days, euthanized and harvested for multi-parameter pulmonary and tumor analyses. Results: Mice treated with M1 had significantly lower tumor burden in the lungs and subcutaneous tissue than control mice. Furthermore, tumors were impaired in proliferation and tumor related angiogenesis by the inhibition of myeloid derived suppressor cells (MDSC) positive for angiotensin II type 1 receptor (AT1R). Conclusion: Altogether these data suggest M1 is an efficient candidate for melanoma therapy to be considered for future clinic studies as this study is the first supporting the idea that melanoma patients may benefit with the treatment. The treatment with M1 provides advantages considering the highly-diluted properties and a cost effective alternative to costly chemotherapeutic approaches with, if any, lower toxicity.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828006>

Canello S, Gasparini G, Luisetto P, Di Cerbo A, Pomerri F. Bone computed tomography mineral content evaluation in chickens: effects of substances in homeopathic concentration. *Homeopathy*. 2016;105(1):92-5. doi: 10.1016/j.homp.2015.07.003. Methods: Ninety-six cobb race chickens were equally divided in 4 groups and randomly assigned to receive a standard treatment feed + homeopathic concentrations of *Symphytum* (S.) *officinalis* (9CH), or standard treatment feed + homeopathic concentrations of *Tricalcareia* (4CH), or standard treatment feed + homeopathic concentrations of *Calcarea* (C.) *carbonica* (30CH) or a placebo (the same feed but without any

homeopathic compound) in order to assess the ability of the homeopathic compounds to increase the concentration of calcium hydroxyapatite in the sternal spongy bone tissue. We measured the concentration of calcium hydroxyapatite in the sternal spongy bone tissue of all chickens by means of a computed tomography (CT). Results: 30%, 36% and 63% increase of sternum spongy-bone mineralization was observed after a 2 years period in the treatment groups with *S. officinalis* (9CH), *Tricalcareia* (4CH) (*P < 0.05) and *C. carbonica* (30CH) (**P < 0.001) respectively. Conclusion: Bone mineralization is usually low in battery chickens reared in commercial poultry-sheds, creating a weakness of the whole animal supporting apparatus. Homeopathic preparations with bone-tissue tropism may improve their health quality.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828003>

Jadhav HP, Chaudhari GG, Patil DD, Jadhav RB, Reddy NM, Shirkhedkar AA, Goyal SN, Patil CR. Standardization of homeopathic mother tincture of *Toxicodendron pubescens* and correlation of its flavonoid markers with the biological activity. *Homeopathy*. 2016;105(1):48-54. doi: 10.1016/j.homp.2015.08.003. Background: Standardization and quality control of homeopathic drugs is very challenging. As mother tinctures are derived from complex natural resources, there is a need of systematic evaluation of chemical markers which correlate with the proposed biological activities of mother tinctures. Methods: In present study, High-Performance Thin-Layer Chromatography (HPTLC) standardization method of homeopathic mother tinctures of *Toxicodendron pubescens* using quercitrin and rutin as chemical markers is validated and correlations of content of these markers with its anti-inflammatory effects are established. For HPTLC analysis, precoated silica gel plates were used as stationary phase. Two flavonoids, namely quercitrin and rutin were used as markers. Separation was achieved using methylene chloride:methanol:water:glacial acetic acid (15:1.5:1:8 v/v/v) as mobile phase. The developed plates were scanned at 365 nm. Results: It was observed

that quercitrin (Rf value 0.63) and Rutin (Rf value 0.41) are well resolved. The minimum detectable concentrations for quercitrin and rutin were 5 ng/spot. The linearity range was between 100 and 2000 ng/spot for both the markers. Subsequently, anti-inflammatory activity of these formulations was determined against carrageenan-induced paw edema in rats, pain threshold determined by electronic Von-Frey apparatus and paw withdrawal latency (PWL) on hot-plate. All the tested formulations of *Rhus Tox* showed anti-inflammatory and analgesic activity against carrageenan induced paw edema in rats. Quantitative correlation between the content of markers and anti-inflammatory activity of mother tinctures was established. Results: Anti-inflammatory effect as well as effect on paw withdrawal and pain threshold, at third hour after carrageenan injection, correlated with quercitrin and rutin content in the respective formulations. Conclusions: This study validates a quantitative HPTLC method for standardization of homeopathic mother tincture of *Rhus Tox* and establishes quercitrin and rutin as markers corresponding its biological activity. Contents of quercitrin and rutin in *T. pubescens* mother tincture correlates with its anti-inflammatory and analgesic actions and the validated HPTLC method can be used in standardization of homeopathic mother tincture of *T. pubescens*.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26827997>

Bigagli E, Luceri C, Dei A, Bernardini S, Dolara P. Effects of Extreme Dilutions of *Apis mellifica* Preparations on Gene Expression Profiles of Human Cells. *Dose Response*. 2016;14(1):1559325815626685. doi: 10.1177/1559325815626685. Abstract: Gene expression analysis has been employed in the past to test the effects of high dilutions on cell systems. However, most of the previous studies were restricted to the investigation of few dilutions, making it difficult to explore underlying mechanisms of action. Using whole-genome transcriptomic analysis, we investigated the effects of a wide range of *Apis mellifica* dilutions on gene expression profiles of human cells. RWPE-1 cells, a

nonneoplastic adult human epithelial prostate cell line, were exposed to *Apis mellifica* preparations (3C, 5C, 7C, 9C, 12C, 15C, and 30C) or to the reference solvent solutions for 24 hours; nonexposed cells were also checked for gene expression variations. Our results showed that even the most diluted solutions retained the ability to trigger significant variations in gene expression. Gene pathway analysis revealed consistent variations in gene expression induced by *Apis mellifica* when compared to nonexposed reference cells but not to reference solvent solutions. Since the effects of *Apis Mellifica* at extreme dilutions did not show dose-effect relationships, the biological or functional interpretation of these results remains uncertain.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4710123/pdf/10.1177_1559325815626685.pdf

Casañas Pimentel RG, Robles Botero V, San Martín Martínez E, Gómez García C, Hinestroza JP. Soybean agglutinin-conjugated silver nanoparticles nanocarriers in the treatment of breast cancer cells. *J Biomater Sci Polym* Ed. 2016;27(3):218-34. doi: 10.1080/09205063.2015.1116892. Abstract: Silver nanoparticles (AgNPs) induce diverse cell-death mechanisms, similar to those promoted by anticancer chemotherapeutics; however, they have not been tested in vivo because their action is not limited to cancer cells. Therefore, in vivo evaluations of their effectiveness should be developed with targeting systems. Breast cancer shows changes in the sugar expression patterns on cell surfaces, related to cancer progression and metastases; those changes have been identified previously by the specific binding of soybean agglutinin (SBA). Here is proposed the use of SBA to target the AgNP activity in breast cancer. For that, the present work reports the synthesis of AgNPs (3.89 ± 0.90 nm) through the polyol method, the generation of AgNP nanocarriers, and the bioconjugation protocol of the nanocarrier with SBA. The free AgNPs, the AgNP nanocarriers, and the SBA-bioconjugated AgNP nanocarriers were tested for cytotoxicity in breast cancerous (MDA-MB-231 and MCF7) and non cancerous

(MCF 10A) cells, using the MTT assay. AgNPs demonstrated cytotoxic activity in vitro, the non cancerous cells (MCF 10A) being more sensible than the cancerous cells (MDA-MB-231 and MCF7) showing LD(50) values of 128, 205, and 319 μ M Ag, respectively; the nanoencapsulation decreased the cytotoxic effect of AgNPs in non cancerous cells, maintaining or increasing the effect on the cancer-derived cells, whereas the SBA-bioconjugation allowed AgNP cytotoxic activity with a similar behavior to the nanocarriers. Future experiments need to be developed to evaluate the targeting effect of the SBA-bioconjugated AgNP nanocarriers to study their functionality in vivo.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26540350>

Flores-Pérez A, Marchat LA, Sánchez LL, Romero-Zamora D, Arechaga-Ocampo E, Ramírez-Torres N, Chávez JD, Carlos-Reyes Á, Astudillo-de la Vega H, Ruiz-García E, González-Pérez A, López-Camarillo C. Differential proteomic analysis reveals that EGCG inhibits HDGF and activates apoptosis to increase the sensitivity of non-small cells lung cancer to chemotherapy. *Proteomics Clin Appl*. 2016;10(2):172-82. doi: 10.1002/prca.201500008. Purpose: To search for regulated proteins in response to green tea (-)-epigallocatechin-3-gallate (EGCG) in A549 lung cancer cells. Experimental design: 2DE and ESI/multistage MS (ESI-MS/MS) were performed to identify modulated proteins in A549 cells treated with EGCG. Cell migration was evaluated by transwell assays. RNA interference was used to silence the hepatoma-derived growth factor (HDGF). Caspase-3, caspase-9, and HDGF were immunodetected by Western blot assays. Flow cytometry was used for detection of mitochondrial membrane potential and apoptosis. Results: We found that HDGF expression was threefold suppressed by EGCG treatment. Downregulation of HDGF by EGCG was confirmed using anti-HDGF antibodies in three lung cancer cell lines. EGCG treatment and HDGF abrogation by RNA interference resulted in a decreased migration of A549 cells. In addition, EGCG induced a marked synergistic effect with cisplatin in cell death.

Consistently, an enhanced cytotoxicity in HDGF-silenced cells was also found. Cell death was associated to increased apoptosis, disruption of the mitochondrial membrane potential, and activation of caspase-3 and caspase-9. Conclusion and clinical relevance: Our data suggest for the first time that abrogation of HDGF by EGCG enhances cisplatin-induced apoptosis and sensitize A549 cells to chemotherapy. Therefore, we propose that decreasing the HDGF levels by using EGCG may represent a novel strategy in lung cancer therapy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26175166>

Konar A, Sarkar T, Chakraborty I, Sukul NC, Majumdar D, Singha A, Sukul A. Raman spectroscopy reveals variation in free OH groups and hydrogen bond strength in ultrahigh dilutions. *Int J High Dilution Res.* 2016;15(2): 2-9. Objective: To decipher the nature of water structure in two ultrahigh diluted (UHD) homeopathic drugs by Laser Raman Spectroscopy. Method: Two homeopathic drugs *Calcarea carbonica* (Calc.) and *Sepia officinalis* (Sep.) in 8cH, 202cH, and 1002cH and their diluent medium 90% ethanol in 8cH and 202cH were used in the present study. Laser Raman spectra of all the samples were obtained in the wave number region of 2400 – 4200 cm^{-1} . The intensity ratio at vibration frequencies between 3200 and 3420 (R1) and that between 3620 and 3420 (R2) were calculated for each UHD of the samples. Results: The spectra show a marked difference in intensities in the stretching vibrations of CH and OH groups of all the samples. R1 values for three UHDs of Calc. and Sep. show negative and positive relationships, respectively. In the case of R2 values, the relationship in three UHDs is 81002 for Calc., and $8 > 202 < 1002$ for Sep. In the case of control (ethanol UHDs) both R1 and R2 show a negative relationship. Conclusion: R1 denotes a relative number of OH groups with strong and weak hydrogen bonds. R2 indicates the relative number of OH groups with broken and weak H-bonds. Therefore, the UHDs of the two drugs and the control are different from each other with respect to hydrogen bond strength of OH groups and the number of free OH groups or non-hydrogen bonded water molecules.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/819/818>

Piñeros LG, Pombo LM, Delgado C, Flechas J, Mejía MC, Borrego P. Effects of Additional Agitation Process on the Spectrophotometric Profiles of Homeopathic Solutions. *Int J High Dilution Res.* 2016;15(2): 10-21. Introduction: Conventional homeopathy recommends giving 10 strokes (succussions) to prescription bottle, before taking it. To scientifically support such activity, it must be based on studies on the physicochemical aspects of the memory of water and agitated water chains, supplemented with spectrometry. Objective: To analyze spectrometric profiles of homeopathic high dilutions, comparing additionally agitated and non-agitated dilutions, and to define differences according to each dilution's kingdom. Methodology: Homeopathic dilutions were prepared using a ratio of 1:100 obtaining dilutions from 1cH to 15cH. Measurements of absorbance of 15cH dilutions were performed at 340 nm and 200 nm, with and without additional agitation. Results: Statistically significant differences were found between agitated and non-agitated dilutions ($p < 0.05$) for *Apis mellifica*, *Bufo rana*, and *Calcium iodatum*, with a decrease in the mean value of absorbance (340 nm) in agitated solutions. For *Arnica montana*, *Matricaria chamomilla*, *Coffea arabica*, *Pulsatilla nigricans*, *Calcium iodatum* and *Natrum muriaticum*, the absorbance values increased; these values decreased for *Apis* and *Bufo*. In addition, measurements were performed with a shorter wavelength (200 nm); it was observed that there are significant differences for all homeopathic dilutions studied. Additionally, when comparing the mean values of the absorbance for each kingdom, and observing the agitation factor, a statistically significant difference was found in the animal kingdom ($p < 0.05$), having lower absorbance for agitated dilutions. Conclusion: Comparisons of the spectrometric profiles of agitated and non-agitated solutions allow to observe that there is a difference of the absorbance when comparing a previously agitated solution and a solution with no agitation before taking it.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/816/819>

Sarkar T, Konar A, Sukul NC, Majumdar D, Singha A, Sukul A. Raman spectroscopy shows difference in drugs at ultra-high dilution prepared with stepwise mechanical agitation. *Int J High Dilution Res.* 2016;15(1): 2-9. Abstract: Abstract Objective The present study aims at deciphering the nature of the water structure in two drugs at ultra high dilution (HD) by Laser Raman Spectroscopy. Method Two drugs like Sulphur and Natrum mur and their three high dilutions 30cH, 200cH and 1000cH were selected for the study. The 30cH means dilution 1060 with mechanical agitation in 30 steps. Raman spectra of the drugs and their medium (90%ethanol) were obtained in the wave number region of 2600-3800 cm^{-1} . The intensity ratio at vibration frequencies between 3220 and 3420 (R_1) and that between 3620 and 3420 (R_2) were calculated for each HD as well as the control. Results Raman spectra show differences in intensities in different HD's and their control in the stretching vibrations of CH and OH groups. The three HD's of each drug show inverse relationship with respect to the R_1 values. However, for R_2 the relationship of HD's for each drug is positive. Conclusion R_1 provides information about the relative number of OH groups with strong and weak hydrogen bonds. R_2 suggests the relative number of OH groups with broken and weak hydrogen bonds. Judged from R_1 values the lower is the rank of HD, the stronger is the H-bond of the OH groups. In the light of R_2 values the higher is the HD rank the more abundant is the free OH groups. So, hydrogen bond strength and free OH groups together make an effective HD rank relating to Sulphur and Natrum mur.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/811/816>

Chatterjee A, Paul BK, Kar S, Das S, Basu R, Bhar DS, Manchanda R, Khurana A, Nayak D, Nandy P. Effect of ultrahigh diluted homeopathic medicines on the

electrical properties of Poly PVDF-HFP. *Int J High Dilution Res.* 2016;15(1): 10-17. Abstract: In an effort to improve the electrical properties of the electroactive Poly(vinylidene fluoride-hexafluoropropylene) (PVdF-HFP), we introduced a novel and simple approach to synthesize PVDF-HFP composite films by incorporating ultrahigh dilutions of two homeopathic medicines Ferrum metallicum (FM) and Zincum oxidatum (ZO) in different potencies. The homeo-PVDF-composite films (HPCF) were synthesized by simple solution casting technique. XRD, FESEM, FTIR studies were performed to check the presence of nanoparticles in the film. The electrical properties of the HPCF samples get enhanced significantly due to the incorporation of the medicines and the effect increases with the increase in potency of the medicines.

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<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/808/817>

Kar S, Bandyopadhyay P, Chakraborty S, Chakrabarty M, Paul BK, Ghosh S et al. Derivation of an empirical relation between the size of the nanoparticle and the potency of homeopathic medicines. *Int J High Dilution Res.* 2015;14(4):2-7. Abstract: Homeopathic medicines are often prescribed at very high dilutions and it is a clinically observed fact that the medicinal effect of the drug remains even at these high dilutions. The increase in potency of a medicine due to potentization is still debatable from physico-chemical point of view. Out of various hypotheses to explain this phenomenon, a recent hypothesis, advanced by us and supported by others, is that the size of the constituent particles decreases and eventually achieves nano dimension due to potentization. From the experiments performed by our group, the size of nanoparticles (NPs) of Cuprum metallicum, Zincum oxydatum, Aurum metallicum, Ferrum metallicum and Aconitum napellus (6cH, 30cH and 200cH) have been estimated. A general mathematical expression of the form $y = a \cdot x^{-n}$ has been derived which relates the size of NPs (y) with the corresponding potencies (x). There is no method to calculate the accurate potency of the homeopathic

medicine, as the potency of a medicine depends to some extent on the method of preparation, for which a standardized procedure is warranted. Also, while handling a medicine, the solvent might evaporate causing a change in the potency. Thus by measuring the size of the NPs and using our proposed standard curve, the potency may be estimated.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/804/807>

Sarkar T, Konar A, Sukul NC, Sukul A, Chakraborty I, Datta P, Sutradhar A. Free water molecules and hydrogen bonding form the basis of variation in homeopathic potencies as revealed by vibrational spectroscopy. *Int J High Dilution Res.* 2015;14(4): 8-15. Abstract: Objective: Using Fourier Transform Infrared spectroscopy (FTIR) we have demonstrated that homeopathic potencies of Natrum mur, Cantharis, Nux vomica and Sulphur show differences with respect to the number of free water molecules and strength of hydrogen bonding. The purpose of the present study is to confirm this phenomenon in three potencies of two more drugs Calcarea carb and Silicea. Design: The potencies used for each of the two drugs were 30cH, 200cH and 1000cH. The control was 90% ethanol as also the potentized drugs. The control, as well as the potencies, were diluted with distilled water to reduce the level of ethanol to 0.03 molar fraction in each of them. FTIR spectra of all the potentized drugs, control and sterile distilled water (reference water) were taken in the wave number region of 4000-2800 cm^{-1} . The full width at half maximum (fwhm) of OH band was measured for each spectrum. The width was divided into two in the middle. The difference spectrum (absorbance of drug solution - absorbance of reference water) for each potency and the control was obtained after normalization of the spectrum at 3410 cm^{-1} . One difference spectrum so obtained for a potency was subtracted from another to find out if there is a difference between two different potencies. Results: The half width half maximum (hwhm) in both the high and low-frequency sides of the OH band is far less

narrow in potencies than in the control as compared to that in water. The difference spectra for different potencies show different levels of fall in intensity at the wave number region of dip at 3630 cm^{-1} . The level of dip at 3630 cm^{-1} and subsequent rise in intensity in the lower frequency region represent the quantity of free water molecules and strong alcoholic OH bond around 3250 cm^{-1} , respectively. The results of subtraction between two different potencies are not zero but have marked positive or negative values. Conclusion (i) Potencies have stronger intermolecular interactions and a higher number of chemical environments than the control, as revealed by the data on hwhm. (ii) The three potencies of each of the two drugs show distinct variation in the number of free water molecules and strength of hydrogen bonding. (iii) There exists both inter-drug and inter-potency variation as revealed by the difference spectra and results of subtraction between two difference spectra.

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<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/766/809>

Aleixo DL, Benvenutti MJ, Lera KRJL, Ciupa L, Ferraz FN, de Araújo SM. The Association of Ponderal Benznidazole with its Ultra-high Diluted Formula Reduces the Toxic Effects and Allows Increasing of Dose in Dose-dependent Protocol in Mice Infected with *Trypanosoma cruzi*. *Int J High Dilution Res.* 2015;14(3): 10-19. Abstract: Although several diseases are treated by toxic drugs, their side effects may hamper adherence to the therapy. The aim of this study is to evaluate the effect of the association of ponderal benznidazole (BZ) with its ultra-high diluted (UHD) formula on clinical and parasitological parameters of mice infected by *Trypanosoma cruzi* (T. cruzi). 24 non-isogenic Swiss mice were divided into groups: CI – infected animals treated with 7% alcohol; BZp – infected animals treated with BZ (500 mg/ kg) from the beginning of infection; BZp+d – infected animals treated with ponderal BZ and with UHD BZ, which started to be administered four days after the beginning of treatment with ponderal BZ; CNI - group of non-treated and non-infected animals. The UHD

medicine was prepared according to Phamacopoeia until 30x. The different treatment schedules were statistically compared through parasitological and clinical parameters. The group BZp+d displayed more favorable clinical evolution than the group BZp, with improvement of mass gain, feed conversion and water intake, presenting data approximated to CNI group. The significant increase of the body temperature of BZp+d group indicates an activation of the immune system which was not observed in the other groups. Moreover, the anti-parasitic effect of the ponderal drug was maintained in all parasitological parameters of this group. By reducing the side effects and maintaining the action of the ponderal drug, the combination of toxic drugs with their UHD formula could be considered a way of improving efficacy of the treatment.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/765/805>

Konar A, Sarkar T, Sukul NC, Sukul A, Chakraborty I. Transfer of the effect of potentized mercuric chloride on α -amylase from one test tube to another through capillary water. *Int J High Dilution Res*. 2015;14(1): 4-11. Objective: In a series of experiments we showed that treatment of a plant or animal with a diluted and agitated substance might affect other plants or animals connected to the former by the capillary water in cotton threads. The aim of the present study was to establish whether drug effect could be transferred in a cell-free medium. Design: Two test tubes, each containing 1 ml of 1% starch solution and 1 ml of α -amylase, were connected by means wet cotton threads encased in a polythene tube. One of the tubes also contained *Mercurius corrosivus* (Merc-c) 30 cH and the other ethanol solution (control). After 15 min, the enzyme activity was stopped with DNSA, and the breakdown product of starch, maltose, was estimated. A third, separate tube contained all the tested materials except for Merc-c and the control solution. In a second experiment 2 tubes, one containing 1,200 ppm and the other 200 ppm of maltose, were similarly connected over 15 min. Both experiments were repeated 20 times.

Results: In the first experiment, the amount of maltose was similar in both connected tubes, but it was significantly lower in the unconnected tube. In the second experiment, maltose concentration in both tubes remained unchanged. Conclusion: The information of Merc-c 30 cH was effectively transferred through capillary water between 2 tubes in cell-free medium. This effect was not due to physical transfer of either solvent or solutes. Water seems to be the most probable carrier of information in diluted and agitated solutions.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/758/744>

Chakraborty I, Datta S, Sukul A, Chakravarty R, Sukul NC. Variation in free and bound water molecules in different homeopathic potencies as revealed by their Fourier Transform Infrared Spectroscopy (FTIR). *Int J High Dilution Res* 2014; 13(49):189-196. Abstract background: Homeopathic potencies 12CH and above cross the Avogadro number, and as such do not contain any original drug molecules in their aqueous ethanol medium. It is thought H-bonded water structures preserved by ethanol carry the information of initial drug molecules. Potentized drugs show some differences with respect to their infrared (IR) absorption spectra. In a water-ethanol solution, free water molecules vary according to the concentration of ethanol. In the present study the concentration of ethanol has been kept constant at 0.03 molar fraction in 6 different homeopathic potencies. Objective: To see whether different homeopathic potencies having fixed ethanol content show variation in free water molecules. Methods: Two potencies like 8CH and 32CH of three homeopathic drugs *Natrum mur*, *Cantharis* and *Nux vomica* were used in the study, and their ethanol concentration was kept fixed at 0.03 molar fraction. The control was considered to be aqueous ethanol at the same concentration. Spectrum of pure water was also taken. Fourier transform infrared (FTIR) absorption spectra were obtained in the wave number region of 4000 – 2800 cm⁻¹. The half-width at half-maximum was

measured for each spectrum. The intensity of each spectrum was normalized at 3410 cm^{-1} close to the peak. The difference spectrum (absorbance of drug solution – absorbance of pure water) for each drug and the control was obtained. Results: FTIR spectra showed variation in absorbance intensity on both the high and low frequency side of the O-H stretching band in different drugs as well as the control. The C-H stretching band of 2977 cm^{-1} also showed variation in intensity in different drugs. In the difference spectra the absorbance intensity at the dip at 3630 cm^{-1} varied in different drugs and the control. The decrease in intensity at 3630 cm^{-1} and subsequent rise in intensity at lower frequency region represent the level of free water molecules and strong alcoholic O-H band around 3250 cm^{-1} , respectively. Conclusion: The drug and the control solutions show distinct variation in their FTIR spectra. The drugs have different levels of bound and free water molecules although their ethanol concentration is same.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/716/738>

Mano DM, Oliveira ECVD, Leonel AH, Berretta AA. Cationic topical formulations tested in high dilutions offers protective effects in fibroblast cells culture. *Int J High Dilution Res* 2013; 13(48):147-156. Abstract: Topical administration is a simple and comfortable form of cutaneous administration of drugs. However, in this route of administration the drug needs to overcome the barrier posed by the skin to reach an effective concentration. For this reason, many topical formulations are developed with a cationic component. The promotion of absorption occurs due to the disruption of the stratum corneum. But this cationic component has also high irritating potential to the skin. The biotherapies are medicines prepared from a toxic product or etiologic agent, following the homeopathic pharmacopoeia technique, and they are used mainly in cases of hypersensitization. In this experiment, high dilutions (HD) obtained from a cationic formulation were prepared and evaluated considering cell viability in

“in vitro” mouse fibroblast (L929) culture cells model by a colorimetric MTT assay. No signs of toxicity were observed, which demonstrates the safety of these HD preparations to the healthy cells. The effectiveness of these HD was also investigated in cells damaged by cationic formulations. The results demonstrated that the HD 30c was the most effective preparation in preventing the cell damage caused by the tested irritating product, increasing cell viability from 56.6% (damaged cells) to 100% (similar to negative control group, $p > 0.05$). These results provide evidence of the positive action of high dilutions against the exposure to a cytotoxic agent.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/690/724>

Konar A, Sarkar T, Chakraborty I, Sukul NC, Sukul A and Chakravarty R. Homeopathic drugs complementary, antidotal and inimical to Nux vomica produce stronger antialcoholic effect on toads than Nux vomica. *Int J High Dilution Res* 2014; 13(48): 157-164. Background: In homeopathy some drugs are known to act as complementary, antidotal or inimical to a particular drug. Practitioners can follow this rule when they apply one drug following another. Potentized Nux vomica can reduce acute hypnotic effect of alcohol on toads. Sulphur and Sepia are reported to be complementary to Nux-vom, while Coffea cruda and Zincum met are antidotal and inimical to Nux, respectively. The four drugs have been tested on the toad model to find out their actual therapeutic relationship with Nux vom. Objective: To verify the complementary effect of Sulphur and Sepia, antidotal effect of Coffea and inimical effect of Zincum in relation to Nux vom in the toad model. Methods: Five batches of toads, each comprising 20 individuals, were treated by partial immersion in a drug diluted with distilled water 1:500 for 20 min. The control consisted of 90% ethanol diluted with distilled water 1:500. The drugs were Nux vom 200 CH, Sulphur 200 CH, Sepia 200 CH, Coffea 200 CH and Zincum 200 CH. Toads of each batch were separately exposed to 260mM ethanol solution and tested every

10 min to see if they had lost their righting reflex (RR). For this, each toad was laid on its dorsal surface. If it failed to turn on its ventrum in a cut-off time of 60 sec it was considered to have lost its RR. Four more batches of toads were pretreated with Nux vom 200 CH and subsequently treated separately by Sulphur 200 CH, Sepia 200 CH, Coffea 200 CH and Zincum 200 CH. All the toads were then exposed to 260 mM ethanol solution to record their tolerance to ethanol anesthesia in terms of time to lose RR. Results: Toads treated with the five drugs took significantly longer time ($P < 0.01$, one-way ANOVA) to lose RR than those treated with the control. The time taken to lose RR was significantly longer ($P < 0.01$, one-way ANOVA) with Sulphur 200 CH, Sepia 200 CH, Coffea 200 CH and Zincum 200 CH than with Nux vom 200 CH alone. The situation was same when Nux treatment was followed by each of the four drugs. Of the five drugs Coffea showed the strongest anti-hypnotic effect. Conclusion: 1. Drugs complementary, antidotal and inimical to Nux vom showed the same anti-alcoholic effect as Nux in terms of increased tolerance to alcohol anesthesia. 2. The anti-alcoholic effect of Nux vom was markedly superseded by the above four drugs. 3. Of all the drugs tested Coffea showed the strongest anti-alcoholic effect. 4. It appears that the above four drugs produced their individual dominant effect cancelling the individual effect of Nux vom.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/703/729>

Chakraborty I, Sukul NC, Sukul A, Chakravarty R. Intergroup transfer of anti-alcoholic effect of Nux vomica 200 CH through the body of a live toad. *Int J High Dilution Res* 2014; 13(46): 03-12. Background: A homeopathic potency is usually given to the nursing mother for the treatment of her baby. Potencies above 12 CH cross the Avogadro number and are, therefore, too dilute to contain any original drug molecules. A potency is thought to be specifically structured water carrying the imprint of original drug molecules. It may convert the water structure in the body of the mother

and through her milk reach the suckling baby. Using a toad model we have recently demonstrated that the antialcoholic effect of Nux vomica 200 CH could be transferred from one group of toads to another through capillary water which carries the information of Nux vomica. Homeopathic potencies show UV spectra distinct from its diluent medium of aqueous ethanol. Does a potency remain effective even after passage through a living body? Objectives: To demonstrate that a potency effect can be transferred through the body of a live toad to other groups of toads connected through water to the live toad. Further, we want to see whether the UV spectra of drug solution and of water connected to the drug are similar in nature. Methods: A live toad was held vertically with one hind limb dipped in Nux vomica 200 CH solution in a beaker and another limb in distilled water in another beaker. The second beaker was connected by wet cotton threads encased in polythene tubes to 5 beakers, each of which contained adult toads in distilled water. A batch of toads was directly treated with Nux vomica 200 CH. An equal number of toads in distilled water served as the untreated control. After 30 min the control and the two batches of treated toads were kept separately in 209 mM ethanol solution. Toads, that stopped movement, were placed in supine position on a dry surface. Failure to assume a normal sitting posture within a cutoff time of 60 sec was regarded as loss of righting reflex (RR). The experiment was replicated using large number of toads. UV spectra of Nux vomica 200 CH solution and of water before and after connection with the drug were obtained. Results: The percentage of toads losing RR in the three groups of toads increased with time of exposure to 209 mM ethanol solution. The loss of RR was significantly delayed with the direct treatment group ($P < 0.001$, chi square test) and the connected groups ($P < 0.01$, χ^2 test) as compared to the control. The two former groups did not differ from each other significantly. UV spectra of Nux vomica 200 CH solution were similar to that of water connected to the drug solution. Conclusion: The antialcoholic effect of Nux vomica 200 CH could be transferred through the body

of a live toad to other groups of toads. The drug did not undergo denaturation during its passage through the living body. That water carries the information of original drug is further evidenced by the spectral properties of water connected to the drug solution through capillary water.

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<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/684/694>

Kay PH, Khuda-Buksh AR. The contribution of homeogenomic and homeogenetic studies in the support of the practice of Homoeopathy. *Indian J Res Homoeopathy* 2016;10:101-7. doi: 10.4103/0974-7168.183858. Abstract: Almost two decades ago, it was postulated that homoeopathic remedies could deliver their benefits by interacting with the genetic blueprint. Over the years, the results of many homeogenomic gene expression studies have confirmed this postulate. The results of homeogenomic studies have begun to recognize which of the estimated 25,000 human genes are targeted by different homoeopathic remedies and how the expression profiles of these targeted genes are rearranged. From a mechanistic standpoint, seminal homeogenomic studies have shown that homoeopathic remedies can also facilitate epigenetic modifications such as DNA methylation. This is an important discovery because DNA methylation plays an important role in the control of the expression of many genes. Understanding of the genes targeted by different homoeopathic remedies, taken together with information about the function of the protein/s encoded by the targeted gene/s provides a further complementary approach to homoeopathic remedy selection. In this review, as an example, we show how the results of homeogenomic studies support the applicability of frequently used homoeopathic remedies in patients suffering from cancer, particularly with respect to upregulation of the gene TP53. This review also outlines how the results of homeogenomic studies may also provide further help with potency selection and optimum dosage regimen.

Source:[http://www.ijrh.org/article.asp?issn=0974-](http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=101;epage=107;aulast=Kay)

[7168;year=2016;volume=10;](http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=101;epage=107;aulast=Kay)

[issue=2;spage=101;epage=107;aulast=Kay](http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=101;epage=107;aulast=Kay)

Zaman MM, Shaad MA, Ahmad S, Abbasi WM, Rehman T. Comparative analysis of antibacterial activity of povidone iodine and homoeopathic mother tinctures as antiseptics. *Indian J Res Homoeopathy* 2016;10:36-41. doi: 10.4103/0974-7168.179151. Objectives: Antiseptics are used extensively in hospitals and other health care centers (clinics) to control the growth of microbes on living tissues. They are essential parts of infection control practices, especially in wound treatment and aid in the prevention of nosocomial infections. This study was done to evaluate and compare the antibacterial effectiveness of povidone iodine and eight commonly used homoeopathic mother tinctures. Materials and Methods: The present study was conducted in the Faculty of Pharmacy and alternative Medicine, The Islamia University of Bahawalpur. All the selected Homeopathic mother tinctures were purchased by Masood Homeopathic Pharmaceuticals, Pakistan. Prepared PYODINEâ (povidone iodine) solution 10% w/v, batch no. 084F4 used as positive control while 70% ethanol was used as negative control in each test. These tinctures were tested against three clinically important human skin-pathogenic bacteria (*Staphylococcus aureus*, *Streptococcus pyogenes*, and *Pseudomonas aeruginosa*) by disc diffusion method with povidone iodine as positive standard. Results: Seven out of eight mother tinctures showed more or less antibacterial activity; some of them have high activity than povidone iodine. *Rhus glabra* had maximum activity (zone of inhibition 32 mm) against *Streptococcus pyogenes* and *Pseudomonas aeruginosa* than povidone iodine and among all the tested mother tinctures. Conclusion: This study confirms the antibacterial activity and more effectiveness of *Thuja occidentalis* and *Rhus glabra* mother tinctures than povidone iodine. The other tested mother tinctures also have antibacterial activity against tested bacteria, except *Echinacea*.

Source:[http://www.ijrh.org/article.asp?issn=0974-](http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=101;epage=107;aulast=Kay)

issue=1;spage=36;epage=41;aulast=Zaman

Paul B K, Kar S, Bandyopadhyay P, Basu R, Das S, Bhar D S, Manchanda RK, Khurana A, Nayak D, Nandy P. Significant enhancement of dielectric and conducting properties of electroactive polymer polyvinylidene fluoride films: An innovative use of Ferrum metallicum at different concentrations. *Indian J Res Homoeopathy* 2016;10:52-8. doi: 10.4103/0974-7168.179154.

Background: There are experimental evidences of nanoparticle aspect of homoeopathic medicine. It has also been established that the size of these nanoparticles (NPs) decrease with increase in potency. Aim: We have used this aspect of homoeopathic medicines in some technical applications. Here, to improve the electrical properties of an electroactive polymer, poly (vinylidene fluoride-hexa-fluoropropylene) (PVDF-HFP), we have incorporated in the polymer film, a very novel and unique probe Ferrum metallicum (FeM), a homoeopathic medicine, the size of which can be changed by dilution, followed by controlled agitation. Settings and Design: The composite film was synthesized by solution-casting technique. Using standard procedures, the characterization studies by X-ray diffraction, field-emission scanning electron microscope, and Fourier transform infrared spectroscopy were performed to check the incorporation of the NPs in the film. Material and Method: Each sample was freshly prepared 2 times by doping FeM in PVDF-HFP matrix using solution-casting technique, and the experiment was repeated with each sample for 5 times. Statistical Analysis: This being a continuous data recording, error bars cannot be shown. We have presented the graphs which have been repeated maximum number of times. Result and Conclusion: Our result shows that the electrical properties such as dielectric constant, tangent loss, and electrical conductivity of these polymer films get significantly modified due to incorporation of this homoeopathic nanomedicine and the effect increases with the increase in concentration of the probe up to a critical value. These FeM-incorporated PVDF-HFP films will have potential applications as high-energy storage

devices such as multilayered high-charge storage device.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=52;epage=58;aulast=Paul>

Kishore L, Singh R. Protective effect of *Gymnema sylvestre* L. against advanced glycation end-product, sorbitol accumulation and aldose reductase activity in Homoeopathic Formulation. *Indian J Res Homoeopathy* 2015;9:240-8. doi: 10.4103/0974-7168.172866.

Background: Oxidative stress ensues due to the imbalance between the production and elimination of reactive oxygen species. Chronic hyperglycemia along with oxidative stress plays major role in aggravation of chronic disorders such as diabetes and its related complications. Objective: This study was designed to evaluate the protective effect of *Gymnema sylvestre* L. against oxidative stress. Materials and Methods: Potencies of *G. Sylvestre* were procured from Dr. Willmar Schwabe India Pvt. Ltd. In vitro antioxidative potential of *G. sylvestre* was evaluated by employing various in vitro antioxidant methods. Results: The total phenol content was found to be 2124, 998 and 546 mg/g Gallic Acid Equivalents in Mother tincture, 6C and 30C of *G. sylvestre* and total antioxidant capacity was found to be 2940,802 and 559 μ M/g ascorbic acid equivalents respectively. Mother tincture, 6C and 30C of *G. sylvestre* were found to have strong reducing power, 2,2-diphenyl-1-picrylhydrazyl radical, hydrogen peroxide, nitric oxide and superoxide radical scavenging activity. Percentage inhibition of advanced glycation end-products formation by Mother tincture, 6C and 30C of *G. sylvestre* (10-50 μ l) was found to be 38.66 to 95.80%, 30.93 to 81.48% and 31.34 to 60.92% respectively. Mother tincture, 6C and 30C of *G. sylvestre* showed an inhibitory effect against sorbitol accumulation with inhibitory concentration (IC₅₀) value 27.55 μ l, 197.96 μ l and 1.009 ml respectively whereas in aldose reductase inhibition assay, the IC₅₀ value of 28.10 μ l, 159.71 μ l and 0.82 ml respectively. Conclusion: These results suggested that Homoeopathic preparations of *G. Sylvestre* had potent antioxidant and

antiglycation activity.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=4;spage=240;epage=248;aulast=Kishore>

Nandy P. A review of Basic Research on Homoeopathy from a physicist's point of view. *Indian J Res Homoeopathy* 2015;9:141-51. doi: 10.4103/0974-7168.166372. Abstract: Homoeopathic medicine has been one of the world's most widely practiced alternative therapies. However, that the potency of a homoeopathic medicine increases with dilution followed by succussion (together termed as potentization) has thrown challenges to the scientific community at large. A recent hypothesis, advanced by us and others, is that due to the process of potentization, the size of the constituent particles decreases and eventually reaches nanodimension. This decrease in size with increase in potency has been verified by scanning electron microscopy and dynamic light scattering studies. The increase in potency is manifested in its increased effect on membrane fluidity. The change in potency also leaves its signature on Ultraviolet-Visible spectra, Fourier transform infrared radiation spectra and Raman spectra. We have taken one step further to carry this nano-dimensional property of homoeopathic medicine and put it into several technical applications. And in so doing, we have connected the important, old, un-quantifiable effects with the latest quantifiable technology and opened up an era of applications with more possibilities.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=141;epage=151;aulast=Nandy>

Ganesan T, Ravi DB, Vasavan J, Khurana A, Nayak D, Periandavan K. Homoeopathic preparation of *Berberis vulgaris* as an inhibitor of Calcium oxalate crystallization: An in vitro evidence. *Indian J Res Homoeopathy* 2015;9:152-7. doi: 10.4103/0974-7168.166374. Background: *Berberis vulgaris* is the most widely used drug in Homoeopathy for treating urolithiasis. However, its mechanism of action in alleviating its consequences

remains uncertain. Objective: To explicate the potential role of Homoeopathic preparation of *B. vulgaris* on in vitro Calcium oxalate (CaOx) crystallization. Materials and Methods: Spectrophotometric crystallization assay was carried out, and the slopes of the nucleation (till the maximum) and aggregation (after the peak) phases were calculated using linear regression analysis, and the percentage inhibition exerted by the modifiers was calculated. Light microscopic observation of CaOx crystals formed in the presence or absence of modifiers was carried out to support the outcome with spectrophotometric crystallization assays and to ascertain the potential role of *B. vulgaris* in CaOx crystallization. Results: The crystallization studies performed so far signifies *B. vulgaris* to be a potent drug against CaOx crystallization both at the level of nucleation and aggregation. Conclusion: Our present findings add up to the experimental evidence to support the efficacy of the homeopathic preparation of the *B.vulgaris* in modulating the primary events of stone formation.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=3;spage=152;epage=157;aulast=Ganesan>

Gupta G, Srivastava A K, Gupta N, Gupta G, Mishra S. Anti-candidal activity of homoeopathic drugs: An in-vitro evaluation. *Indian J Res Homoeopathy* 2015;9:79-85. doi: 10.4103/0974-7168.159522. Background: *Candida albicans* is an opportunistic pathogenic fungus accounting for up to 75% of all candidal infections in human beings. Generally *Candida* grow and survive as commensals but slight modification of the host defense system can transform *Candida albicans* into a pathogen. Materials and Methods: Samples collected from the oral cavity and tongue of the patients suspected of suffering from oral candidiasis were incubated for growth of *Candida*. Fermentation and assimilation test confirmed the species as *Candida albicans*. Disc method was used to assess the in-vitro anti-candidal effect of few homoeopathic drugs in 30 and 200 potencies against human pathogenic *Candida albicans* under in-vitro conditions and compared with standard antifungal drug

ketoconazole (control), rectified spirit (control/vehicle) and distilled water (vehicle) by "inhibition zone technique". Results: Homeopathic drugs namely Acid benzoicum, Apismellifica, Kali iodatum, Mezereum, Petroleum, Sulphur,

Tellurium, Sulphur iodatum, Graphites, Sepia, Silicea and Thuja occidentalis in 30 and 200 potencies were tested against *Candida albicans*. Mezereum in 200 and 30 potency showed maximum inhibition of growth of *Candida albicans* followed by Kali iodatum 200 while Kali iodatum 30 and Petroleum 30 had minimum inhibition. Conclusion: The results of these experiments support the concept of "evidence based medicine" depicting that homoeopathic medicines not only work in in-vivo but are equally effective in in-vitro conditions having definite inhibitory activity against *Candida albicans*.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=2;spage=79;epage=85;aulast=Gupta>

Khan A, Khuwaja G, Islam F, Javed H, Ishrat T, Vaibhav K, Khan B, Tabassum R, Das M, Ahmed ME, Islam F. Protective effect of Zincum metallicum on rat model of Parkinson's disease. *Indian J Res Homoeopathy* 2015;9:86-95. doi: 10.4103/0974-7168.159528.

Background: Parkinson's Disease (PD) is one of the major neurodegenerative disorders, and oxidative stress has been implicated in playing an important role in the pathogenesis of the disease. Zincum metallicum, produces symptoms mentioned in Homoeopathic Materia Medica which are akin to PD on which basis it might be considered as one at the intermediate to treat the disease. Materials and Methods: Rats were divided into eight groups; surgery was done by stereotaxic apparatus. 6 - hydroxydopamine was used to induce parkinsonism thereafter on 16 th day of lesioning animals were assessed by the video path analyzer. Animals were sacrificed and biochemical assays (Lipid peroxidation [LPO], glutathione [GSH], glutathione peroxide [GPx], glutathione reductase [GR], glutathione-S-transferase [GST]) and level of dopamine (DA), 3,4-dihydroxyphenylacetic acid (DOPAC), and

homovanillic acid (HVA), were estimated. Further dopaminergic D 2 receptor binding was also done to confirm the induced parkinsonism. Results: The behavior activities (locomotor, distance travel, stereorevent) were decreased whereas the rest time was increased in lesion group animals as compared to the sham group. The locomotor activity and the distance traveled were protected significantly with 6C whereas rest time was protected significantly with 30C and 200C of Homoeopathic medicine Zincum metallicum. On the other hand, S + 30C and S + 200C groups have shown increased locomotor activities as compared to S group. The rest time was also increased significantly in S + 6C and S + 30C group animals as compared to S group. The elevated level of LPO and DA D 2 receptor binding density in PD group was protected significantly with Zincum metallicum (6C, 30C, and 200C). The depleted level of GSH and activity of antioxidant enzymes (GPx, GR, and GST) and DA and its metabolites DOPAC and HVA were protected significantly with Zincum metallicum (6C, 30C, and 200C). Conclusion: The study indicates the Zincum metallicum may be helpful in slowing down injury in parkinsonism and could be a beneficial drug for the prevention of PD.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=2;spage=86;epage=95;aulast=Khan>

Sundaram EN, Singh KP, Reddy PK, Nair KJ, Khurana A, Singh H, Nayak C. An investigation to evaluate the analgesic and central nervous system depressant activities of *Solanum nigrum* (Linn.) in Homoeopathic potencies in experimental animal models. *Indian J Res Homoeopathy* 2015;9:12-9. doi: 10.4103/0974-7168.154343. Background and Objective: In Homoeopathy, *Solanum nigrum* is clinically used in the treatment of ergotism, meningitis, irritation during dentition and some of the symptoms of neurological disorders but its Central Nervous System (CNS) potential has not been explored experimentally yet. Therefore, a preliminary study was conducted with an objective to evaluate the analgesic and CNS depressant effects of homoeopathic potencies of *S. nigrum* in experimental

animal models.

Materials and Methods: The study was conducted in Wistar albino rats using a hot plate, ice plate and Randall-Selitto assay for analgesic; rota-rod and open field test for CNS depressant activities. The different potencies (3X, 6X, 12X and 30C) of *Solanum nigrum* were administered orally (0.5 ml/rat/day) for 30 days and response was assessed after 30 minutes of drug administration on 10th, 20th and 30th day.

Results: The result shows that all the four potencies of *Solanum nigrum* has increased the latency time required to raise and lick the paws for thermal sensation on hot plate test and for cold sensation on ice plate test and also increased the degree of threshold pressure to mechanically induced pain on Randall-Selitto assay but depressed the motor coordination and locomotor activities. **Conclusion:** The result obtained from this preliminary study suggests that homoeopathic preparation of *Solanum nigrum* in different potencies possess analgesic and CNS depressant activities. Further detailed investigations are required for its possible human use.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=12;epage=19;aulast=Sundaram>

Singh S, Karwasra R, Kalra P, Kumar R, Rani S, Nayak D, Gupta Y K. Role of homoeopathic mother tinctures in rheumatoid arthritis: An experimental study. *Indian J Res Homoeopathy* 2015;9:42-8. doi: 10.4103/0974-7168.154348. **Objectives:** The objective of present preliminary study was to assess the anti-inflammatory, analgesic and anti-arthritis effect of some homoeopathic mother tinctures viz. *Ricinus communis* (RCMT), *Rauwolfia serpentina* (RSMT), *Bellis perennis* (BPMT), *Curcuma longa* (CLMT), *Terminalia arjuna* (TAMT) and *Tribulus terrestris* (TTMT). **Materials and Methods:** Paw oedema was induced by administration of 0.1ml 1% carrageenan in normal saline into right hind paw. Degree of inflammation was evaluated according to paw swelling. Arthritis was induced by Complete Freund's Adjuvant (CFA) injection in metatarsal footpad

of Wistar albino rats. **Result:** *Curcuma longa* and *Tribulus terrestris* mother tinctures reduced hind paw swelling decreased the paw volume in Carrageenan treated rats. Thus, revealed potent activity against inflammation. All homoeopathic mother tinctures showed peripheral analgesic activities in hot plate induced thermal algia in mice.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=1;spage=42;epage=48;aulast=Singh>

Maiti S, Bera TK, Chatterjee K, Ghosh D. A study of the effect of mother tincture of *Syzygium jambolanum* on metabolic disorders of Streptozotocin induced diabetic male albino rat. *Indian J Res Homoeopathy* 2014;8:129-35. doi: 10.4103/0974-7168.141730. **Background:** *Syzygium jambolanum* is widely used in Homoeopathy for treating Diabetes mellitus and its complications.

Objective: To explore the remedial effects of homoeopathic mother tincture *Syzygium jambolanum* on metabolic disorders of Streptozotocin induced diabetic male albino rat. **Materials and Methods:** Serum levels of insulin, urea, uric acid, creatinine, albumin and total protein were measured as per the standard methods using specific kits. Amount of glycogen in liver and skeletal muscles, activities of antioxidant enzymes as well as content of free radical by products in liver and kidney tissues were assessed biochemically following the standard protocol.

Results: The study indicated that the treatment of mother tincture of *Syzygium jambolanum* in diabetic albino rats restored the body weight and significantly controlled the elevated blood glucose level as compared with the untreated group. Levels of glycogen in liver and skeletal muscle tissues were recovered by treatment with *Syzygium jambolanum* in diabetic rats as compared with the untreated diabetic rats. Levels of serum urea, uric acid and creatinine were increased in diabetic rats significantly as compared with the control group, which were resettled in the control group after treatment with mother tincture of *Syzygium jambolanum* in diabetic animals. Alongside, significant recovery in the activities

of antioxidant enzymes like catalase, peroxidase and super oxide dismutase, the levels of free radicals generated as by products in hepatic and renal tissues were also observed in the treatment with mother tincture of *Syzygium jambolanum* treated diabetic animals with respect to the untreated in diabetic animals. Conclusion: The homoeopathic mother

tincture of *Syzygium jambolanum* has therapeutic effect on metabolic disorders and oxidative injuries in Streptozotocin induced diabetic male albino rats.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=3;spage=129;epage=135;aulast=Maiti>

Chapter : XI

Homeopathy in veterinary practice

When in 1813 Dr. Hahnemann hinted upon the fact that Homeopathy could be beneficial to animals³⁸⁴ just as well as to people, little did he realise that veterinary homeopathy would become a major offshoot of mainstream homeopathy. Interest and acceptance of complementary and alternative veterinary medicine (CAVM) within the veterinary profession has continued to increase in all parts of world, reported use being available from Europe³⁸⁵, USA³⁸⁶ and India³⁸⁷. Most member countries of European Council for Classical Homeopathy (Armenia, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Finland, Germany, Greece, Ireland, Israel, Norway, Serbia, Spain, Sweden, Switzerland, United Kingdom) report use of homeopathy for animals to some extent, while other few report of a more common use. This is in particular true for Germany and Sweden, where training courses in animal homeopathy have been established. Such courses also exist in Finland, Norway and Switzerland.³⁸⁸ In USA, the academy of Veterinary Homeopathy offers courses in veterinary classical homeopathy. In other places, there are associations of veterinary homeopaths. In India, however, neither such association nor any specialized courses exist. Whatever is

being practised has been borrowed from human homeopathy and used in veterinary clinics.³⁸⁹

Homeopathy has gained the reputation of an effective alternative therapy in veterinary practice. High cost of modern medicine, their inherited side effects and problems of antimicrobial residues in animal products have caused an apparent discomfort to animal owners invoking their interest in alternative approaches of animal health care. The Veterinary Medicines Division of European Medicines Agency advocates reduction in the use of antimicrobials as their use in animals – for treatment and disease prevention – may give rise to treatment failures in veterinary medicine as well as project a potential food safety problem. Furthermore, it may cause contamination as resistant bacteria and resistance genes can spread from food animals or food derived thereof to humans through the food-chain, through direct contact from animals to animal keepers but also to the environment. As genetic mutations, gene selection and movements in bacteria are associated with the use of antimicrobial agents, efforts to contain antimicrobial resistance must focus on avoiding unnecessary use of antimicrobial agents and promoting their responsible use. Prevention and containment of

³⁸⁴ Hahnemann C.F.S. *Homoopathische Heilkunde der Haustiere*. Karl-Marx Universitätsbibliothek Leipzig, (Handsebriftenabteilung), c1813.

³⁸⁵ European Council for Classical Homeopathy; *The Homeopathic Treatment of Animals in Europe*; Third Edition November 2007

³⁸⁶ Budgin J.B. and Flaherty M.J.; *Alternative therapies in veterinary dermatology*; *Vet Clin Small Anim* 43 (2013); pp 189-204

³⁸⁷ Madrewar B.P.; *A scientific clinical research veterinary Homeopathy*; first edition 2006; pp 1-5

³⁸⁸ European Council for Classical Homeopathy; *The Homeopathic Treatment of Animals in Europe*; Third Edition November 2007

³⁸⁹ Madrewar B.P.; *A scientific clinical research veterinary Homeopathy*; first edition 2006; pp 1-5

antimicrobial resistance requires a holistic, multifaceted and inter-sectorial approach.³⁹⁰ Since homeopathic medicines are non-toxic and result in reduced use of antibiotics and other medicines, and, therefore, lesser medicine residues in, European Union recommended the homeopathic and phytotherapeutic medicines as the first choice in the healthcare of animals being raised organically.³⁹¹ Further, farmers in developing countries look for a cheaper, eco-friendly, safe and effective alternative as a 'firstline' therapy.³⁹²

In most European countries both pets and farm animals are treated homeopathically. Most commonly pets include cats and dogs, and farm animals mainly include cattle and horses, but to some extent pigs and birds such as canaries and parrots are given homeopathic medicines. Animals are treated homeopathically for both acute and chronic conditions. Acute conditions include injuries. Both physical and behavioural problems are treated. Physical problems include conditions of the skin such as eczemas, eye inflammations, allergies, cough, gastrointestinal disorders, urinary tract diseases including infections and diseases of the kidneys, diabetes, problems of the liver and thyroid, diseases of the loco motor system, neurological complaints such as paralysis and epilepsy, and hormonal disturbances. More specifically cows and sheep are treated for mastitis, calves for diarrhoea, pigs for respiratory difficulties and birds for eye infections. Complaints arising from vaccination and breeding problems are also treated. In India, a survey conducted in Kerala (India) revealed most veterinarians used homeopathic medicines for diseases like mastitis, wart, posterior paralysis, FMD lesion, hemagalactia, tetanus etc.

and found good results.³⁹³

More formal trials with homeopathic medicines have shown encouraging results in the management of bovine mastitis among other conditions.³⁹⁴ In fact, mastitis, a frequently encountered disease in veterinary clinics, is such an economic burden that the search for cost-effective complementary and alternative treatment approaches for management of mastitis is being pursued throughout the world.³⁹⁵ According to the survey of WHO and Food and Agriculture Organization 2000, 85% of animals in developing countries are given alternative therapies for their ailments; main alternatives being Homeopathy and Ayurveda.³⁹⁶ More research articles have been published on the subject in countries such as Germany, Norway, Sweden and the United Kingdom. Examples include projects on treatment of eczema in horses in Finland, utilisation, effects and implications of homeopathy in health and productivity of dairy cows in Norway, and a number of trials in farming animals in Sweden. These include a survey of 41 dairy farmers reporting 76 % improvement in their animals. Results indicate significant reduction in the use of antibiotics in animals. This was also the main reason why farmers opted for homeopathy.³⁹⁷

Overall, the last three decades have seen a considerable increase in the number of clinical trials. This could be attributed to the ongoing argument over the placebo effect, and its role in the homeopathic treatment process. The presumption behind this is that by showing effects on animals, Homeopathy could rise above the 'mere placebo' label. The minimal or no placebo effect, although true to an extent, has further been debated of late. With respect

³⁹⁰Veterinary Medicines Division, European Medicines Agency; Revised ESVAC reflection paper on collecting data on consumption of antimicrobial agents per animal species, on technical units of measurement and indicators for reporting consumption of antimicrobial agents in animals; 10 October 2013; EMA/286416/2012-Rev.1; pp 5-6

³⁹¹European Council for Classical Homeopathy; The Homeopathic Treatment of Animals in Europe; Third Edition November 2007

³⁹²Madrewar B.P.; A scientific clinical research veterinary Homeopathy; first edition 2006; pp 1-5

³⁹³Madrewar B.P.; A scientific clinical research veterinary Homeopathy; first

edition 2006; pp 1-5

³⁹⁴Upadhya AK, Sharma SP. Management of bovine mastitis by homeopathy. Indian Vet Med J 1999; 23: 71-72.

³⁹⁵Varshney JP, Ram Naresh; Buffalo udder diseases and homeopathy; Homeopathy (2004) 93, 17-20

³⁹⁶Madrewar B.P.; Scientific Clinical Research: Veterinary Homeopathy; B Jain Publishers 2006

³⁹⁷European Council for Classical Homeopathy; The Homeopathic Treatment of Animals in Europe; Third Edition November 2007

to the classical concept of placebo, animals cannot discriminate between drug and food or verum and placebo and therefore have no expectation regarding recovery (provided they have not been conditioned). But with respect to modern concepts of the placebo effect or context effects, various aspects have been reported to elicit a placebo response in animals.³⁹⁸

Clinical research in veterinary homeopathy has some inherent advantages compared to clinical research in human homeopathy. The environmental conditions can be considered as rather stable and comparable for all patients when located in the same isolated pen, kennel, etc. It is easier, in principle, to acquire larger numbers of participants, at least of livestock animals, and to maintain blinding. Therefore, studies of veterinary homeopathy that account for the above mentioned adaptations of the study design may be more useful in investigating whether homeopathic remedies have specific effects over and above those of placebo. However, the challenges like interview-based repertorisation being limited to objective parameters and interrogations of the animal owners, only a few drug provings available in animals and a small number of remedies enlisted for animals in the *MateriaMedica* make the procedure rather cumbersome. In several cases, a human repertory and *MateriaMedica* are used to find the *similimum*, an approach that is questioned by some authors.³⁹⁹

Several clinical trials and systematic reviews have been carried out to see the response of homeopathic treatment in animals. The Veterinary Clinical Research Database for Homeopathy enlists 405 studies on use of homeopathy in veterinary including case reports, case series, controlled trials etc.⁴⁰⁰ By the end of 2013, the total number of peer-reviewed RCTs had risen to 44. Nineteen RCTs were placebo controlled; the remaining 25 were controlled by

another comparator. These trials were conducted on conditions including mastitis, diarrhoea, endometritis, infertility in cattle; fear of firework noises and osteoarthritis in dogs; immune response in goats and diarrhoea, growth rate, induction of farrowing, infectious diseases and reproductive performance in pigs. Out of the 19 placebo-controlled trials, 12/19 (63%) were positive; while 7/19 (37%) were non-conclusive. In the studies that did not include a control group, positive results were found for conditions like mastitis in cattle, Kennel cough in dogs, Epilepsy in dogs, Cushing's disease in dogs and horses and Stillbirth in pigs.⁴⁰¹ In a recent systematic review by Clausen et al, it was pointed out that cattle were the study subjects most often employed, followed by pigs and dogs and horses. Most trials investigated the benefit of homeopathic prophylaxis or treatment in mastitis control and postpartum disorders. In addition, 29 trials investigated the effects of homeopathy application for performance improvement (health, growth, reproduction).

A secondary analysis of the data existing on the Veterinary Clinical Research database until early 2013 revealed the following:

The encouraging findings in the analyses above clearly call for more organised researches in veterinary stream. This resonates with the earlier findings in various

³⁹⁸J. Clausena, H. Albrechta, R.T. Mathie; Veterinary Clinical Research Database for Homeopathy: Placebo-controlled trials; *Complementary Therapies in Medicine* (2013) 21, 115–120

³⁹⁹Upadhya AK, Sharma SP. Management of bovine mastitis by homeopathy. *Indian Vet Med J* 1999; 23: 71–72.

⁴⁰⁰<http://www.carstens-stiftung.de/clinresvet/ergebnis.php>; Last accessed on June 24, 2014

⁴⁰¹<http://www.facultyofhomeopathy.org/research/veterinary-research/>; Last accessed on June 24, 2014

researches.^{402,403,404,405,406,407}

Central Council for Research in Homeopathy⁴⁰⁸, India, has identified a few priority areas for research in veterinary science. These include subclinical mastitis, diarrhoea, skin diseases, reproductive disorders (metritis, infertility etc.), wound/injury management and problems concerning productivity of animals. Further, a new data outlines the future vision for veterinary search.¹⁰ It confirms that individualised prescribing is the usual approach to homeopathic management of both cats and dogs. This individualised approach to therapy is less amenable to explanatory, placebo-controlled, double-blinded, trial design and the challenge to overcome the methodological difficulties must be met. Another novel approach would be to research the efficacy of a given, well-indicated, homeopathic medicine for a specific condition (such as RRA in arthritis, as perhaps suggested by the present study's findings), where only patients matching that

medicine's symptom picture would be randomised to verum or to placebo. Suitably designed pragmatic trials are also necessary to establish the effectiveness of individualised homeopathy in routine clinical practice.

Since Homeopathy is still to go a long way in order to establish its role in veterinary science, there is a vast scope for research. High-quality research can only be taken up when veterinary scientists and conventional practitioners are willing to collaborate for homeopathic projects on priority basis.

A secondary analysis of the data existing on the Veterinary Clinical Research database until early 2013 revealed the following:

⁴⁰²European Council for Classical Homeopathy; The Homeopathic Treatment of Animals in Europe; Third Edition November 2007

⁴⁰³Budgin J.B. and Flaherty M.J.; Alternative therapies in veterinary dermatology; Vet Clin Small Anim 43 (2013); pp 189-204

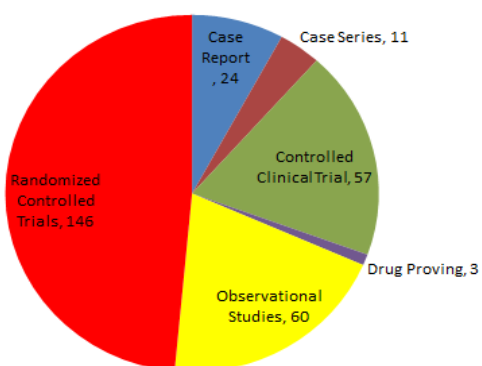
⁴⁰⁴Madrewar B.P.; Scientific Clinical Research: Veterinary Homeopathy; B Jain Publishers 2006

⁴⁰⁵Upadhyaya AK, Sharma SP. Management of bovine mastitis by homeopathy. Indian Vet Med J 1999; 23: 71-72.

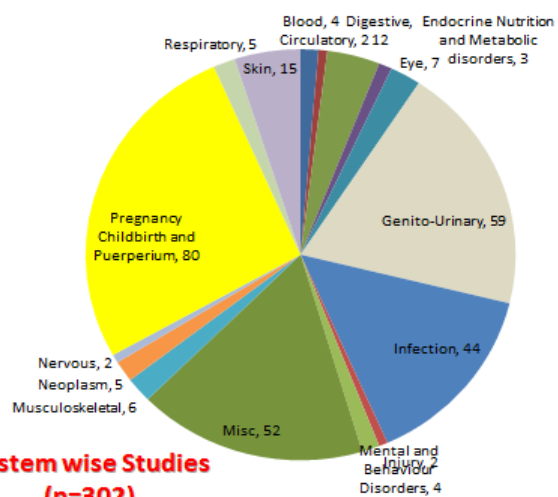
⁴⁰⁶RT Mathie, L Hansen, MF Elliott and J Hoare; Outcomes from homeopathic prescribing in veterinary practice: a prospective, research-targeted, pilot study; Homeopathy (2007) 96, 27-34

⁴⁰⁷Robert T Mathie¹, Elizabeth S Baitson, Lise Hansen, Mark F Elliott and John Hoare; Homeopathic prescribing for chronic conditions in feline and canine veterinary practice; Homeopathy (2010) 99, 243-48

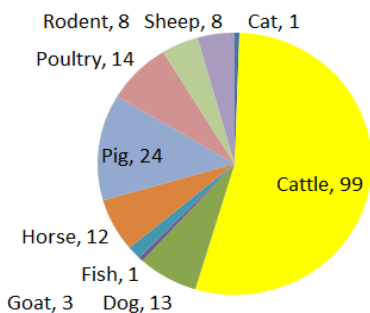
⁴⁰⁸<http://ccrindia.org/index.asp>



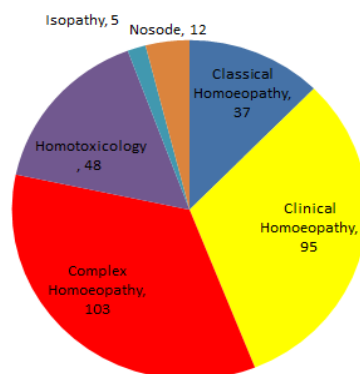
Major Study Design already undertaken (n=301)



System wise Studies
(n=302)



No. of Controlled Studies in Different Species (n=183)



Type of Homoeopathy used in Veterinary (n=300)

Veterinary research updates

European regulation of organic farming implies an extension of this type of research in the coming years. http://ec.europa.eu/agriculture/organic/animal-welfare/health_en

http://ec.europa.eu/agriculture/organic/eu-policy/legislation_en

Council regulation (EC) N°834/2007 is binding and directly applicable in all EU Member States (applied from 1 January 2009).

European Parliament – Budget 2012 “AGRI/5227”. Pilot project – Coordinate research on the use of homeopathy and phytotherapy in livestock farming. Justification: antibiotic resistance is a growing worldwide problem. One reason is the use of antibiotics in livestock farming. This is why research on alternative methods has to be moved forward.

Source: www.europarl.europa.eu/meetdocs/2009_2014/documents/agri/dv/2012_agri_budg_amends_txt_/2012_agri_budg_amends_txt_sl.pdf

Other examples of veterinary research: See references.^(409,410,411,412,413,414,415,416,417,418,419)

2008 – 63rd LMHI Congress’ Proceedings: Magnani P, Conforti A, Bellavite P. Effects of homeopathic

drugs on the anxiety-like behaviour in mice. Blind design, Diazepam and placebo controlled./ Boujedaini N. Action de Gelsemium sempervirens sur la synthèse d’allopregnanolone. Blind design versus placebo./

Castilhos. Effect of the Arnica Montana 200CH followed by Medicago Sativa 6CH and Calcarea Phosphorica 6CH usage in the feed consumption and weight gains of goat weaned kids. Double-blind placebo controlled trial./

Weber S, Endler PC, Welles SV, Suanjak-Traidl E, Scherer-Pongratz W, Frass M, Spranger H, Peithner G, Lothaller H. Thyroxine 30X, Electromagnetic field influence (microwave, mobile phone, x-ray) and highland frogs. Multi-centric, blinded controlled study on 2980 animals./

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⁴⁰⁹Chaudhuri S, Varshney JP. Clinical management of babesiosis in dogs with homeopathic Crotalus horridus 200C versus allopathy. *Homeopathy*. 2007;96:90-94.

⁴¹⁰Varshney JP. Clinical management of idiopathic epilepsy in dogs with homeopathic Belladonna 200 C: A case series. *Homeopathy*. 2007;46-48.

⁴¹¹Lira-Salazar G, Marines-Montiel E, Torres-Monzon J, Hernandez-Hernandez F, Salas-Benito JS. Effects of homeopathic medications Eupatorium perfoliatum and Arsenicum album on parasitemia of Plasmodium berghei-infected mice (Malaria). *Homeopathy*. 2006;95:223-228.

⁴¹²Rajkumar R, Srivastava SK, Yadav MC, Varshney VP, Varshney JP, Kumar H. Effect of a Homeopathic complex on oestrus induction and hormonal profile in anoestrus cows. *Homeopathy*. 2006;95:131-135.

⁴¹³Berchieri A, Turco WCP, Paiva JB, Oliveira GH, Sterzo EV. Evaluation of isopathic treatment of Salmonella enteritidis in poultry. *Homeopathy*. 2006;95:94-97. Aboutboul R. Snake remedies and eosinophilic granuloma complex in cats. *Homeopathy*. 2006;95:15-19.

⁴¹⁴Werner C, Sobiraj A, Sundrun A. Efficacy of homeopathic and antibiotic treatment strategies in cases of mild and moderate bovine clinical mastitis. *Journal of Dairy*

Research. PubMed 2010.

⁴¹⁵Soto FRM & all. A randomized controlled trial of homeopathic treatment of weaned piglets in a commercial swine herd. *Homeopathy*. 2008;97:202-205.

⁴¹⁶Zacharias F & all. Effect of homeopathic medicines on helminth parasitism and resistance of Haemonchus contortus infected sheep. *Homeopathy*. 2008;97:145-151.

⁴¹⁷Klocke P, Ivemeyer S, Butler G, Maeschli A, Hail F. A randomized controlled trial to compare the use of homeopathy and internal Teat Sealers for the prevention of mastitis in organically farmed dairy cows during the dry period and 100 days post-calving. *Homeopathy*. 2010;99:90-98.

⁴¹⁸Camerlink I, Ellinger L, Bakker EJ, Lantinga EA. Homeopathy as replacement to antibiotics in the case of Escherichia coli diarrhea in neonatal piglets. *Homeopathy*. 2010;99:57-62.

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2011 – 66th LMHI Congress' Proceedings :

Kumar S. comparative treatment of clinical mastitis in bovines with homeopathy and antibiotics.

2012 – Publication in International Journal:

Mathie T.T. retrieved 150 published papers, only 38 were of sufficient quality to allow a systematic review including 7 different animal species and 27 different species-specific medical conditions. A systematic review will be organized in the following time. *Homeopathy* (2012);101:196-203.

de Souza MFA et al. studied the effect of individualized homeopathic treatment on the semen quality of bulls with reproductive disorders (a case series). *Homeopathy* (2012);101:243-245.

Coelho et al. did an evaluation of homeopathic and biotherapeutic treatments in a swine farm to control *Escherichia coli* infection at long term. The homeopathic treated group passed from 75 % of diarrhea incidence to 8,3 %; weight gain in homeopathic group was 15 % higher than in the control group. *Int J of High Dil Res* (2012); Vol 11 n°40:136-137.

2012 – 67th LMHI Congress' Proceedings

Shelley R. Epstein presented an overview of case reports, case series and clinical trials in Veterinary Homeopathy around the world including five species including mastitis, enteric pathogens, reproduction and parasitism.

Peter Gregory presented a talk about the cancer miasm and

Carcinosin in Animals, there is always an element of excessive control in the history and behaviour of such animal.

2013 – Publication in International Journal

Ferreira de Lima L & all. A treatment with FSH (6CH) during 24h maintained the viability and promoted the activation and in vitro growth of ovine FPs. Dynamized follicle-stimulating hormone affects the development of ovine preantral follicles cultured in vitro. *Homeopathy* (2013) 102:41-48.

2014-16 – New publications

Aubry E, Issautier MN, Champomier D, Terzan L. Early udder inflammation in dairy cows treated by a homeopathic medicine (Dolisovet®): a prospective observational pilot study. *Homeopathy* 2013;102:139-44.

Ointment Dolisovet® (Belladonna 1 dH, Calendula MT, Echinacea 1 dH, Dulcamara 1 cH) was tested in a prospective, uncontrolled, observational pilot study involving the collection and analysis of data from 31 udder quarters identified as being inflamed by an automated milking system (AMS). Inflamed quarters were identified when milk quality started to deteriorate, via an alert generated by the AMS, on the basis of electrical conductivity (EC). A significant reduction in EC was observed 4-7 days following the first treatment. An increase in milk yield was also observed following the first treatment. Dolisovet® may have a beneficial therapeutic effect in the early stages of udder inflammation and for restoring udder health and function. This medicine may be an effective first line treatment for sub-clinical bovine mastitis, reducing the need for antibiotics.

Braccini GL, Natali MRM, Ribeiro RP, Ricardo Hideo Mori RH, Riggo R, Oliveira CAL, et al. Morpho-functional response of Nile tilapia (*Oreochromis niloticus*) to a homeopathic complex. *Homeopathy* 2013;102:233-41.

This randomized four-armed controlled study evaluated the performance, prevalence of ectoparasites and morpho-functional response of the liver and the branchiae of Nile tilapia (*Oreochromis niloticus*) raised on fish meal with added of the homeopathic complex Homeopatila 100® at different concentrations. Significant differences in the mixed parasite conditions were found within the different Homeopatila 100® treatments. The hepatosomatic ratio of fish treated with Homeopatila 100® was significantly lower than that of fish from the control group. The best results in the liver and branchiae occurred in fish receiving Homeopatila 100® at 40 mL/kg in terms of the number of hepatocytes/mm², the intercellular glycogenic behaviour, the rates of histological changes (hyperplasia, lamella fusion and telangiectasia) and the percentage of neutral and acidic mucin-producing cells.

de Oliveira Feitosa KC, Povh JA, de Abreu JS. Physiological responses of pacu (*Piaractus mesopotamicus*) treated with homeopathic product and submitted to transport stress. Homeopathy 2013;102:268-73.

Transport resulted in stress responses in juvenile pacu (*Piaractus mesopotamicus*) and the homeopathic complex, administered in the water or diet, did not minimize these responses. Sucrose supplementation altered the cortisol and blood glucose levels, suggesting a moderating effect on these stress indicators.

Deni D, Caminiti A, Lai O, Alfieri L, Casati D, Sciarri M, Scaramozzino P, Brocherel G. Effect of a homeopathic complex on reproductive performance in a commercial pig farm. Homeopathy. 2015;104(1):9-14. doi: 10.1016/j.homp.2014.05.006. Background and aim: Alternative therapies based on homeopathy can be effective in improving reproductive performance in intensive pig breeding. In this study, the effect of a homeopathic complex on reproductive performance of sows under intensive farming has been investigated. Material and methods: Over period of three years, 186

sows were recruited from a farm where a large proportion of animals were suffering from prolonged weaning-to-oestrus intervals (WEI) and weaning-to-service intervals (WSI). Sows were allocated to two groups; once per month, one group was given a homeopathic complex (Borax 10 mK plus Lycopodium 10 mK), while the other group was given a hydro-alcoholic solution (placebo). The follow-up period started one week before the expected date of oestrus, continued for two pregnancies and ended after the weaning of the second farrowing. To evaluate reproductive performance, during the follow-up we collected data on quantitative parameters such as the average number of stillbirths, newborns, and repeat services per farrowing. Time-related data such as WEI, WSI, length of the two pregnancies and weaning periods were also collected to measure the length of the follow-up of each sow. Differences in quantitative parameters between the two groups were evaluated using parametric and non-parametric statistics. Time-related data were used to plot Kaplan-Meier curves and in Cox regression models to evaluate whether treated sows had a higher probability of experiencing a shorter follow-up in comparison to untreated sows. Results: We did not find significant differences in the number of newborns, while the number of stillbirths was higher in the treatment group, even if the difference was slightly significant (p-value = 0.03). The number of repeat services was lower in the treatment group, and this difference was highly significant (p-value < 0.001). Results from the Cox regression models suggest that the end of the follow-up was reached by sows of the treatment group at about twice the rate of sows of the control group (model 2, Hazard Ratio_{treatment} = 2.27; 95%CI: 1.56-3.24).

Source: <http://www.ncbi.nlm.nih.gov/pubmed/25576266>

Ranjan R, Dua K, Turkar S, Singh H, Singla LD. Successful management of refractory cases of canine demodicosis with homeopathic medicine Graphitis. J Parasit Dis. 2014;38(4):417-9. doi: 10.1007/s12639-013-0269-6. Abstract: Canine demodicosis is a refractory skin disease caused by excessive proliferation of mite *Demodex canis*.

Despite availability of several treatment options, the disease poses a great challenge to clinicians for its long term management as some drugs may be ineffective or toxic. Present report describes successful treatment of two refractory cases of canine demodicosis using homeopathy medicine. After oral administration of Graphitis 200 C two drops once daily for 2 months, complete cure from the disease was observed. No adverse health effects of the medication were recorded during the treatment. Thus, it may be concluded that homeopathy medicine may be used safely for long-term management of canine demodicosis.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4185029/pdf/12639_2013_Article_269.pdf

Andretto AP, Fuzinato MM, Bonafe EG, Braccini GL, Mori RH, Pereira RR, Oliveira CA, Visentainer JV, Vargas L. Effect of an homeopathic complex on fatty acids in muscle and performance of the Nile tilapia (*Oreochromis niloticus*).

Homeopathy 2014;103(3):178-85. doi: 10.1016/j.homp.2014.02.001.

Background: The homeopathic complex HomeoAqua Mega 3[®] was designed to stimulate fish liver function resulting in enhanced lipid metabolism and improved overall performance. The effect of the complex in fatty acid compounds in the muscle tissues and the performance of Nile tilapia (*O. niloticus*) were evaluated. **Methods:** A control diet with 40 mL of alcohol solution (30° Gay Lussac (GL) alcohol) per kg of feed and another diet with 40 mL/kg of the homeopathic complex were analysed in sex-reversed juvenile male Nile tilapia with mean initial weights of 89.54 g (± 7.97) and 89.74 g (± 8.83) and initial total mean lengths of 16.93 cm (± 0.56) and 16.85 cm (± 0.56) for the control and homeopathy-treated fish, respectively. Overall, 200 fish were distributed into 10 water tanks, with 20 specimens in each 600 L tank, they were kept for 63 days. Monitoring of the water's physical and chemical parameters was performed. Additionally, the percentage chemical composition and the composition of the muscle tissue fatty acids were determined, and fish performance was evaluated. **Results:** No significant differences ($p > 0.05$)

were found between treatments with regard to the water's physical and chemical parameters, moisture, ashes, proteins of the Nile tilapia muscular tissue and mean rates of total weight and length of the animals in the final period of the assay. The total lipid (TL) rates of the tilapia muscle tissue were $1.133 \pm 0.2\%$ at the start (control and homeopathy) and $0.908 \pm 0.14\%$ (control) and $0.688 \pm 0.14\%$ (homeopathy) at the end of the experiment ($p < 0.06$). The sum total of the SFAs (saturated fatty acids) was 338.50 ± 0.15 at the start (control and homeopathy) and 271.49 ± 0.34 mg/g of the TLs for the control and 226.12 ± 0.77 mg/g of TL for the homeopathy at the end of the experiment ($p < 0.05$). The n-6/n-3 ratio was also lower for the homeopathy-treated fish (8.45 ± 0.40) compared with the control fish (9.60 ± 0.14), ($p < 0.05$) at the end of the 63-day period. **Conclusion:** Nile tilapia juveniles that received the HomeoAqua Mega-3[®] in their diets had a decrease in the TL rates, mainly for the SFAs, and the n-6/n-3 ratio, compared with the control group, without any changes in the animal performance during the experimental period.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24931749>

Merlini LS, Vargas L, Piau R Jr, Ribeiro RP, Merlini NB. Effects of a homeopathic complex on the performance and cortisol levels in Nile tilapia (*Oreochromis niloticus*).

Homeopathy 2014;103(2):139-42. doi: 10.1016/j.homp.2013.08.005.

Background: Intensive fish farming results in stress adversely affecting the performance of farmed fish. Plasma cortisol is a validated measure of stress in fish. We evaluated the effect of a homeopathic complex on the cortisol level of Nile tilapias (*Oreochromis niloticus*). **Method:** 60 animals with approximate average weight of 100 g each at the start of experiment were randomly distributed in six glass fiber water tanks, capacity 1000 liters, with a daily water renewal rate of 20%. They received one of two treatments: 30 animals in control treatment and 30 animals receiving the homeopathic complex Homeopatila 100. On days 1, 30 and 60, all fish were anesthetized and blood was collected by puncture on the caudal vein, to determine the levels of circulating cortisol. **Results:** At the end of the experiment

the fish receiving a homeopathic complex, had significantly lower circulating cortisol level ($17.96 \text{ ng/mL} \pm 0.95$) than the control group ($38.68 \text{ ng/mL} \pm 1.21$) ($p < 0.05$). Conclusions: Cortisol levels were significantly lower in the treated group than control, and the fish were larger in the treated group.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/24685419>

Orjales I, López-Alonso M, Rodríguez-Bermúdez R, Rey-Crespo F, Villar A, Miranda M. Use of homeopathy in organic dairy farming in Spain. Homeopathy. 2016;105(1):102-8. doi: 10.1016/j.homp.2015.08.005.

Abstract: Organic farming principles promote the use of unconventional therapies as an alternative to chemical substances (which are limited by organic regulations), with homeopathy being the most extensive. Traditionally, Spain has had little faith in homeopathy but its use in organic farming is growing. Fifty-six Spanish organic dairy farmers were interviewed to obtain what we believe to be the first data on the use of homeopathy in organic dairy cattle in Spain. Only 32% of farms use some sort of alternative therapy (16.1% homeopathy, 10.7% phytotherapy and 5.3% using both therapies) and interestingly, a clear geographical pattern showing a higher use towards the East (similar to that in the human population) was observed. The main motivation to use homeopathy was the need to reduce chemical substances promoted by organic regulations, and the treatment of clinical mastitis being the principle reason. The number of total treatments was lower in farms using homeopathy compared with those applying allopathic therapies (0.13 and 0.54 treatments/cow/year respectively) and although the bulk SCC was significantly higher ($p < 0.001$) in these farms (161,826 and 111,218 cel/ml, respectively) it did not have any negative economical penalty for the farmer and milk quality was not affected complying with the required standards; on the contrary homeopathic therapies seems to be an alternative for reducing antibiotic treatments, allowing farmers to meet the organic farming principles.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26828005>

Canello S, Gasparini G, Luisetto P, Di Cerbo A, Pomerri F. Bone computed tomography mineral content evaluation in chickens: effects of substances in homeopathic concentration. Homeopathy. 2016;105(1):92-5. doi: 10.1016/j.homp.2015.07.003.

Methods: Ninety-six cobb race chickens were equally divided in 4 groups and randomly assigned to receive a standard treatment feed + homeopathic concentrations of *Symphytum* (S.) *officinalis* (9CH), or standard treatment feed + homeopathic concentrations of *Tricalcarea* (4CH), or standard treatment feed + homeopathic concentrations of *Calcarea* (C.) *carbonica* (30CH) or a placebo (the same feed but without any homeopathic compound) in order to assess the ability of the homeopathic compounds to increase the concentration of calcium hydroxyapatite in the sternal spongy bone tissue. We measured the concentration of calcium hydroxyapatite in the sternal spongy bone tissue of all chickens by means of a computed tomography (CT). Results: 30%, 36% and 63% increase of sternum spongy-bone mineralization was observed after a 2 years period in the treatment groups with S. *officinalis* (9CH), *Tricalcarea* (4CH) (* $P < 0.05$) and C. *carbonica* (30CH) (*** $P < 0.001$) respectively. Conclusion: Bone mineralization is usually low in battery chickens reared in commercial poultry-sheds, creating a weakness of the whole animal supporting apparatus. Homeopathic preparations with bone-tissue tropism may improve their health quality.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(15\)00058-2/pdf](http://www.homeopathyjournal.net/article/S1475-4916(15)00058-2/pdf)

Novo SMF, Pappotti K, Cioffi BMS, Pantoja JCDF, Porto EP, Peixoto ECTDM. Isotherapeutic for the control of the cattle tick. Int J High Dilution Res 2014; 13(48): 165-171. Abstract:

Parasitism constitutes one of the major problems that affect the livestock. Commercial acaricides can propitiate drug resistance and residues in the environment and animals. This study aimed to evaluate the control of cattle ticks by using the isotherapeutics. These drugs were prepared

using *Rhipicephalus (Boophilus) microplus*. The dilution and agitations were performed according to the homeopathic pharmacopoeia. By the immersion technique of adults, 50 teleogines were distributed into five treatments: 12cH and 32cH isotherapeutic, negative control, positive (ivermectin 1%) and vehicle control. The results were evaluated by the rate of mortality, egg production, hatchability rate, estimated reproduction, and the efficacy of the products. In addition, 16 Jersey females cows were subjected to 15mL pour on, of the following treatments: 12cH and 32cH isotherapeutic and vehicle control. The count of ticks was performed by the simple method on days 0, 15, 21, 42, 63, 84 and 105, post treatments. It was used the Wilcoxon test and Bonferroni method. Both isotherapeutics treatments showed efficacy at in vitro tests. The 12cH medication presented better results: 10% of mortality rate on the first day of life, maintaining 20% from the second to the 13th day. Additionally, it was observed 20% of egg production, hatching rate of 0.0038% and 99.39% of product effectiveness. However, the in vivo tests showed no satisfactory results for these evaluated conditions, although it was verified a tendency to decreasing the infestation.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/713/728>

Tungnunga IB, Sarma K, Roychoudhury P, Borthakur SK, Das G, Prasad H, Behera SK. Therapeutic evaluation of homoeopathic drug *Crotalus horridus* 200C against Ehrlichiosis-infected dogs in Mizoram. Indian J Res Homoeopathy 2016;10:42-51. doi: 10.4103/0974-7168.179150. Objective: To study, the effect of a homoeopathic medicine *Crotalus horridus* 200C on ehrlichiosis in dogs in an endemic area of Aizawl district of Mizoram state of India. Materials and Methods: To evaluate the efficacy of *Crotalus horridus* 200C against ehrlichiosis dogs. 12 positive cases confirmed by polymerase chain reaction (PCR) were divided into two groups comprising six dogs in each group. One group was treated with standard therapy (doxycycline) and other group was treated with *Crotalus horridus* 200C at 4 pills

orally for 20 days. Clinical improvement of affected dogs was recorded after therapy. Important haemato-biochemical parameters before and after therapy such as haemoglobin (Hb), packed cell volume (PCV), total erythrocyte count (TEC), total leukocyte count (TLC), differential leukocyte count (DLC), platelet count, total protein, albumin, globulin, A:G ratio, total bilirubin, serum creatinine, blood urea nitrogen (BUN), and liver-specific enzymes namely alanine aminotransferase (ALT) and alkaline phosphatase (ALP) were assessed following standard protocol. All the parameters were compared with a control healthy group (T3). All experiment dogs were from different age with different breeds and bloods were collected at forenoon only. Results: PCR test yielded 13 dogs positive out of 67 suspected samples screened (19.40%) with an amplification of 387 bp fragment from 16S rRNA gene of *E. Canis*. Off total positive, only 8 (61.53%) could be detected in peripheral blood smear. *Crotalus horridus*-treated group of dogs showed clinical recovery from fever and temperature to normalcy by the 14th day posttreatment. Haemato-biochemical profiles of affected dogs such as Hb, PCV, TEC, TLC, DLC, platelet count, total protein, albumin, globulin, A:G ratio, total bilirubin, serum creatinine, BUN, and liver-specific enzymes namely ALT and ALP were turned to normalcy within 21 days of post-treatment. Conclusion: Nested PCR assay had been shown to be sensitive and specific for detection of *Ehrlichia canis*. *Crotalus horridus* 200C may be an effective and choice of drug for control of canine ehrlichiosis.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=42;epage=51;aulast=Tungnunga>

Khuwaja G, Ishrat T, Khan M B, Raza SS, Ahmad Khan M M, Ahmad A, Vaibhav K, Khurana A, Islam F. Protective role of homoeopathic medicines on cerebral ischaemia in animals. Indian J Res Homoeopathy 2014;8:209-17. doi: 10.4103/0974-7168.147320. Objective: Cerebral ischaemia is the third leading cause of death after cancer and myocardial infarction. The protective effect of some homoeopathic drugs has been studied in the Middle

Cerebral Artery Occlusion (MCAO) model of rat. Materials and Methods: The rats were pretreated with 200C potency once daily for 5 days orally (1 drop or 21 µl) and post treated after 24 hr of MCAO with 30C potency three times a day for 5 days orally (1 drop or 21 µl) with homoeopathic medicines Crotalus, Phosphorus, Arnica and Crocus. Results: The content of antioxidants, Thiobarbituric Acid Reactive Substances (TBARS) was elevated significantly whereas the level of Glutathione (GSH) was depleted significantly in the MCAO of rats as compared to the sham group. The activities of antioxidant enzymes, Glutathione Peroxidase (GPx), Glutathione Reductase (GR) and Glutathione-S-Transferase were decreased significantly in MCAO group as compared

to sham group. The medicines used on rats (pre and post treated in potencies of 200C and 30C respectively) have protected the activities of these enzymes significantly when compared with the animals of MCAO group. Conclusion: The study has shown that the homoeopathic drugs have protected most of the studied parameters significantly but further studies are required to comment on the mechanism and reproducibility of homoeopathic drugs.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=4;spage=209;epage=217;aulast=Khuwaja>

Chapter: XII

Agrohomeopathy

In developed countries modern, intensive agriculture has improved crop yields but also, due to its reliance on large amounts of non-renewable energy and raw materials, frequently resulted in soil degradation, environmental pollution and damage to wildlife. For this reason, there has been growing interest in agricultural methods that are both environmentally and economically sound, in recent years. Among these, the emerging discipline of 'agrohomeopathy' – the application of homeopathy to agriculture – is currently being widely developed.⁴²⁰ The potential benefits of using homeopathy for plants are their cost-effectiveness and the absence of side-effects on plants and the ecological system. Therefore, Homeopathy is optimally suited to the holistic approaches of organic and, above all, biodynamic agriculture, in which plants and their interactions with the environment are treated as a unified 'living organism'.⁴²¹

Homeopathy is known to enhance the nutritional properties of plants,⁴²² and contribute productively to physiological and qualitative characteristics of plants. In addition, homeopathic medicines increase the resistance of plants to biotic (insects and pathogens) and abiotic (physical and chemical damage) stress.⁴²³ However, the research scenario of agrohomeopathy is still in its infancy and additional research needs to be done to clearly define the role of homeopathy in farming at commercial level. About half of the papers reviewed by Bettiet al¹ do not provide sufficient information or suffer from shortcomings in terms of statistical analysis, replications, experimental

methodology and blinding. The results presented are mostly, therefore, not fully reliable.

However, the work carried out so far in the field of agrohomeopathy provides enough ground for more comprehensive and better controlled trials in future.

Research updates

Tichavsky R. Perspectives of Agro-homeopathy and overview of results. Proceedings 64th LMHI Congress.

Hribar-Marko S, Graunke H, Scherer-Pongratz W, Lothaller H, Endler PC. Prestimulation of wheat seedlings with gibberellic acid followed by application of an agitated high dilution of the same hormone. *Int J High Dilution Res.* 2013; 12(42):26-39.

The hypothesis that pre-treatment of grains with high concentrations of gibberellic acid would enhance the growth inhibiting effect of G30x had to be rejected.

Dragicevic V, Spasic M, Simic M, Dumanovic Z, Nikolic B. Stimulative influence of germination and growth of maize seedlings originating from aged seeds by 2,4-D potencies. *Homeopathy* 2013;102:179-86.

Homeopathic potencies of 2,4-D (2,4-dichlorophenoxyacetic acid) appear to have a beneficial effect on artificially aged maize seeds: they stimulate growth through better substance conversion from seed rest, and shift the redox capacity towards a reduced environment.

Jargin SV. Hormesis and homeopathy: The artificial twins. *J Intercult Ethnopharmacol.* 2015;4(1):74-7. doi: 10.5455/jice.20140929114417. Abstract:

magnesium carbonicum, natriummuriaticum e siliceaterra no teor de taninoem Porophyllumruderale (Jacq.) Cassini. *Cultura Homeopatica* 2006; 14: 6–8.

⁴²³ Betti L., Use of homeopathic preparations in phytopathological models and in field trials: a critical review; *Homeopathy* (2009) 98, 244–266

⁴²⁰ Betti L., Use of homeopathic preparations in phytopathological models and in field trials: a critical review; *Homeopathy* (2009) 98, 244–266

⁴²¹ Reganold JP. Soil quality and profitability of biodynamic and conventional farming system: a review. *Am J Alternative Agr* 1995; 10: 36–45.

⁴²² Marques Fonseca MC, Dias Casali VW, Cecon PR. Efeito de aplic, a ~ou ~nica dos preparadoshomeopa ~ticos calcareacarbonica, kaliunphosphoricum,

Homeopathy claims a curative reaction from small doses of a substance, high doses of which cause symptoms similar to those the patient is suffering from. Hormesis is a concept of biphasic dose-response to different pharmacological and toxicological agents. According to this concept, a small dose of a noxious agent can exert a beneficial action. A hypothesis is defended here that hormesis as a general principle can be assumed only for the factors present in the natural environment thus having induced adaptation of living organisms. Generalizations of the hormesis phenomenon used in support of homeopathy are unfounded. Low-dose impacts may be associated with a higher risk in a state of organ sub-compensation or failure especially in the elderly patients. Practical recommendations should be based neither on the hormesis as a default approach nor on the postulates of homeopathy. All clinically relevant effects, hormetic or not, should be tested by the methods of evidence-based medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4566758/>

Marotti I, Betti L, Bregola V, Bosi S, Trebbi G, Borghini G, Nani D, Dinelli G. Transcriptome Profiling of Wheat Seedlings following Treatment with Ultrahigh Diluted Arsenic Trioxide. *Evid Based Complement Alternat Med*. 2014;2014:851263. doi: 10.1155/2014/851263. Abstract: Plant systems are useful research tools to address basic questions in homeopathy as they make it possible to overcome some of the drawbacks encountered in clinical trials (placebo effect, ethical issues, duration of the experiment, and high costs). The objective of the present study was to test the hypothesis whether 7-day-old wheat seedlings, grown from seeds either poisoned with a sublethal dose of As₂O₃ or unpoisoned, showed different significant gene expression profiles after the application of ultrahigh diluted As₂O₃ (beyond Avogadro's limit) compared to water (control). The results provided evidence for a strong gene modulating effect of ultrahigh diluted As₂O₃ in seedlings grown from poisoned seeds: a massive reduction of gene expression levels to values comparable to those of the control group was observed for several functional classes of genes. A

plausible hypothesis is that ultrahigh diluted As₂O₃ treatment induced a reequilibration of those genes that were upregulated during the oxidative stress by bringing the expression levels closer to the basal levels normally occurring in the control plants.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25525452>

Endler PC, Scherer-Pongratz W, Lothaller H, Stephen S. Wheat and ultra high diluted gibberellic acid--further experiments and re-analysis of data. *Homeopathy*. 2015;104(4):257-62. doi: 10.1016/j.homp.2015.09.007. Background: Following studies (a) on wheat seedlings and ultra high diluted silver nitrate, and (b) on amphibians and an ultra high diluted hormone, (c) a bio-assay on wheat and extremely diluted gibberellic acid was standardized. This assay was intended to combine the easy-to-handle aspect of (a) and biologically interesting aspects of (b). The purpose of the data analysis presented here was to investigate the influence of an extreme dilution of gibberellic acid on wheat stalk length and to determine the influence of external factors on the experimental outcome. Methods: Grains of winter wheat (*Triticum aestivum*, Capo variety) were observed under the influence of extremely diluted gibberellic acid (10(-30)) prepared by stepwise dilution and agitation according to a protocol derived from homeopathy ('G30x'). Analogously prepared water was used for control ('W30x'). 16 experiments including 8000+8000 grains were performed by 9 researchers. Results: Experiments that were performed between January and April showed inconsistent results, whereas most of the experiments performed between September and December showed shorter stalks in the G30x group. This was confirmed by correlation analysis ($p < 0.01$). Thus winter/spring experiments and autumn experiments were analysed separately. When all 10 autumn experiments were pooled, mean stalk lengths (mm) were 48.3 ± 21.4 for the verum group and 52.1 ± 20.4 for control (mean \pm SD) at grain level ($N = 5000$ per group) and ± 5.3 and ± 5.1 respectively at dish level. In other words, verum stalk length (92.67%) was 7.33% smaller than control stalk length (100%). The effect size is small when calculation is done on the basis of grains ($d = 0.18$) but,

due to the smaller SD at dish level, medium when done on the basis of dishes ($d=0.73$). The inhibiting effect was observed by 6 of the 6 researchers who performed the autumn experiments. Conclusion: The model may be useful for further research as there exists a theoretical justification due to previous studies with wheat and extremely diluted silver nitrate, as well as to previous studies with amphibians and diluted hormones, and its methods are well standardized. Data confirm the hypothesis that information can be stored in the test liquid, even at a dilution of the original substance beyond Avogadro's value; and that the wheat bio-assay is sensitive to such information.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678726>

Scherer-Pongratz W, Endler PC, Lothaller H, Stephen S. Wheat and ultra high diluted silver nitrate—further experiments and re-analysis of data. *Homeopathy*. 2015;104(4):246-9. doi: 10.1016/j.homp.2015.09.009. Background: Since 1926, an influence of a dilution of silver nitrate (24x) on the growth of coleoptiles of wheat seedlings was described. The aim of the study discussed here is the critical proof of the reliability of a test system which has been quoted as a basic model for the research on homeopathy for decades. Methods: Grains of winter wheat (*Triticum aestivum*) were observed under the influence of extremely diluted silver nitrate (10(-23)) prepared by stepwise dilution and agitation according to a protocol derived from homeopathy ('24x'). Analogously prepared water and/or inert water was used for control. Thirty experiments including 5000+5000 grains were performed by 5 researchers. Results: Stalk lengths clearly indicate that development is enhanced by the probe silver nitrate 24x as compared to control. When the experiments 1989-1995 were pooled, means and SD for silver nitrate 24x-groups were 42.3 ± 26.9 mm and for water control groups 34.7 ± 22.2 mm. Verum stalk length was 21.9% bigger than control (100%) ($p < 0.01$; $d = 0.31$, i.e. small). For the experiments 1998-2014, means and SD were 73.7 ± 21.7 mm and 60.5 ± 20.9 mm. Verum stalk length was 21.7% bigger than control (100%) ($p < 0.01$;

$d = 0.62$, i.e. medium). From the results one may hypothesize that the result is more marked in experiments showing an average mean of stalk length between ca. 50 and 90 mm in contrast to smaller or bigger mean lengths. Conclusion: The previous findings were confirmed by the results.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678724>

basicGupta VK, Ray JR, Singh VK, Pathak SD, Nayak C, Darokar MP. Dose-dependent effect of homoeopathic drug Zinc sulphate on plant growth using *Bacopa monnieri* as model system. *Indian J Res Homoeopathy* 2014;8:19-23. DOI: 10.4103/0974-7168.129673. Background: Zinc is one of the essential micronutrients in plants required in very low quantity for plant growth and development. In higher concentration, it is known to reduce the rate of photosynthesis. So homoeopathic preparations tested to see its role on plant growth. Objective: To analyse the effect of homoeopathic preparation of Zinc sulphate on plants through in-vitro assay using *Bacopa monnieri* as a model plant system. Materials and Methods: Six homoeopathic potencies (1X to 6X) of Zinc sulphate were used on a decimal scale along with the control (MS basal agar medium). The samples were evaluated by adding fixed amount (100 μ l) in the media as well as by dipping the explants in the test sample overnight. At the completion of the incubation period (14 days) the fresh and dry weight, number and length of the roots, number and length of the shoots and the number of leaves were analysed. Results: It was observed that Zinc sulphate showed growth inhibition at potencies from 1X to 5X, whereas at potency 6X, it exhibited growth promotion effect, when compared with the control. Conclusion: Homoeopathic drug (Zinc sulphate) exhibited growth promotion at higher potency (6X) and growth inhibition at lower potencies (1X to 5X) on *Bacopa monnieri*.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;>

issue=1;spage=19;epage=23;aulast=Gupta

CHAPTER XIII

HOMEOPATHY AND EPIDEMIC DISEASES

History

Although its efficacy has been demonstrated in the treatment of several individuals suffering from acute or chronic diseases, a historical review shows homeopathy's greatest asset appears to be in the treatment of epidemic diseases. There are impressive examples of such broader applications of homeopathy in the 19th and 20th centuries. The founder of homeopathy, Dr. S. Hahnemann, initiated the methodology for the treatment epidemic diseases with homeopathy. This approach he called the genus epidemicus, meaning that a treatment protocol of an epidemic disease is designed based on the collected signs and symptoms of a large group of patients. This is opposed to the treatment of non-epidemic diseases in which for each different patient an individual remedy is selected based on the unique expression of the disease in the individual. In giving an historical overview on the use of homeopathy in epidemic diseases, Bedayn⁴²⁴ writes:

"The curative results of the genus epidemicus were so positive during the epidemics in the ensuing decades that they not only cured the majority of those affected where nothing else had worked, but they also drew international acclaim towards homeopathy, the new, the rational, medicine. There is something intrinsically powerful about the success of homeopathy in curing large populations that is undeniably attractive to anyone gifted with the power of observation, and it was through these early cures with epidemics that Hahnemann was able to quickly and widely spread the word: Homeopathy."

Using the genus epidemicus principle, homeopaths impressed the medical establishment with their results. Here are a few quotes to illustrate this:

General: "In epidemics the mortality per 100 patients is 1/2 to 1/8 in homeopathic hospitals (a century ago there were several homeopathic hospitals in the US) compared to allopathic hospitals." (Bradford, 1900)⁴²⁵

General: "Homeopathy had become very popular in North America during its early years due to its amazing successes obtained by the 'old guard' during the epidemics – epidemics of diphtheria, scarlet fever, cholera, malaria, yellow fever." (From its Roots Upwards, Interview with André Saine, N.D., D.H.A.N.P., Vienna January 1994)⁴²⁶

- General: "Ever since Samuel Hahnemann homeopathy has time and again been able to successfully treat epidemics/pandemics with a small number of remedies." (Stahl, Hadulla, Richter, 2006)⁴²⁷
- Cholera: "In Russia in the years 1830 and 1831 homeopathy was used to treat 1270 cholera patients in the provinces Saratoff, Tambtoff and Twer: 1162 of those were cured, 108 died... similar rates in the results of homeopathic treatment for cholera were observed in Hungary, Mähren and Vienna." (Gebhardt, 1929)⁴²⁸
- Cholera: "When in the year 1854 cholera came to Palermo 1513 soldiers fell ill ... Of these 902 were treated with allopathy of which 386 died, a bit more than 42 %; 611 were treated with homeopathy, of which only 25, so almost 4 %, died."

⁴²⁴Bedayn, Greg, 'As If One Patient', *The American Homeopath* 1998

⁴²⁵Dr. Thomas L. Bradford's 'The Logic of Figures ...' (1900)

⁴²⁶Saine, André, 'From its Roots Upwards', Interview with André Saine, N.D., D.H.A.N.P., Vienna January 1994

⁴²⁷Stahl E., Hadulla M.M., Richter E., *Homöopathische Behandlung der Influenza – Vogelgrippe, Allgemeine Homöopathische Zeitung*, 2006

⁴²⁸Gebhardt, A. v., *Handbuch der Homöopathie*, Leipzig, Germany 1929

In the abovementioned years cholera also visited the Caribbean, and on the 'pearl' of these islands, Barbados, 2113 people fell ill. Of the 346 treated with allopathy 154 died, but of the 1767 treated with homeopathy only 370." (Gebhardt, 1929)⁴²⁹

- Cholera: "3 % of the cholera patients under homeopathic treatment died (Cincinnati USA 1849). Mortality rate of cholera patients under allopathic treatment was 40-70 %." (Humphreys 1849)⁴³⁰
- Spanish influenza: "Perhaps the most recent use of homeopathy in a major epidemic was during the Influenza Pandemic of 1918. The Journal of the American Institute for Homeopathy, May, 1921, had a long article about the use of homeopathy in the flu epidemic. Dr. T A McCann, from Dayton, Ohio reported that 24,000 cases of flu treated allopathically had a mortality rate of 28.2 % while 26,000 cases of flu treated homeopathically had a mortality rate of 1.05 %. This last figure was supported by Dean W.A. Pearson of Philadelphia (Hahnemann College) who collected 26,795 cases of flu treated with homeopathy with the above result." (Winston 2006)⁴³¹
- Spanish influenza: "Homeopathy has been used with great degree of success in influenza and other epidemics for 200 years ... In 1918 flu pandemic homeopaths reported around 1 % mortality in their cases, while conventional doctors were losing 30 % of their patients." [www.lifemedical.us/flu]NB: The Spanish influenza virus we know now was an avian virus. Approximately 40 million people died in just 18 months.
- Spanish influenza: "Dean W.A. Pearson of Philadelphia collected 26,795 cases of influenza treated by homeopathic physicians with a mortality of 1.05 %, while the average old school mortality was 30 %. Explanation: conventional treatment of folks with flu caused at

least 8038 deaths while the homeopaths lost only 281 patients. That is a statistically significant difference." "Thirty physicians in Connecticut responded to my request for data. They reported 6,602 cases with 55 deaths, which is less than 1 %. In the transport service (during WWI) I had 81 cases on the way over. All recovered and were landed. Every man received homeopathic treatment. One ship (using conventional therapy) lost 31 on the way. H.A. Roberts, MD, Derby, Connecticut." [Explanation: a number of homeopathic physicians served in the Armed Forces during WW1 and made use of their homeopathic training. (Dearborn, 1923)⁴³²; (Dewey, 1921)⁴³³

- Spanish influenza: "The most severe epidemic of all time was the Great Influenza Pandemic of 1918. Twenty percent of the entire world population was infected and 20-40 million people died. The epidemic was so devastating that the average lifespan in the United States was decreased by ten years. During this epidemic homeopathic medicines were used widely both for treatment and as prophylaxis. The average mortality under standard treatment ran from 2.5-10 %, while 1 % or fewer patients died under homeopathic treatment." (Hoover, 2006)⁴³⁴
- Yellow Fever in USA: "Homeopathy had become very popular in North America during its early years due to its amazing successes obtained by the 'old guard' during the epidemics – epidemics of diphtheria, scarlet fever, cholera, malaria, yellow fever – especially yellow fever; the death rate for that was 55 % when allopathic treatment was used, but less than 5 % in cases with homeopathic treatment; and it was the same for cholera. It is here with the 'old guard' that homeopathy obtained its golden letters." ('From its Roots Upwards', Interview with André Saine, ND, DHANP, Vienna, January 1994.)⁴³⁵

⁴²⁹Gebhardt, A. v., *Handbuch der Homöopathie*, Leipzig, Germany 1929

⁴³⁰Humphreys, F., *Cholera and its homoeopathic treatment*, New York: William Radde Publisher, 1849

⁴³¹Winston, J., *Some history of the treatment of epidemics with Homeopathy by Julian Winston*, 2006, www.whale.to/v/winston.html

⁴³²Dearborn, Frederick M. MD, *American Homeopathy in the World War*; 1923

⁴³³Dewey, W.A., *Homeopathy in Influenza- A Chorus of Fifty in Harmony*, *Journal of the American Institute of Homeopathy* in 1921

⁴³⁴Hoover, Todd A., *Homeopathic prophylaxis*, *The American Homeopath*, October 2006

⁴³⁵Saine, André, *From its Roots Upwards*, Interview with André Saine, N.D., D.H.A.N.P.,

These are clearly impressive figures, certainly if we compare them with the results of contemporary regular treatment. Considering the advances made in conventional medicine in the past century the question arises though whether homeopathy should still play a role in treating epidemic diseases.

Homeopathy and Epidemic Diseases Today

Towards the end of the 1880's, Homeopathy and conventional medicine were equally well accepted by the public. Conventional medical doctors in the US lobbied the government in the early 1900s and legislation was passed giving them the exclusive right to diagnose and treat medical conditions. With the US taking the lead in the world, homeopathy went into a decline. Homeopathic hospitals were closed. The light of homeopathy was kept alive by smaller number of homeopaths, but many lost track of what is called Hahnemannian homeopathy and as a science little progress was made.

This changed in the last decades of the 20th century. Homeopathy flourished again and, especially in the treatment of chronic diseases, great advances were made.

If we look at homeopathy today, the use of the genus epidemicus approach for epidemic diseases is marginal. In part, this is because epidemic diseases like those mentioned above hardly play a role anymore in the West. Homeopaths that went to developing countries to help those for whom often no medical care is available at all were strongly confronted with epidemic diseases. They once again started to treat epidemic diseases and experienced how successful homeopathy still is for these conditions.

Why Homeopathy Should Play a Role in Treating Epidemics?

Homeopathy does not stand in the way of effective treatment for patients but rather complements available conventional treatment.

- It is not the policy of the major homeopathic organizations in the world to advise patients against the use of conventional medicine and this includes the treatment of epidemic diseases. Patients that are not on conventional therapy because their case has not reached a critical level yet are observed to get improved health and increased immunity, thus postponing the need for conventional therapy. Homeopathic treatment boosts the immune system and side effects from conventional treatments are reduced significantly if patients also take homeopathic treatment. This represents a clear win-win situation.
- Conventional medical care is non-existent or limitedly available in many areas or only available to the very rich. Homeopathy can at least help this situation. Also when conventional therapy does not work anymore homeopaths have regularly observed that these patients do respond to homeopathic treatment.
- Therapy resistance is an increasing problem making conventional medicine inactive and alternative approaches dearly needed. For the major epidemics in Africa – malaria, TB and HIV – this is a serious problem. The problems surrounding resistance are finding increasing acknowledgment within the healthcare community. "The threat of large-scale drug resistance is 'real and scary.' " (Marani 2007)⁴³⁶
"Resistance develops naturally, in response to the selective pressure from drugs or from the body's own immune system." (World Bank 2003)⁴³⁷

Vienna January 1994

⁴³⁶Marani, Dr Lyndon, (Ministry of Health): Nairobi, 8 October 2007 (PlusNews)

⁴³⁷World Bank, Global HIV/AIDS Program of the World Bank 17-18 June 2003.

- Vaccination programs are not available for many diseases that keep undermining the health and development of developing countries. Homeopathy can help these populations as seen before.

We suggest that homeopathy could play an important role in the treatment of these diseases and that funds would be available to study this further. The above data from history support this idea, and current observations confirm that also for the epidemics today homeopathy is still effective.

There are several reasons why the homeopathic option for epidemic diseases deserves serious consideration:

- Homeopathic remedies create no side-effects
- Homeopathy is safe for pregnant women, babies and elderly people
- Homeopathic remedies are inexpensive
- Production, storage and distribution of homeopathic remedies is simple
- Homeopathy does not induce therapy resistance
- Homeopathic treatment does not create more dangerous viruses and bacteria
- Homeopathy has been effective in many epidemics in the past and indications are very strong that it is effective in today's epidemics as well

To prepare future surveys Kirkby R and Herscu P published the paper "Homeopathic trial design in influenza treatment" in the journal *Homeopathy* 2010;99:69-75 reviewing the published studies on this topic.

Some examples of contemporary publications on homeopathy in epidemic diseases:

Cholera: A pilot study of homoeopathic treatment of cholera during an epidemic in Peru appeared to show that it was effective. A subsequent double blind study showed no difference between active homoeopathic treatment and placebo treatment. Various technical problems were encountered⁴³⁸. Further research is

certainly needed.

We would remember here that results of such research depend largely of the sample size. Looking at childhood diarrhea, Dr J. Jacob. demonstrated this very well and concluded: "Previous studies have shown a positive treatment effect of individualized homeopathic treatment for acute childhood diarrhoea, but sample sizes were small and results were just at or near the level of statistical significance. Because all three studies followed the same basic study design, the combined data from these three studies were analyzed to obtain greater statistical power. Methods: Three double blind clinical trials of diarrhoea in 242 children ages 6 months to 5 years were analyzed as 1 group. Children were randomized to receive either an individualized homeopathic medicine or placebo to be taken as a single dose after each unformed stool for 5 days. Parents recorded daily stools on diary cards, and healthworkers made home visits daily to monitor children. The duration of diarrhoea was defined as the time until there were less than 3 unformed stools per day for 2 consecutive days. A meta-analysis of the effect-size difference of the three studies was also conducted.

Results: Combined analysis shows a duration of diarrhoea of 3.3 days in the homeopathy group compared with 4.1 in the placebo group ($P = 0.008$). The meta-analysis shows a consistent effect-size difference of approximately 0.66 day ($P = 0.008$).

Conclusions

The results from these studies confirm that individualized homeopathic treatment decreases the duration of acute childhood diarrhoea and suggest that larger sample sizes be used in future homeopathic research to ensure adequate statistical power. Homeopathy should be considered for use as an adjunct to oral rehydration for this illness."⁴³⁹

⁴³⁸Gaucher C, Jeulin D, Peycru P, Pla A, Amengual C. Cholera and homeopathic medicine : The Peruvian experience. *Br. Hom. J.* 1993;82:155-163.

⁴³⁹Jacobs J. Treatment of acute childhood diarrhoea with homeopathic medicine: a

Leptospirosis: Homeopathy is associated with dramatic reduction in Leptospirosis infection in the Cuban population. This publication (July 2010) (240) provides fascinating evidence that a highly dilute substance, prepared according to homeopathic principles, may contribute to the prevention of Leptospirosis, also known as Weil's Disease. In Cuba, Leptospirosis is recorded by an efficient national surveillance program. Its incidence correlates closely with heavy rainfall and subsequent flooding. In late 2007, in response to a developing epidemic, and with only enough vaccine to treat 15,000 high-risk people, the government decided to treat the entire population of the region, over one year of age, with a homeopathic medicine. This was prepared from the inactivated causative organism provided by the Cuban National Vaccine Institute.

In a recent study, the effect of the homeoprophylaxis interventions in 2007 and 2008 was found to be positive. The study involved huge population and the database was rigorously cleansed, the possible impact of vaccination and chemoprophylaxis campaigns was examined, and the possible impact of other confounders was also considered. No possible confounding factor appeared to have exerted any appreciable influence on the positive impact of the homeoprophylaxis interventions in 2007 and 2008, although the vaccination campaign in late 2008 in the intervened region targeting approximately 4% of the population may have prevented some cases. The Cuban experience with homeoprophylaxis against leptospirosis has been and remains a very positive one. It has given rise to further government-directed immunization against hepatitis A, swine flu, pneumococcal disease, and dengue fever using homoeoprophylaxis. The Cuban health system in general demonstrates how orthodox and complementary medicine can be usefully integrated, and their willingness to use both vaccination and

homoeoprophylaxis as evidence-based immunization options is an excellent example of this.⁴⁴⁰

"Infectious diseases are still the bane of humanity, particularly in the developing world", states Dr Sara Eames, President of the Faculty of Homeopathy. "Anything which appears to reduce infection rates in a potentially fatal infection, particularly when it can be prepared and delivered quickly, safely and cost effectively, has to be taken seriously and studied further."

Dr Peter Fisher, Editor of Homeopathy, notes "This is a very large study and its results, if confirmed, have huge potential impact. We need more research into the effectiveness of homeopathic preparations in preventing infectious diseases, complications, and the economic viability of a homeopathic approach."

Influenza: Everybody is aware of the audit of the Cochrane organization about efficacy of a homeopathic medicine *Oscillococcinum* in the treatment of influenza (241). They updated the electronic searches on the Cochrane Central Register of Controlled Trials CENTRAL (The Cochrane Library Issue 1, 2006); MEDLINE (January 1966 to February 2006) and EMBASE (1980 to February 2006). The manufacturers of *Oscillococcinum* were contacted for information. Seven studies were included in the review, three prevention trials (number of participants (n) = 2265) and four treatment trials (n = 1194). Only two studies reported sufficient information to complete data extraction fully. There was no evidence that homoeopathic treatment can prevent influenza-like syndrome (relative risk (RR) 0.64, 95 % confidence interval (CI) 0.28 to 1.43). *Oscillococcinum* treatment reduced the length of influenza illness by 0.28 days (95

randomized clinical trial in Nicaragua. *Pediatrics* 1994; 93: 719-725. Jacobs J., Jimenez M., Malthouse S., Chapman E., Crothers D., Masuk M., Jonas W.B., Acute Childhood Diarrhoea – A Replication., *Journal of Alternative and Complementary Medicine*, 6, 2000, 131-139.

Homoeoprophylaxis Against Leptospirosis in Cuba in 2007 and 2008; *Journal of Evidence-Based Complementary & Alternative Medicine* 2014 19: 155 originally published online 11 March 2014; URL: <http://chp.sagepub.com/content/19/3/155>

⁴⁴⁰Golden I. and Gustavo Bracho G.; A Reevaluation of the Effectiveness of

% CI 0.50 to 0.06). Oscillocochinum also increased the chances that a patient considered treatment to be effective (RR 1.08; 95 % CI 1.17 to 1.00). Influenza (the flu) is a highly infectious respiratory disease caused by viruses. Other than treatments for complications (such as pneumonia) conventional medical treatment is bed rest. Homeopathy is a system based on 'curing like with like', often using highly diluted sub-stances. Oscillocochinum is a homeopathic preparation manufactured from wild duck heart and liver (common sources of influenza). It is claimed that Oscillocochinum (or similar homeopathic medicines) can be taken either regularly over the winter months to prevent influenza or as a treatment. Trials do not show that homeopathic Oscillocochinum can prevent influenza. However, taking homeopathic Oscillocochinum once one has influenza might shorten the illness, but more research is needed. During winter 2009/2010 a flu pandemic situation was recorded and followed day by day by the W.H.O. and all national authorities. As international organization, the LMH I asked to report about the use of homeopathy during this pandemic period.

For France: 17 physicians participated, 259 cases were collected and the most prescribed (123 times) remedy was Bryonia (symptoms, including high fever and asthenia, are aggravated by motion), followed by Nux vomica, Pulsatilla, Gelsemium, Arsenicum album, Baptisia, China, Hepar sulphuris calc., Phosphorus, Eupatorium perfoliatum, Belladonna, Sepia, Influenzinum, etc. When the personal global (simillimum) remedy was known for the patient it was almost efficient (5 times used). Most cases were solved in 2 or 3 days. Post-flu asthenia has been described and a second remedy was then needed. Vincent S et al. published a survey on the management of Influenza-like illness by homeopathic and allopathic general practitioners (GP) in France during the 2009-2010 influenza season. 65 homeopathic GP and 124 allopathic GP participated, 461 patients were incorporated and patient's satisfaction is greater when homeopathy has been used alone. Journal of

Alternative and Complementary Medicine (New York, N.Y.) 2012 PMID: 22803696

For Belgium: 92 patients were included in this report from only 3 physicians, 38 patients were between 15 and 40 years old. Gelsemium (headache, fever, asthenia, pain in muscles and bones) and Anisum stellatum (added to the same symptoms, deep and difficult cough, the disease seems to be more aggressive in Belgium than in France, this remedy is near Bryonia for general complaints) were prescribed 27 times each, followed by Euphrasia (11 times), Arsenicum album, Baptisia tinctoria, Influenzinum, Oscillocochinum. Only two complications developed, (bronchitis) one time easily treated with Anisum stellatum, antibiotics needed the other time. Most of cases solved in 2 or 3 days. It has been quoted that none of the patients having asked for a preventive treatment (once a week during the epidemic period) with Influenzinum, Mucococchinum or Oscillocochinum did present flu symptoms.

For Austria: The situation was evaluated and more than 300 patients were reported from 30 physicians. 27 different remedies were used adapted to the situation. Most quoted remedies were Bryonia alba, Belladonna, Gelsemium, Influenzinum, Eupatorium perfoliatum, Arsenicum album, Oscillocochinum, Nux vomica. Several times the intake of the known global personal remedy (simillimum) was sufficient to solve the case very fast. Most of the cases were solved in the 2 or 3 following days. Of course, these flu reports are not controlled systematic recording, more systematic and structured cases 'collections would be needed to assess the real value of homeopathy in case of epidemic situation. But the daily practice includes specific attention and treatments for these cases looking at each patient's symptoms individually. More research is needed and foreseen through the activities of the ISCHI (a scientific committee dedicated to Influenza and Homeopathy). This time no real genus epidemicus came out very clearly even if Bryonia (or Anisum

stellatum) and Gelsemium seems to be the most frequently and efficiently used remedies.

2012 – New publications

Flu pandemics: Homeopathic prophylaxis and definition of the epidemic genius. Renan M. Indian Journal of Research in Homeopathy. January/June 2012; Vol 6 n° 1&2:47-52.

Dengue: A survey in Thailand suggest that Eupatorium perfoliatum 200C may be beneficial for reducing individual susceptibility to dengue virus. Confirmation is needed. Teerachaisakul M. Proceedings of the 66th LMHI Congress in India.

Chikungunya: Bryonia alba 30C was better than placebo in decreasing the incidence of this viral fever in Kerala (n=19750 Bryonia group, n=18479 placebo group). Nair K.R.J. Proceedings of the 66th LMHI Congress in India.

2014- New publications

1. Mathie RT, Baitson ES, Frye J, Nayak C, Manchanda RK, Fisher P. Homeopathic treatment of patients with influenza-like illness during the 2009 A/H1N1 influenza pandemic in India. Homeopathy 2013;102:187-92.

The 2009 A/H1N1 influenza pandemic in India was characterised by several prominent symptoms and symptom/medicine associations, particularly temperature >38°C + cough + runny nose, associated with Arsenicum album.

Conclusion

It would be irresponsible not to investigate seriously the observations made over two centuries by thousands of homeopaths concerning the homeopathic treatment of a wide variety of epidemic diseases.

XIV. MISCELLANEOUS

1. **Vitale K, Mundžar R, Sović S, Bergman-Marković B, Janev Holcer N. Use of complementary and alternative medicine among family medicine patients-example of the town of Čakovec. Acta Med Croatica. 2014 Dec;68(4-5):345-51.** Abstract: The use of complementary and alternative medicine (CAM) is widespread around the world including Croatia. The number of studies that investigate both quantitative and qualitative use of CAM in Croatia is limited. The aim of this study was to investigate the use of CAM among family medicine patients in the town of Čakovec and the rate they report it to their family doctor. This was a cross-sectional study in a sample of 300 patients that visited primary health centre for any reason. We used anonymous questionnaire already employed in a previous investigation (Čižmešija et al. 2008), which describes socioeconomic characteristics, modalities of CAM use, and reasons for use. We also added questions on the type of herbs used and use of over-the-counter vitamin and mineral supplements. On data analysis we used descriptive statistics, χ^2 -test and Fisher's exact test, while the level of statistical significance was set at $p \leq 0.05$. The response rate was 76%. Out of the total number of patients, 82% used some modality of CAM. Women, patients with secondary school education, employed and retired persons used CAM more often. Students and pupils reported least use of CAM. The most

commonly used were herbs (87%), bio energy (29%), diet therapy (28%), chiropractics (22%), and homeopathy and acupuncture (11% each). Vitamin and mineral supplements were used by 77% of study subjects. CAM was most frequently used for respiratory, urinary and musculoskeletal problems, as well as to improve overall health condition. Of the respondents that reported CAM use, 55% believed it would help them, 43% used it because they wanted to try something new, while only 2% indicated dissatisfaction with their physician as the reason for using CAM. Statistically, there were more subjects that used CAM and did not notify their family doctor about it, which could indicate poor communication between family doctors and health care users. Our results are consistent with a previous quantitative study conducted in Croatia and with literature data on the countries with a predominant use of western medicine. Qualitative data from previous studies in Croatia could explain the cultural and socioeconomic context of CAM use. Dissatisfaction with their physician as the reason for using CAM was rarely indicated, suggesting that CAM most probably fills the gap between successful and unsuccessful treatment, and perception that evidence based medicine has its own limitations. The arguments to turn to CAM therapy could involve poor doctor to patient ratio, i.e. 1750 patients per family medicine doctor on

average, and the 20% increase in the number of diseases and conditions diagnosed by family medicine units. In conclusion, these results suggest that the use of CAM is common among patients in family medicine. When taking patient history, doctors should ask about CAM use and be aware of the patient beliefs and lifestyle. When patients strongly believe in CAM methods, there is the need of making compromise in therapy, with explanation of the possible side effects and at the same time continuous follow up. There is the need of additional education of family doctors and population about good and bad effects of CAM. In Croatia, accent should be on herbalism because this modality is most widespread.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26285467>

2. **Rutten L. Data collection: Treat every variable as a treasure. Homeopathy. 2015 Jul;104(3):190-6. doi: 10.1016/j.homp.2014.11.002.** Abstract: Collection of data concerning case histories is not yet common in homeopathy despite its great importance for this method. Computer program development progresses slowly and discussion about requirements is scarce. Two Dutch projects assessed Materia Medica of some homeopathic medicines and six homeopathic symptoms. Especially the second project relied heavily on data collection. In both projects much effort was spent on consensus between participating doctors. There was much variance between doctors despite our consensus efforts.

Assessing causality seems the most important source of bias, there is also much variance in assessing symptoms. CONCLUSION: Data collection software should be developed step-by-step, guided by close monitoring and feedback of participating practitioners.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143452>

3. **Kumar S, Pandey SS, Kaur P. Treatment behaviour of leprosy patients on time scale. Indian J Lepr. 2014 Jul-Sep;86(3):111-6.** Abstract: Leprosy is not a disease of modern civilization and industrialization, but its origin is as old as 4600 BC. Although the cure of leprosy is possible by MDT, there are certain misbeliefs in the mind of leprosy patients leads to delay in disease reporting. Wandering of the patient from one healer to another healer also one of the cause that delays the start of MDT. It is known fact that the delayed response in getting medical treatment for leprosy causes permanent physical deformities in the patient. This study is aimed to identify the treatment behavior of leprosy patients on time scale. A total of 251 study subjects were selected randomly attending the Skin & VD OPD of S S Hospital of IMS, BHU, Varanasi. Questions related to treatment behavior on time scale were administered to leprosy patients aged 15 years or above by the interviewer himself. Time gap to start the initial treatment was significantly less in MB cases (5.3 months) as compared to PB cases (7.2 months). MB cases wasted significantly more time with

allopathic treatment other than MDT. Urban patients (1.3 months) wasted more time with homeopathy than the rural patients (0.9 months). More than half the cases (51.4%) went for the treatment within three months of noticing symptoms of leprosy. There is a considerable delay in starting the MDT after noticing the first symptom of leprosy. As early as possible, measures to start the proper treatment i.e. MDT should be taken to avoid permanent disability due to leprosy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26118223>

4. **Bellavite P. Homeopathy and integrative medicine: keeping an open mind. J Med Person. 2015;13(1):1-6.** Abstract: Some physicians have incorporated some forms of complementary and alternative medicine (CAM) or related medicinal products in their clinical practices, suggesting that an unconventional treatment approach might be seen as an integration rather than as an alternative to standard medical practice. Among the various CAMs, homeopathy enjoys growing popularity with the lay population, but it is not acknowledged by academia or included in medical guidelines. The major problem is to establish the effectiveness of this clinical approach using the strict criteria of evidence-based medicine. This issue of the Journal of Medicine and the Person collects contributions from some of the most prestigious centers and research groups working in the field of homeopathy and integrative medicine. These contributions are

not specialized information but are of general interest, focusing on this discipline as one of the emerging fields of personalized medical treatment.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25815160>

5. **Frei H. Homeopathic treatment of multimorbid patients: a prospective outcome study with polarity analysis. Homeopathy. 2015 Jan;104(1):57-65. doi: 10.1016/j.homp.2014.09.001.**

BACKGROUND: The treatment of multimorbid patients who have a combination of three or more concurrent complaints is one of the core competencies of homeopathy. In this article we introduce the application of polarity analysis (PA) in multimorbidity. PA came to prominence through the Swiss homeopathic ADHD double-blind study, which successfully demonstrated a significant difference between highly dilute homeopathic remedies and placebo. PA enables homeopaths to calculate a relative healing probability, based on Boenninghausen's grading of polar symptoms. After its evaluation in the treatment of a variety of acute and chronic disease, which showed improved results compared to a conventional homeopathic approach, it was a challenge to test PA with multimorbid patients. Since such patients almost invariably have a multiple symptoms, the question was whether we can nevertheless successfully use Polarity Analysis or whether the method is rendered ineffective by the multitude of symptoms. **METHODS:** We treated 50 multimorbid patients with PA and prospectively followed them over one year. **RESULTS:** 43 patients (86%) completed the observation period, achieving an average improvement of 91% in their initial symptoms. Six patients dropped

out, and one did not achieve an improvement of 80%, and was therefore also counted as a treatment failure. The cost of homeopathic treatment was 41% of projected equivalent conventional treatment. **CONCLUSIONS:** Polarity Analysis is an effective method for treating multimorbidity. The multitude of symptoms does not prevent the method from achieving good results. Homeopathy may be capable of taking over a considerable proportion of the treatment of multimorbid patients, at lower costs than conventional medicine.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(14\)00084-8/pdf](http://www.homeopathyjournal.net/article/S1475-4916(14)00084-8/pdf)

6. **Massin S, Ventelou B, Nebout A, Verger P, Pulcini C. Cross-sectional survey: risk-averse French general practitioners are more favorable toward influenza vaccination. *Vaccine*. 2015;33(5):610-4. doi: 10.1016/j.vaccine.2014.12.038.** Objectives: We tested the following hypotheses: (i) risk-averse general practitioners (GPs) are more likely to be vaccinated against influenza; (ii) and risk-averse GPs recommend influenza vaccination more often to their patients. In risk-averse GPs, the perceived benefits of the vaccine and/or the perceived risks of the infectious disease might indeed outweigh the perceived risks of the vaccine. Patients/methods: In 2010-2012, we conducted a cross-sectional survey of a nationwide French representative sample of 1136 GPs. Multivariate analyses adjusted for four stratification variables (age, gender, urban/suburban/rural practice location and annual patient consultations) and for GPs' characteristics (group/solo practice, and occasional practice of alternative medicine,

e.g., homeopathy) looked for associations between their risk attitudes and self-reported vaccination behavior. Individual risk attitudes were expressed as a continuous variable, from 0 (risk-tolerant) to 10 (risk-averse). Results: Overall, 69% of GPs reported that they were very favorable toward vaccination in general. Self-reported vaccination coverage was 78% for 2009/2010 seasonal influenza and 62% for A/H1N1 pandemic influenza. Most GPs (72%) reported recommending the pandemic influenza vaccination to at-risk young adults in 2009, but few than half (42%) to young adults not at risk. In multivariate analyses, risk-averse GPs were more often vaccinated against seasonal (marginal effect=1.3%, $P=0.02$) and pandemic influenza (marginal effect=1.5%, $P=0.02$). Risk-averse GPs recommended the pandemic influenza vaccination more often than their more risk-tolerant colleagues to patients without risk factors (marginal effect=1.7%, $P=0.01$), but not to their at-risk patients and were more favorable toward vaccination in general (marginal effect=1.5%, $P=0.04$). Conclusion: Individual risk attitudes may influence GPs' practices regarding influenza vaccination, both for themselves and their patients. Our results suggest that risk-averse GPs may perceive the risks of influenza to outweigh the potential risks related to the vaccine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25545596>

7. **Massin S, Ventelou B, Nebout A, Verger P, Pulcini C. Cross-sectional survey: risk-averse French general practitioners are**

more favorable toward influenza vaccination. Vaccine. 2015 Jan 29;33(5):610-4. doi: 10.1016/j.vaccine.2014.12.038.

Objectives: We tested the following hypotheses: (i) risk-averse general practitioners (GPs) are more likely to be vaccinated against influenza; (ii) and risk-averse GPs recommend influenza vaccination more often to their patients. In risk-averse GPs, the perceived benefits of the vaccine and/or the perceived risks of the infectious disease might indeed outweigh the perceived risks of the vaccine. Patients/methods: In 2010-2012, we conducted a cross-sectional survey of a nationwide French representative sample of 1136 GPs. Multivariate analyses adjusted for four stratification variables (age, gender, urban/suburban/rural practice location and annual patient consultations) and for GPs' characteristics (group/solo practice, and occasional practice of alternative medicine, e.g., homeopathy) looked for associations between their risk attitudes and self-reported vaccination behavior. Individual risk attitudes were expressed as a continuous variable, from 0 (risk-tolerant) to 10 (risk-averse). Results: Overall, 69% of GPs reported that they were very favorable toward vaccination in general. Self-reported vaccination coverage was 78% for 2009/2010 seasonal influenza and 62% for A/H1N1 pandemic influenza. Most GPs (72%) reported recommending the pandemic influenza vaccination to at-risk young adults in 2009, but few than half (42%) to young adults not at risk. In multivariate analyses, risk-averse GPs were more often vaccinated against seasonal (marginal effect=1.3%,

P=0.02) and pandemic influenza (marginal effect=1.5%, P=0.02). Risk-averse GPs recommended the pandemic influenza vaccination more often than their more risk-tolerant colleagues to patients without risk factors (marginal effect=1.7%, P=0.01), but not to their at-risk patients and were more favorable toward vaccination in general (marginal effect=1.5%, P=0.04). Conclusion: Individual risk attitudes may influence GPs' practices regarding influenza vaccination, both for themselves and their patients. Our results suggest that risk-averse GPs may perceive the risks of influenza to outweigh the potential risks related to the vaccine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25545596>

8. **Ben-Arye E, Hamadeh AM, Schiff E, Jamous RM, Dagash J, Jamous RM, Agbarya A, Bar-Sela G, Massalha E, Silbermann M, Ali-Shtayeh MS. Compared perspectives of Arab patients in Palestine and Israel on the role of complementary medicine in cancer care. J Pain Symptom Manage. 2015 May;49(5):878-84. doi: 10.1016/j.jpainsymman.2014.10.006.**

Context: Complementary medicine (CM) is extensively used by patients with cancer across the Middle East. Objectives: We aimed to compare the perspectives of two Arab populations residing in diverse socioeconomic-cultural settings in Palestine and Israel regarding the role of CM in supportive cancer care. Methods: A 27-item questionnaire was constructed and administered to a convenience sample of Arab patients receiving cancer care in four

oncology centers in northern Israel and Palestine. Results: Each of the two groups had 324 respondents and was equally distributed by age and marital status. Compared with the Israeli-Arab group, Palestinian participants reported significantly higher CM use for cancer-related outcomes (63.5% vs. 39.6%, $P < 0.001$), which included more herbal use (97.6% vs. 87.9%, $P = 0.001$) and significantly lower use of dietary supplements, acupuncture, mind-body and manual therapies, and homeopathy. Most respondents in both groups stated that they would consult CM providers if CM was integrated in oncology departments. Related to this theoretical integrative scenario, Palestinian respondents expressed fewer expectations from their oncologists to actively participate in building their CM treatment plan. Treatment expectations in both groups focused on improving quality of life (QOL), whereas Palestinian respondents had fewer expectations for CM to improve fatigue, emotional concerns, sleep, and daily functioning. Conclusion: Arab patients with cancer from Palestine and Israel highly support CM integration within their oncology institutions aiming to improve QOL. Nevertheless, respondents differed in their perceived model of CM integration, its treatment objectives, and their oncologists' role in CM integration.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25499828>

9. **Barros NF, Fiuza AR. Evidence-based medicine and prejudice-based medicine: the case of homeopathy. Cad Saude Publica. 2014 Nov;30(11):2368-2376.**

Abstract: In recent decades an important social movement related to Complementary and Alternative Medicine has been identified worldwide. In Brazil, although homeopathy was recognized as a specialist medical area in 1980, few medical schools offer courses related to it. In a previous study, 176 resident doctors at the University of Campinas Medical School were interviewed and 86 (49%) rejected homeopathy as a subject in the core medical curriculum. Thus, this qualitative study was conducted to understand their reasons for refusing. 20 residents from 15 different specialist areas were interviewed. Very few of them admitted to a lack of knowledge for making a judgment about homeopathy; none of them made a conscientious objection to it; and the majority demonstrated prejudice, affirming that there is not enough scientific evidence to support homeopathy, defending their position based on personal opinion, limited clinical practice and on information circulated in the mass media. Finally, resident doctors' prejudices against homeopathy can be extended to practices other than allopathic medicine.

Source:

<http://www.scielo.br/pdf/csp/v30n11/0102-311X-csp-30-11-2368.pdf>

10. **Rossi E, Vita A, Baccetti S, Di Stefano M, Voller F, Zanobini A. Complementary and alternative medicine for cancer patients: results of the EPAAC survey on integrative oncology centres in Europe. Support Care Cancer. 2015 Jun;23(6):1795-806. doi: 10.1007/s00520-014-2517-4. Background:**

The Region of Tuscany Health Department was included as an associated member in WP7 "Healthcare" of the European Partnership for Action Against Cancer (EPAAC), initiated by the EU Commission in 2009. Aims: The principal aim was to map centres across Europe prioritizing those that provide public health services and operating within the national health system in integrative oncology (IO). Methods: A cross-sectional descriptive survey design was used to collect data. A questionnaire was elaborated concerning integrative oncology therapies to be administered to all the national health system oncology centres or hospitals in each European country. These institutes were identified by convenience sampling, searching on oncology websites and forums. The official websites of these structures were analysed to obtain more information about their activities and contacts. Results: Information was received from 123 (52.1 %) out of the 236 centres contacted until 31 December 2013. Forty-seven out of 99 responding centres meeting inclusion criteria (47.5 %) provided integrative oncology treatments, 24 from Italy and 23 from other European countries. The number of patients seen per year was on average 301.2 ± 337 . Among the centres providing these kinds of therapies, 33 (70.2 %) use fixed protocols and 35 (74.5 %) use systems for the evaluation of results. Thirty-two centres (68.1 %) had research in progress or carried out until the deadline of the survey. The complementary and alternative medicines (CAMs) more frequently provided to cancer patients were

acupuncture 26 (55.3 %), homeopathy 19 (40.4 %), herbal medicine 18 (38.3 %) and traditional Chinese medicine 17 (36.2 %); anthroposophic medicine 10 (21.3 %); homotoxicology 6 (12.8 %); and other therapies 30 (63.8 %). Treatments are mainly directed to reduce adverse reactions to chemo-radiotherapy (23.9 %), in particular nausea and vomiting (13.4 %) and leucopenia (5 %). The CAMs were also used to reduce pain and fatigue (10.9 %), to reduce side effects of iatrogenic menopause (8.8 %) and to improve anxiety and depression (5.9 %), gastrointestinal disorders (5 %), sleep disturbances and neuropathy (3.8 %). Conclusions: Mapping of the centres across Europe is an essential step in the process of creating a European network of centres, experts and professionals constantly engaged in the field of integrative oncology, in order to increase, share and disseminate the knowledge in this field and provide evidence-based practice.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25471177>

11. **Chiang HS. The teaching and application of alternative medicine in medical education programs. Hu Li Za Zhi. 2014 Dec;61(6):5-11. doi: 10.6224/JN.61.6.5.** Abstract: The history of alternative medicine is perhaps as long as the history of human medicine. The development of evidence-based medicine has not annihilated alternative medicine. On the contrary, more people turn to alternative medicine because this approach to treatment serves as an effective remedial or supportive treatment when used in conjunction with evidence-based medicine. In contemporary healthcare, alternative medicine is now an

essential part of integrated medicine. In Taiwan, most professional medical practitioners have not received proper education about alternative medicine and therefore generally lack comprehensive knowledge on this subject. While alternative medicine may be effective when used with some patients, it may also impart a placebo effect, which helps restore the body and soul of the patients. Medical staff with advanced knowledge of alternative medicine may not only help patients but also improve the doctor-patient relationship. There is great diversity in alternative medicine, with some alternative therapies supported by evidence and covered by insurance. However, there also remain fraudulent medical practices that may be harmful to health. Medical staff must be properly educated so that they can provide patients and their family a proper understanding and attitude toward alternative medicine. Therefore, alternative medicine should be included in the standard medical education curriculum. Offering classes on alternative medicine in university for more than 10 years, the author shares his experiences regarding potential content, lecture subjects, group experience exercises, and in-class activities. This article is intended to provide a reference to professors in university medical education and offer a possible model for alternative medicine education in Taiwan.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25464950>

12. Geisler C, Cheung C, Johnson Steinhagen S, Neubeck P, Brueggeman AD. Nurse practitioner knowledge, use, and referral of complementary/alternative therapies. J Am Assoc Nurse Pract. 2015 Jul;27(7):380-8. doi: 10.1002/2327-6924.12190. Purpose: The

study aims are to (a) describe nurse practitioners' (NPs') belief in effectiveness, knowledge, referral, and use of complementary/alternative therapies (C/ATs), (b) explore the initiation of C/AT dialogue between NPs and their patients, and (c) examine the relationships between demographic variables and NP C/AT knowledge, beliefs, use, referrals. Data sources: A mixed-method cross-sectional online survey of licensed NPs (N = 2874) from a Midwestern state was analyzed using descriptive statistics, thematic analysis, and content analysis. Conclusions: NPs (n = 410) report the most knowledge about prayer (40%) and mind-body practices (32%). Many NPs (84%) report using vitamins for personal use and 85% refer their patients for massage/bodywork. Most (95%) believe NPs should have knowledge of the most common C/AT and 81% believe C/AT have a legitimate use in allopathic medicine. NPs' knowledge, belief, use, and referral of C/AT are significantly correlated. NPs initiate C/AT dialogue with their patients 54% of the time. Factors that impact the NP and patient C/AT dialogue include patient/family openness, nature of the health problem, NP C/AT knowledge, time, and accessibility.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25451238>

13. Van Wassenhoven M, Goossens M, Anelli M, Sermeus G, Kupers P, Morgado C, Martin E, Bezerra M. Pediatric homeopathy: a prospective observational survey based on parent proxy-reports of their children's

health-related Quality of Life in six European countries and Brazil. Homeopathy. 2014 Oct;103(4):257-63. doi:

10.1016/j.homp.2014.05.003. Background: Many European citizens regularly consult homeopathic doctors. Especially for children there is very little data available about the reasons they visit a homeopathic doctor. What are the expectations of the parents consulting a Homeopath MD with their child, who are they and last but not least are they satisfied with their initiative? This study including 773 children from six European countries and Brazil is aimed to look at parent-proxy satisfaction with homeopathic treatment prescribed for their children by a homeopathic doctor after a follow-up of two months. The questionnaire was developed from the methodology used in a survey of adults published in 2002. Method: An initial questionnaire included demographic information and questions for assessing health-related Quality of Life (QoL). A follow-up questionnaire collected data on changes in QoL. Results: The demographic characteristics of respondents showed more male children (53.1%) but more female parent-proxies (93.4%). 73.7% of respondents had previously tried conventional treatments; 26.3% non-conventional approaches. Satisfaction with the medical homeopathic consultation was high. Reported differences between baseline and final QoL indexes are positive for all four studied conditions. It range from 3.206 to 10.188. Considering 7% as a reference value for "minimal clinical difference", this is reached for 2 on 4 conditions (8.473 and

10.188). Changes in complaint limitations visual scales are positive, even if uncertain for skin complaints and influenced parents satisfaction. Conclusions on clinical impact must be cautious. 4.2% of patients experienced side-effects which they attribute to homeopathic treatment. 10.1% of patients reported significant aggravation at the beginning of homeopathic treatment, 19% slight aggravation of symptoms. Conclusions: The satisfaction of parents using a medical homeopathic approach for their children is linked to the perceived competence of the doctor homeopath, the perceived improvement of the main complaint limitations and the completeness of the received information.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25439042>

14. **Van Wassenhoven M, Goossens M, Anelli M, Sermeus G, Kupers P, Morgado C, Martin E, Bezerra M.** Homeopathy and health related Quality of Life: a patient satisfaction survey in six European countries and Brazil. **Homeopathy. 2014 Oct;103(4):250-6. doi: 10.1016/j.homp.2014.08.005.** Background: Many patients throughout the world consult homeopathic medical doctors. Using a similar methodology as in a first survey published in 2002 a second survey was done including 919 adults receiving homeopathic treatment in six European countries and Brazil aimed to look at who are they, their reasons for consultations and expectations and satisfaction with homeopathy prescribed by a homeopathic doctor after a follow-up time of six months. Method: An initial

questionnaire included demographic information and questions for assessing health-related Quality of Life (QoL). A follow-up questionnaire collected data on changes in QoL. Results: 77% patients had initially used conventional treatments and 23% other non-conventional treatments. Satisfaction of patients with the medical homeopathic consultation is high. The difference between the final QoL scores after six months and the baseline are positive. Reported differences between baseline and final index range from 3.87 to 10.41 depending on diagnosis. Taking 7% as a reference value for 'minimal clinically significant difference', this is reached for 3 of 8 conditions. Changes in complaint limitations visual scales are positive. Conclusions on clinical impact must be cautious. 6% of the patients experienced side-effects which they attributed to homeopathic treatment. 7.8% of the patients reported significant aggravation at the beginning of the homeopathic treatment and 26.2% slight aggravation of symptoms. Conclusions: The satisfaction of patients using a medical homeopathic approach is linked to the perceived competence of the doctor homeopath, the perceived improvement of the main complaints limitations and the time dedicated to them by the doctor.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25439041>

15. **Clausen J, Moss S, Tournier A, Lüdtke R, Albrecht H. CORE-Hom: a powerful and exhaustive database of clinical trials in homeopathy. Homeopathy. 2014**

Oct;103(4):219-23.

doi:

10.1016/j.homp.2014.07.001. Abstract: The CORE-Hom database was created to answer the need for a reliable and publicly available source of information in the field of clinical research in homeopathy. As of May 2014 it held 1048 entries of clinical trials, observational studies and surveys in the field of homeopathy, including second publications and re-analyses. 352 of the trials referenced in the database were published in peer reviewed journals, 198 of which were randomised controlled trials. The most often used remedies were Arnica montana (n = 103) and Traumeel® (n = 40). The most studied medical conditions were respiratory tract infections (n = 126) and traumatic injuries (n = 110). The aim of this article is to introduce the database to the public, describing and explaining the interface, features and content of the CORE-Hom database.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(14\)00077-0/pdf](http://www.homeopathyjournal.net/article/S1475-4916(14)00077-0/pdf)

16. **Sturza CM. Secret lanthanides. J Med Life. 2014 Sep 15;7(3):381-6.** Abstract: Lanthanides are a group of 15 chemical elements which, together with their salts, have come to be used in the last decade as homeopathic remedies. The effective introduction of lanthanides and their salts into the clinical use, as homeopathic remedies was based on the idea of Jan Scholten, MD to relate their physicochemical properties shown in the periodic table of elements to their homeopathic potential. The lanthanides and their salts were

prepared as homoeopathic remedies by Pharmacist Robert Münz.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4233444/>

17. **Mahmoudian A, Sadri G.** **Homeopathy satisfaction in Iran. Iran J Nurs Midwifery Res. 2014 Sep;19(5):496-502.**

Background: Patient satisfaction is a key indicator of the quality and effectiveness of a therapeutic method. Assessing the satisfaction of patients undergoing homeopathic therapy is essential in the early steps of educating the community, if suitable outcomes are to be achieved. Materials and methods: This descriptive cross-sectional study was conducted in 2008 on 125 patients from the city of Isfahan. Patients aged above 15 years who had referred to the homeopathic practitioners and received homeopathic drugs for at least three times were randomly selected and included in the study. Patient satisfaction was assessed in three main areas (general health, physician performance, and symptoms relief) using a valid questionnaire. The results were compared with those of a similar study conducted in 2004 on 240 patients. Results: Mean score of satisfaction with homeopathic treatment was 77.48 ± 6.36 out of 100. In 2004, it was 77.4 ± 8.13 . Median age was 36.41 ± 11.25 years. Median time of therapy was 16.80 ± 17.94 months. The highest level of satisfaction was related to relief of symptoms. Satisfaction of physician performance and improvement of general health came next. The degree of satisfaction with therapy was not significant between the

different groups with regard to their sex and different levels of education, but there was significant difference in the duration of treatment. The four symptoms that showed better improvement in 2008 were headache, gastrointestinal (GI) disturbances, fatigue, and insomnia. Conclusions: After using homeopathy for several years, patients' satisfaction was found to be still high. Shifting the area of satisfaction from general health to relief of symptoms could be related to physicians' experiments for remedy selection. Scientific centers should do more surveys about the effectiveness of homeopathic treatment. Integration of homeopathy with medicine may bring in more success at less cost. It seems rational to support homeopathy as an effective practice.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4223967/>

18. **Boatto G, Trignano C, Burrai L, Spanu A, Nieddu M.** **Effects of homeopathic mother tinctures on breath alcohol testing. J Forensic Sci. 2015 Jan;60 Suppl 1:S231-3. doi: 10.1111/1556-4029.12662.** Abstract: In some countries, it is illegal to drive with any detectable amount of alcohol in blood; in others, the legal limit is 0.5 g/L or lower. Recently, some defendants charged with driving under the influence of alcohol and have claimed that positive breath alcohol test results were due to the ingestion of homeopathic mother tinctures. These preparations are obtained by maceration, digestion, infusion, or decoction of herbal material in hydroalcoholic solvent. A series of tests were conducted to evaluate the

alcoholic content of three homeopathic mother tinctures and their ability to produce inaccurate breath alcohol results. Nine of 30 subjects gave positive results (0.11-0.82 g/L) when tests were taken within 1 min after drinking mother tincture. All tests taken at least 15 min after the mother tincture consumption and resulted in alcohol-free readings. An observation period of 15-20 min prior to breath alcohol testing eliminates the possibility of false-positive results.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25387897>

19. **Zelante A, De Giorgi A, Borgoni R, Trevisani L, Gallerani M. Adherence to medical treatment in inflammatory bowel disease patients. Minerva Gastroenterol Dietol. 2014 Dec;60(4):269-74. Aim: Inflammatory bowel diseases (IBD) are a group of chronic intestinal conditions characterized by unpredictable course, with periods of flare-ups and remissions suggesting poor adherence to medical therapy. On the other hand adherence is one of the most common reason of failure in the treatment of chronic disease. Methods: We have analyzed IBD patients' questionnaires, sent by IBD Society of Emilia-Romagna Region (Italy). The anonymous questionnaire included sex, age, qualification, management, disease duration, disease associated, previous surgery, use of homeopathy and self-medication and possible psychological support. We classified patients based on IBD type: Crohn's disease (CD) and ulcerative colitis (UC). Results: A total of 559 IBD patients were analysed**

(50.1% female), 52.8% were affected by CD. Patients were followed by gastroenterologist in 84.7% of cases. 17.4% of patient reported non-adherence to medical therapy; univariate analysis showed that non-adherence was more frequent in young females followed-up by general practitioners, no difference was found in educational status or type of IBD. Factors independently associated with greater adherence to medical therapy were age (OR=2.039) and follow-up by gastroenterologist (OR=3.025). Conclusion: Non-adherence should be taken into account in IBD patients and especially in young female. Gastroenterologists have a major role in promoting education.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25384805>

20. **Koley M, Saha S, Ghosh S, Nag G, Kundu M, Mondal R, Purkait R, Patra S. A validation study of homeopathic prescribing and patient care indicators. J Tradit Complement Med. 2014 Oct;4(4):289-92. doi: 10.4103/2225-4110.133987. Abstract: A preliminary version of the homeopathic prescribing and patient care indicators was available. The instrument was modified further in this study with an intention to address formally its validity and reliability, audit prescriptions, identify areas of sub-optimal prescribing, and highlight target areas for improving the quality of practices. A cross-sectional study with record analysis was conducted on systematically sampled 377 patients of Mahesh Bhattacharyya Homeopathic Medical College and Hospital (MBHMC and H), Howrah, West Bengal, India.**

The outcome measures were homeopathic prescribing indicators (6 items) and patient care indicators (5 items). Individualized homeopathic prescriptions predominated in the encounters. Areas demanding immediate attention were extremely poor labeling of drugs dispensed from the hospital pharmacy, improper record of case history and disease diagnosis, ongoing therapies, and investigational findings in the prescriptions. Internal consistency of the overall instrument was estimated to be good (Cronbach's alpha: Prescribing indicators 0.752 and patient care indicators 0.791). The prescribing indicators, except items 1 and 3, reflected acceptable item-corrected total correlations - Pearson's r from 0.58 (95% CI: 0.52-0.65) to 0.74 (95% CI: 0.69-0.78). The patient care indicators, except item 2, showed acceptable correlations - Pearson's r from 0.40 (95% CI: 0.31-0.48) to 0.82 (95% CI: 0.78-0.85). The instrument also showed high discriminant validity (prescribing indicators $P < 0.0001$ and patient care indicators $P < 0.0001$). Improper prescribing practice was quite rampant and corrective measures are warranted. The developed indicators appeared to be validated and reliable; however, they are amendable for further development.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4220510/>

21. **Solelhac G, Charpin D. Management of allergic rhinitis. *F1000Prime Rep.* 2014 Oct 1;6:94. doi: 10.12703/P6-94.** Abstract: In this paper, we review the current management of allergic rhinitis and new directions for future treatment. Currently, management includes

pharmacotherapy, allergen avoidance and possibly immunotherapy. The simple washing of nasal cavities using isotonic saline provides a significant improvement and is useful, particularly in children. The most effective medication in persistent rhinitis used singly is topical corticosteroid, which decreases all symptoms, including ocular ones. Antihistamines reduce nasal itch, sneeze and rhinorrhea and can be used orally or topically. When intranasal antihistamine is used together with topical corticosteroid, the combination is more effective and acts more rapidly than either drug used alone. Alternative therapies, such as homeopathy, acupuncture and intranasal carbon dioxide, or devices such as nasal air filters or intranasal cellulose, have produced some positive results in small trials but are not recommended by Allergic Rhinitis and its Impact on Asthma (ARIA). In the field of allergic immunotherapy, subcutaneous and sublingual routes are currently used, the former being perhaps more efficient and the latter safer. Sublingual tablets are now available. Their efficacy compared to standard routes needs to be evaluated. Efforts have been made to develop more effective and simpler immunotherapy by modifying allergens and developing alternative routes. Standard allergen avoidance procedures used alone do not provide positive results. A comprehensive, multi-trigger, multi-component approach is needed, including avoidance of pollutants such as cigarette smoke.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4191273/pdf/medrep-06-94.pdf>

22. **Rutten LA, Mathie RT, Manchanda RK. Making sense of prior probabilities in research. Trends Mol Med. 2014 Nov;20(11):599-600. doi:**

10.1016/j.molmed.2014.09.007. Summary:

In a recent article, Gorski and Novella state that prior probabilities can be so low that putting them to the test makes no sense [1]. A few decades ago the randomised controlled trial (RCT) was demanded because of the low prior probability of clinical methods such as homeopathy. Interestingly, the mention of prior chance and its updating using Bayes' theorem arose after a considerable number of RCTs of homeopathy were subjected to meta-analysis; this concluded that the results were not compatible with the placebo hypothesis for homeopathy [2].

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25362626>

23. **Franik S, Huidekoper HH, Visser G, de Vries M, de Boer L, Hermans-Peters M, Rodenburg R, Verhaak C, Vlieger AM, Smeitink JA, Janssen MC, Wortmann SB. High prevalence of complementary and alternative medicine use in patients with genetically proven mitochondrial disorders. J Inher Metab Dis. 2015;38(3):477-82. doi:**

10.1007/s10545-014-9773-9. Abstract: Despite major advances in understanding the pathophysiology of mitochondrial diseases, clinical management of these conditions remains largely supportive, and no effective

treatment is available. We therefore assumed that the burden of disease combined with the lack of adequate treatment leaves open a big market for complementary and alternative medicine use. The objective of this study was to evaluate the use and perceived effectiveness of complementary and alternative medicine in children and adults with genetically proven mitochondrial disease. The reported use was surprisingly high, with 88% of children and 91% of adults having used some kind of complementary and alternative medicine in the last 2 years. Also, the mean cost of these treatments was impressive, being <euro>489/year for children and <euro>359/year for adult patients. Over-the-counter remedies (e.g., food supplements, homeopathy) and self-help techniques (e.g., Reiki, yoga) were the most frequently used complementary and alternative therapies in our cohort: 54% of children and 60% of adults reported the various complementary and alternative medicine therapies to be effective. Given the fact that currently no effective treatment exists, further research toward the different therapies is needed, as our study clearly demonstrates that such therapies are highly sought after by affected patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25303853>

24. **Danno K, Joubert C, Duru G, Vetel JM. Physician practicing preferences for conventional or homeopathic medicines in elderly subjects with musculoskeletal disorders in the EPI3-MSD cohort. Clin**

Epidemiol. 2014;6:333-41.

doi:

10.2147/CLEP.S64049.

Background:

Musculoskeletal pain is common in elderly persons. Analgesic use is high in the elderly and may involve unacceptable risk in individuals with chronic pain. Our aim was to compare the socio-demographic characteristics of elderly subjects with musculoskeletal disorders (MSD) and to assess medication use and clinical evolution of musculoskeletal pain according to physician prescribing preference: homeopathy (Ho) group, conventional medicine (CM) group, or mixed prescription (MX) group. **Methods:** The EPI3 study was a 1 year observational survey carried out among general practitioners in France between March 2007 and July 2008. This sub-analysis was carried out on elderly subjects aged ≥ 70 years from the original EPI3 cohort. Socio-demographic data were collected at inclusion using a self-administered patient questionnaire and medical data were recorded for each patient. Quality of life was measured using the Short Form-12 questionnaire. Patients completed a structured telephone interview on their functional status (evaluated with the QuickDash questionnaire, EIFEL scale or Lequesne index) within 72 hours of inclusion. This telephone interview was repeated at 1, 3, and 12 months. Drug exposure was also assessed during these interviews. **Results:** 146 patients (mean age \pm standard deviation: 75.8 ± 4.8 years) were analyzed (80.1% female, 74.7% MSD of the spine or lower limbs, 64.4% chronic MSD). Patients in the CM and MX groups were 3.7 times or 2.5

times more likely (odds ratio [OR] = 3.71, 95% confidence interval [CI]: 1.12-12.30; OR = 2.52, 95% CI: 1.05-6.05; respectively) to have used non-steroidal anti-inflammatory drugs (NSAIDs) than those in the Ho group. In contrast, analgesic use was comparable in the three groups (OR = 1.06 [CM versus Ho], 95% CI: 0.09-12.11; OR = 0.34 [MX versus Ho], 95% CI: 0.07-1.57). Overall functional score evolution was similar in the three groups over time ($P=0.16$). **Conclusion:** NSAID use was significantly higher in elderly MSD patients consulting a conventional practice general practitioner. In contrast, analgesic use and MSD evolution were similar in the three groups. Consulting a homeopathic physician for MSD management does not appear to represent a loss of therapeutic opportunity, and decreases the use of NSAIDs.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4186571/pdf/clep-6-333.pdf>

25. **Gschwendtner KM, Klein G, G  thlin C, Holmberg C, Horneber M, Weis J. Importance of complementary medicine approaches for patients with prostate cancer. Urologe A. 2014;53(11):1600-9. doi: 10.1007/s00120-014-3613-2.** **Background:** In Germany, many prostate cancer patients use complementary medicine (CM) or have an interest in these treatment approaches; however, the information and consultation situation of cancer patients is insufficient and therefore the Competence Network Complementary Medicine in Oncology (COCON) was launched by the German Cancer Aid Society. One of the projects of the COCON examines the use of CM and the

information and counseling needs regarding these topics in various groups of cancer patients. The focus of this article is on the qualitative study reporting selected results for the subgroup of prostate cancer patients. Study design and study methods: A total of 19 semi-structured qualitative interviews with prostate cancer patients were conducted regarding the use of CM as well as their information and consultation needs. Results: It was found that the patients interviewed discussed various issues surrounding nutrition, particularly a healthy diet, the selective use of certain foods and the use of dietary supplements. Additional themes mentioned by interviewees were physical exercise, psychological well-being, mistletoe therapy, homeopathy and traditional Chinese medicine. Patients indicated that they wanted more information and counseling opportunities with regards to CM. They also expressed a desire for more holistic care. Conclusion: The results show that prostate cancer patients use a range of CM and have a need for information about CM. Prostate cancer patients are in a special situation because of a regular feedback on the prostate-specific antigen (PSA) value. This should be taken into consideration in consultation with prostate cancer patients regarding CM.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25297489>

26. Kern J, Bielory L. Complementary and alternative therapy (CAM) in the treatment of allergic rhinitis. *Curr Allergy Asthma Rep.* 2014;14(12):479. doi: 10.1007/s11882-

014-0479-8. Abstract: CAM is any therapeutic intervention that exists outside traditional allopathic medicine. The utilization in the US population is increasing up to 4 out of 10 patients in some surveys. Given this increasing prevalence, it is essential that clinicians have the resources to advise their patients in the utilizations, benefits, and potential harms of these alternative therapies. Recent literature was reviewed in regard to traditional Chinese medicine [TCM], acupuncture, homeopathy, and herbal therapy in the treatment of allergic rhinitis limited to randomized controlled trials. Several complementary treatment studies demonstrated statistically significant benefits to patients' quality of life and symptom scoring without providing duration of effect. Alternative therapy studies have revealed mixed results in regard to efficacy. Although the adverse effect profile is low, additional studies will be required to further promote integration into the standard of care for the routine treatment of allergic rhinitis.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25269403>

27. Ahmad A, Khan MU, Kumar BD, Kumar GS, Rodriguez SP, Patel I. Beliefs, attitudes and self-use of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy medicines among senior pharmacy students: An exploratory insight from Andhra Pradesh, India. *Pharmacognosy Res.* 2014;7(4):302-8. doi: 10.4103/0974-8490.158438. Objectives: To assess the beliefs, attitudes and self-use of

Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH) medicines among senior pharmacy students. **Methodology:** This was a descriptive cross-sectional study conducted among pharmacy students in four pharmacy schools located in Andhra Pradesh in South India. This study was conducted from the August to September 2014. The study population included all pharmacy students enrolled in Doctor of Pharmacy, Bachelor of Pharmacy and Diploma in Pharmacy programs in studied pharmacy schools. The pretested AYUSH survey had 8 questions on AYUSH related beliefs and 8 question on AYUSH related attitudes. The survey also asked participants about AYUSH related knowledge, frequency of use of AYUSH and the reason for using AYUSH. The data analysis was performed using SPSS Version 20. Chi-square test and Mann-Whitney U-test were employed to study the association between the independent and dependent variables. **Results:** A total of 428 pharmacy students participated in the survey. 32.2% of the study population was females and 32.5% of the population resided in rural areas. Males were more likely to have positive beliefs about AYUSH when compared to females (odd ratio [OR] = 4.62, confidence interval [CI] = 2.37-8.99, $P < 0.001$). Similarly, students living in hostels were more positive in their beliefs about AYUSH compared with students living at home (OR = 2.14, CI = 1.12-4.07, $P < 0.05$). Students living in hostel also had a positive attitude about AYUSH use (OR = 1.74, CI = 1.03-2.93, $P < 0.05$). **Conclusion:** Pharmacy students held favorable attitude and beliefs

about AYUSH use. This baseline survey provides important information about the pharmacy student's perception about AYUSH. Further research is needed to explore the reasons that shape the pharmacy student's beliefs and attitudes about AYUSH. Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4660507/>

28. **Silverberg JI, Lee-Wong M, Silverberg NB. Complementary and alternative medicines and childhood eczema: a US population-based study. *Dermatitis*. 2014;25(5):246-54. doi: 10.1097/DER.0000000000000072.** Abstract: The prevalence of complementary and alternative medicine (CAM) use in US children with eczema is unknown. Furthermore, it is unknown whether CAM use in the United States is associated with higher eczema prevalence. We sought to determine the eczema prevalence in association with CAM usage. We analyzed data from the 2007 National Health Interview Survey that included a nationally representative sample of 9417 children ages 0 to 17 years. Overall, 46.9% (95% confidence interval, 45.6%-48.2%) of children in the United States used 1 or more CAM, of which 0.99% (0.28%-1.71%) used CAM specifically to treat their eczema, including herbal therapy (0.46%), vitamins (0.33%), Ayurveda (0.28%), naturopathy (0.24%), homeopathy (0.20%), and traditional healing (0.12%). Several CAMs used for other purposes were associated with increased eczema prevalence, including herbal therapy (survey logistic regression; adjusted odds ratio [95% confidence interval], 2.07 [1.40-3.06]), vitamins (1.45

[1.21-1.74]), homeopathic therapy (2.94 [1.43-6.00]), movement techniques (3.66 [1.62-8.30]), and diet (2.24 [1.10-4.58]), particularly vegan diet (2.53 [1.17-5.51]). In conclusion, multiple CAMs are commonly used for the treatment of eczema in US children. However, some CAMs may actually be harmful to the skin and be associated with higher eczema prevalence in the United States.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25207686>

29. **Sisson D, Balmer C. A chemical burn from a garlic poultice applied to the face to treat toothache: a case report. Prim Dent J. 2014;3(1):28-9. doi:**

10.1308/205016814812136057. Abstract:

This case report is of a significant chemical burn to the face resulting from the use of an external garlic poultice for toothache. The patient used internet search engines to seek a toothache remedy and did not identify any reports of this complication. This report aims to inform all dentists of the risks of raw garlic application to the skin and also to ensure that in the future any patient using the internet for a toothache remedy will be made aware of the potential risk and how to avoid it.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25198327>

30. **Esters P, Dignass A. Complementary therapies in inflammatory bowel diseases. Curr Drug Targets. 2014;15(11):1079-88.**

Abstract: Complementary and alternative therapies (CAM) are defined as therapies that are presently not considered part of

conventional medical practice. They are termed "complementary" when used in addition to conventional therapies and termed "alternative" when used instead of conventional therapies. CAM includes many different practices, for example Ayurveda, acupuncture or traditional Chinese medicine (TCM), phytotherapy, homeopathy, probiotics and dietary supplements. While some evidence of benefit exists regarding some therapies, for most of these therapeutic approaches, the therapeutic efficacy and safety have not been proven in well-designed scientific studies. However, the use of complementary and alternative medicine among IBD patients is common, and physicians are frequently confronted with questions about their use. As most of the reported studies contain methodological problems, it is often difficult for physicians to inform their patients adequately. Nevertheless, the widespread use of CAM needs to be recognized. Some of these agents exert plausible biological effects in IBD patients and warrant further investigation. Controlled trials in IBD are warranted to show therapeutic benefits and safety of CAM. This review aims to give a brief overview on the current use of various complementary and alternative treatment options in IBD patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25182607>

31. **Gorski DH, Novella SP. Clinical trials of integrative medicine: testing whether magic works? Trends Mol Med. 2014;20(9):473-6. doi:**

10.1016/j.molmed.2014.06.007.

Abstract: Over the past two decades

complementary and alternative medicine treatments relying on dubious science have been embraced by medical academia. Despite low to nonexistent prior probability that testing these treatments in randomized clinical trials (RCTs) will be successful, RCTs of these modalities have proliferated, consistent with the principles of evidence-based medicine, which underemphasize prior plausibility rooted in science. We examine this phenomenon and argue that what is needed is science-based medicine rather than evidence-based medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25150944>

32. **de Barra M, Eriksson K, Strimling P. How feedback biases give ineffective medical treatments a good reputation. J Med Internet Res. 2014;16(8):e193. doi: 10.2196/jmir.3214.** Background: Medical treatments with no direct effect (like homeopathy) or that cause harm (like bloodletting) are common across cultures and throughout history. How do such treatments spread and persist? Most medical treatments result in a range of outcomes: some people improve while others deteriorate. If the people who improve are more inclined to tell others about their experiences than the people who deteriorate, ineffective or even harmful treatments can maintain a good reputation. Objective: The intent of this study was to test the hypothesis that positive outcomes are overrepresented in online medical product reviews, to examine if this reputational distortion is large enough to bias people's

decisions, and to explore the implications of this bias for the cultural evolution of medical treatments. Methods: We compared outcomes of weight loss treatments and fertility treatments in clinical trials to outcomes reported in 1901 reviews on Amazon. Then, in a series of experiments, we evaluated people's choice of weight loss diet after reading different reviews. Finally, a mathematical model was used to examine if this bias could result in less effective treatments having a better reputation than more effective treatments. Results: Data are consistent with the hypothesis that people with better outcomes are more inclined to write reviews. After 6 months on the diet, 93% (64/69) of online reviewers reported a weight loss of 10 kg or more while just 27% (19/71) of clinical trial participants experienced this level of weight change. A similar positive distortion was found in fertility treatment reviews. In a series of experiments, we show that people are more inclined to begin a diet with many positive reviews, than a diet with reviews that are representative of the diet's true effect. A mathematical model of medical cultural evolution shows that the size of the positive distortion critically depends on the shape of the outcome distribution. Conclusions: Online reviews overestimate the benefits of medical treatments, probably because people with negative outcomes are less inclined to tell others about their experiences. This bias can enable ineffective medical treatments to maintain a good reputation.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4147705/>

33. **Relton C, Viksveen P, Kessler U. The Making Cases Count initiative. Complement Ther Med. 2014;22(4):621-4. doi: 10.1016/j.ctim.2014.04.006.** Abstract: Given the challenges faced, how can homeopaths communicate the power and scope of the therapeutic system of homeopathy? Homeopaths need to communicate to patients, the public and media, other healthcare professionals, healthcare researchers, and funders of healthcare (healthcare insurers, those who commission healthcare services either in publicly funded healthcare systems such as the NHS or charities). Effective communication with these stakeholders requires information that is: (a) easily understood, (b) credible, and (c) relevant. The patient's voice is the trusted, indisputable and easily understood common ground in homeopathy. Yet, the experiences of patients are rarely heard outside the profession of homeopathy. Homeopaths are in a unique position to make these voices heard by disseminating the results of their routine practice cases incorporating their patients' voices. The 'Making Cases Count' initiative has been created in order to bring about a culture where easily understood, trusted and salient information is regularly made available to all stakeholders in homeopathy. The Making Cases Count initiative supports, guides and incentivises homeopaths to collect routine data with the aim of bringing about a culture where a

significant proportion of homeopaths collect routine data from their patients in a format which will then be able to be transformed (i.e. anonymised, summarised and counted). This routine data requires numbers and categories to report the behavior and the perspective of patients receiving homeopathic treatment. This can be strengthened through the use of validated outcome measures in hearing patients' voices. When transformed, this routine data will then be able to inform homeopaths and more importantly other key stakeholders. It is now time to make patient cases count.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25146064>

34. **Kowall B, Breckenkamp J, Berg-Beckhoff G. General practitioners using complementary and alternative medicine differ from general practitioners using conventional medicine in their view of the risks of electromagnetic fields: a postal survey from Germany. J Prim Care Community Health. 2015;6(1):21-8. doi: 10.1177/2150131914546332.** Objective: General practitioners (GPs) play a key role in consulting patients worried about health effects of electromagnetic fields (EMF). We compared GPs using conventional medicine (COM) with GPs using complementary and alternative medicine (CAM) concerning their perception of EMF risks. Moreover, we assessed whether the kind of alternative medicine has an influence on the results. Methods: A total of 2795 GPs drawn randomly from lists of German GPs were sent an either long or short self-administered postal questionnaire on EMF-related topics.

Adjusted logistic regression models were fitted to assess the association of an education in alternative medicine with various aspects of perceiving EMF risks. Results: Concern about EMF, misconceptions about EMF, and distrust toward scientific organizations are more prevalent in CAM-GPs. CAM-GPs more often falsely believed that mobile phone use can lead to head warming of more than 1°C (odds ratio [OR] = 2.2, 95% confidence interval [CI] = 1.5-3.3), more often distrusted the Federal Office for Radiation Protection (OR = 2.2, 95% CI = 1.4-3.6), were more often concerned about mobile phone base stations (OR = 2.4, 95% CI = 1.6-3.6), more often attributed own health complaints to EMF (OR = 3.2, 95% CI = 1.8-5.6), and more often reported at least 1 EMF consultation (OR = 2.5, 95% CI = 1.6-3.9). GPs using homeopathy perceived EMF as more risky than GPs using acupuncture or naturopathic treatment. Conclusion: Concern about common EMF sources is highly prevalent among German GPs. CAM-GPs perceive stronger associations between EMF and health problems than COM-GPs. There is a need for evidence-based information about EMF risks for GPs and particularly for CAM-GPs. This is the precondition that GPs can inform patients about EMF and health in line with current scientific knowledge.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25142575>

35. **Jahn S. The flu epidemic after World War I and homeopathy--an international comparison. Med Ges Gesch. 2014;32:231-72. Abstract: The "Spanish Flu" began in 1918**

and was the most devastating pandemic in human history that had ever been, claiming more lives than World War I. The flu virus had not yet been discovered, and the usual therapy measures were merely symptomatic. In many parts of the world the pandemic was treated by homeopaths. At the time, homeopathic medical practices, out-patient clinics and hospitals existed in various countries. To this day homeopaths refer to the successful homeopathic treatment of the "Spanish Flu". The following paper looks at what this treatment consisted in and whether it was based on a particular concept. It also examines contemporary evaluations and figures, as well as the question as to whether homeopathy experienced a rise in demand as a consequence of its success during the pandemic.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25134258>

36. **Chandhiok N, Joglekar N, Shrotri A, Choudhury P, Chaudhury N, Singh S. Task-shifting challenges for provision of skilled birth attendance: a qualitative exploration. Int Health. 2015;7(3):195-203. doi: 10.1093/inthealth/ihu048.** Background: Shortage of skilled birth attendants (SBA) is one of the determinants of maternal mortality in India. To combat this shortage, innovative task-shifting strategies to engage providers of the Indian system of medicine (Ayurveda and Homeopathy), called AYUSH practitioners (AP), to provide SBA services is being implemented. Methods: Engagement of APs for SBA service provision was assessed in 3 states of India (Maharashtra, Rajasthan

and Odisha) through 73 in-depth interviews (37 with APs and 36 with programme managers). The interviews explored the providers' SBA training experience, barriers for SBA service provision, workplace and community acceptance, and the perspective of programme managers on the competence and quality of SBA services provided. Results: SBA training led to skill enhancement with adoption of appropriate maternal and newborn care practices. A dedicated trainer, more hands-on practice, and strengthening training on newborn care practices and management of complications emerged as the training needs. Conditional involvement in SBA-related work, a discriminatory attitude at the workplace and lack of legal/regulatory authorisation were identified as barriers to the inclusion of APs in SBA service provision. Conclusions: Quality skill enhancement measures, an enabling work environment, a systematic task-shifting process, role definition, supportive supervision and credentialing could be key for the integration of APs and their acceptance in the health system.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25091026>

37. Netherwood M, Derham R. Interprofessional education: merging nursing, midwifery and CAM. Br J Nurs. 2014;23(13):740-3. doi: 10.12968/bjon.2014.23.13.740. Aim: To ascertain the value of bringing together undergraduate students from nursing, midwifery, and complementary and alternative medicine (CAM) to determine

what they could learn from each other. Background: Interprofessional education (IPE) is a growing field promoting interaction between professional groups, collaborative working and quality of health. In conventional health, IPE has a role to play in undergraduate education. No studies have been undertaken to investigate the integration of CAM students and conventional undergraduate healthcare students. Method: In a mixed-method study, in 2010, a sample of third-year students enrolled on adult nursing, midwifery, homeopathy and complementary therapies degree courses took part in two workshops and a focus-group discussion. Findings: Six themes were identified from qualitative data analysis: interaction; breaking down prejudices; knowledge of self; knowledge of others; common aims; and organisational limitations. Conclusion: The common aim of patient-centred care allowed students to recognise the benefits of a more integrated health system.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25072337>

38. Saha S, Koley M, Arya JS, Choubey G, Ghosh S, Ganguly S, Gosavi T, Ghosh A, Ali SA, Gupta N. Hering's Law Assessment Tool revisited: introducing a modified novel version--Patients' Response Assessment Tool after Homeopathic Treatment (PRATHoT) in chronic cases. J Evid Based Complementary Altern Med. 2014;19(4):260-6. doi: 10.1177/2156587214543142. Abstract: Hering's Law Assessment Tool emerged as a

systematic outcome assessment tool following homeopathic intervention. The authors intend to modify it and develop a new tool-Patient Response Assessment Tool after Homeopathic Treatment (PRATHoT)-in chronic cases through Delphi technique for systematic categorization of probable outcomes following individualized homeopathic treatment in chronic cases. The PRATHoT was drafted after literature review and iterative Delphi rounds with multidisciplinary expert panel, setting Fleiss κ of 0.41 to 1.00 a priori as the desired level of multirater agreement. Following pilot testing, the tool was implemented on 37 patients suffering from knee osteoarthritis over 6 months. Logistic regression analysis confirmed that higher PRATHoT score was significantly associated with achieving pain visual analogue scale responses from the second follow-up visit onwards ($B = 0.037$ - 0.066 ; $SE = 0.021$ - 0.036 ; $P = .003$ -. 048). The tool appeared to have acceptable psychometric properties; hence, it may be considered as a promising tool, amendable for further development.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25053753>

39. **Levy D, Gadd B, Kerridge J, Komesaroff PA. A gentle ethical defence of homeopathy. J Bioeth Inq. 2015;12(2):203-9. doi: 10.1007/s11673-014-9563-y.** Abstract: Recent discourses about the legitimacy of homeopathy have focused on its scientific plausibility, mechanism of action, and evidence base. These, frequently, conclude not only that homeopathy is scientifically

baseless, but that it is "unethical." They have also diminished patients' perspectives, values, and preferences. We contend that these critics confuse epistemic questions with questions of ethics, misconstrue the moral status of homeopaths, and have an impoverished idea of ethics-one that fails to account either for the moral worth of care and of relationships or for the perspectives, values, and preferences of patients. Utilitarian critics, in particular, endeavour to present an objective evaluation-a type of moral calculus-quantifying the utilities and disutilities of homeopathy as a justification for the exclusion of homeopathy from research and health care. But these critiques are built upon a narrow formulation of evidence and care and a diminished episteme that excludes the values and preferences of researchers, homeopaths, and patients engaged in the practice of homeopathy. We suggest that homeopathy is ethical as it fulfils the needs and expectations of many patients; may be practiced safely and prudentially; values care and the virtues of the therapeutic relationship; and provides important benefits for patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25037244>

40. **Münstedt K, Maisch M, Tinneberg HR, Hübner J. Complementary and alternative medicine (CAM) in obstetrics and gynaecology: a survey of office-based obstetricians and gynaecologists regarding attitudes towards CAM, its provision and cooperation with other CAM providers in the state of Hesse, Germany. Arch Gynecol**

Obstet. 2014;290(6):1133-9. doi: 10.1007/s00404-014-3315-4. Purpose:

Whereas we have some information on complementary medicine in the field of oncology, little is known about complementary medicine in the field of obstetrics and gynaecology especially outside of hospitals. Methods: All office-based obstetricians and gynaecologists in the state of Hesse, Germany, were contacted and asked to fill in an assessment form regarding cooperation in the field of complementary and alternative medicine (CAM), as well as the perceived efficacy of various CAM methods for a number of pathological conditions in the field of obstetrics and gynaecology. Results: It was found that more than half of Hessian office-based obstetricians and gynaecologists had existing cooperation regarding CAM, especially with colleagues, but also midwives, pharmacists, physiotherapists, and health practitioners. The probability of cooperation was significantly inversely associated with age. It was found that the probability for advising CAM differed between various health problems. The following CAM methods were considered reasonable for the treatment of different conditions: phytotherapy for climacteric complaints and premenstrual syndrome; homoeopathy for puerperal problems; acupuncture and traditional Chinese medicine for complaints during pregnancy; and dietary supplements for the side effects of cancer therapy. Conclusions: The analysis shows that there is much cooperation in the field of CAM. Comparison between physicians' perceived efficacy of

CAM methods and objective findings shows that there is a need for the provision of valid information in the field.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24973867>

41. **Saha S, Koley M, Mahoney ER, Hibbard J, Ghosh S, Nag G, Purkait R, Mondal R, Kundu M, Patra S, Ali SS, Arya JS, Choubey G. Patient activation measures in a government homeopathic hospital in India. J Evid Based Complementary Altern Med. 2014;19(4):253-9. doi: 10.1177/2156587214540175.** Abstract: The American Patient Activation Measure-22 questionnaire (PAM-22) quantifies the knowledge, skills, and confidence essential to manage own health and health care. It is a central concept in chronic illness care models, but studied sparsely in homeopathic hospitals. PAM-22 was translated into Bengali and a cross-sectional study was undertaken in chronically ill 417 patients visiting the outpatient clinic of Mahesh Bhattacharyya Homeopathic Medical College and Hospital, India. Response rate was 90.41%. Data were analyzed using Rasch rating scale model with Winsteps. Activation score was 54.7 ± 8.04 or 62.13% of maximum score. PAM scores differed significantly by age, education, income, and health status ($P < .05$). The items had good data quality fit statistics and good range of difficulty. The construct unidimensionality was confirmed by good model fits for Rasch model and principal component analysis of residuals found no meaning structure. The questionnaire showed acceptable

psychometrics. Patient activation was moderate and needs to be improved.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24972592>

42. **Upadhya V, Hegde HV, Bhat S, Kholkute SD.**

Non-codified traditional medicine practices from Belgaum Region in Southern India: present scenario. J Ethnobiol

Ethnomed. 2014;10:49. doi: 10.1186/1746-4269-10-49.

Background: Traditional medicine in India can be classified into codified (Ayurveda, Unani, Siddha, Homeopathy) and non-codified (folk medicine) systems. Both the systems contributing equally to the primary healthcare in India. The present study is aimed to understand the current scenario of medicinal practices of non-codified system of traditional medicine in Belgaum region, India. **Methods:** The study has been conducted as a basic survey of identified non-codified traditional practitioners by convenience sampling with semi structured, open ended interviews and discussions. The learning process, disease diagnosis, treatment, remuneration, sharing of knowledge and socio-demographic data was collected, analysed and discussed. **Results:** One hundred and forty traditional practitioners were identified and interviewed for the present study. These practitioners are locally known as "Vaidya". The study revealed that the non-codified healthcare tradition is practiced mainly by elderly persons in the age group of 61 years and above (40%). 73% of the practitioners learnt the tradition from their forefathers, and 19% of practitioners

developed their own practices through experimentation, reading and learning. 20% of the practitioners follow distinctive "Nadi Pariksha" (pulse examination) for disease diagnosis, while others follow bodily symptoms and complaints. 29% of the traditional practitioners do not charge anything, while 59% practitioners receive money as remuneration. Plant and animal materials are used as sources of medicines, with a variety of preparation methods. The preference ranking test revealed higher education and migration from villages are the main reasons for decreasing interest amongst the younger generation, while deforestation emerged as the main cause of medicinal plants depletion. **Conclusion:** Patrilineal transfer of the knowledge to younger generation was observed in Belgaum region. The observed resemblance in disease diagnosis, plant collection and processing between non-codified traditional system of medicine and Ayurveda require further methodical studies to establish the relationship between the two on a more objective basis. However, the practice appears to be at crossroads with threat of extinction, because of non-inheritance of the knowledge and non-availability of medicinal plants. Hence conservation strategies for both knowledge and resources at societal, scientific and legislative levels are urgently required to preserve the traditional wisdom.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4084578/pdf/1746-4269-10-49.pdf>

43. **Jütte R. Hahnemann and placebo. Homeopathy. 2014;103(3):208-12. doi:**

10.1016/j.homp.2014.03.003. Abstract: Samuel Hahnemann (1755-1843) known today as the founder of homeopathy, was - as far as we know - the first physician who administered placebos to his patient on a systematic and regular basis. This study is based upon unpublished documents (e.g. patients' letters) in the Archives of the Institute for the History of Medicine of the Robert Bosch Foundation in Stuttgart. It also profited from the critical edition of Hahnemann's case journals and the editorial comments which have also been published in this series. Hahnemann differentiated clearly between homeopathic drugs and pharmaceutical substances which he considered as sham medicine (e.g. milk sugar). A close look at Hahnemann's case journals reveals that the percentage of placebo prescriptions was very high (between 54 and 85 percent). In most instances Hahnemann marked placebos with the paragraph symbol (§). The rationale behind this practice was that Hahnemann had encountered the well-known problem that patients were used to taking medicine on a daily basis as it was typical for the age of heroic medicine. The main reason for giving placebo was therefore to please the impatient patient who was used to frequent medications in allopathic medicine, not only every day but sometimes also hourly.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24931754>

44. **McGuigan M. Observations on the effects of odours on the homeopathic response. Homeopathy. 2014;103(3):198-202. doi:**

10.1016/j.homp.2014.01.002. Abstract: Samuel Hahnemann described incidences where the homeopathic response was disrupted by noxious smells in the environment. An earlier paper proposed that homeopathic medicines may be sensed by vomeronasal cells (VNCs) i.e. microvillus or brush cells in the vomeronasal organ (VNO), the taste buds and associated with the trigeminal nerve and nervus terminalis. This paper proposes an extension to the theory and suggests that a subset of solitary chemosensory cells (SCCs) in the diffuse chemosensory system (DCS) that is morphologically similar to VNCs might also be receptive to homeopathic medicines. The types of odours that may interfere with this process are described. Two clinical cases of disruption of the homeopathic response are given as examples, showing that successful re-establishment of remedy action can be produced by timely repetition of the medicine. The ramifications on clinical homeopathic practice are discussed.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24931752>

45. **Clausen J, van Wijk R, Albrecht H. Geographical and temporal distribution of basic research experiments in homeopathy. Homeopathy. 2014;103(3):193-7. doi: 10.1016/j.homp.2014.01.001.** Abstract: The database HomBRex (Homeopathy Basic Research experiments) was established in 2002 to provide an overview of the basic research already done on homeopathy (<http://www.carstens-stiftung.de/hombrex>). By this means, it

facilitates the exploration of the Similia Principle and the working mechanism of homeopathy. Since 2002, the total number of experiments listed has almost doubled. The current review reports the history of basic research in homeopathy as evidenced by publication dates and origin of publications. In July 2013, the database held 1868 entries. Most publications were reported from France (n = 267), followed by Germany (n = 246) and India (n = 237). In the last ten years, the number of publications from Brazil dramatically increased from n = 13 (before 2004) to n = 164 (compared to n = 251 published in France before 2004, and n = 16 between 2004 and 2013). The oldest database entry was from Germany (1832).

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24931751>

46. **Ghosh S, Saha S, Koley M, Kundu M, Mondal R, Patra S. Access to and utilization of the health services among the patients in a government homeopathic hospital in West Bengal, India: a cross-sectional study. J Evid Based Complementary Altern Med. 2014 Oct;19(4):247-52. doi: 10.1177/2156587214538452.** Abstract: Accessibility to and utilization of the hospital health services is a complex and multifaceted issue. This study aimed to assess the knowledge of the patients of health services, current level of access to and utilization of services and to identify barriers and socioeconomic disparities in an Indian homeopathic hospital. A cross-sectional survey was conducted in December 2013 on systematically sampled 377 patients.

Responses were analyzed using descriptive statistics and univariate logistic regression. Mean knowledge score and perceived mean difficulties in access to and utilization of services were 68.4% and 78.5%, respectively. Knowledge of the services was influenced by age, residence, education, speaking and reading of Bengali language, and income status (P < .05). Difficulty in access to and utilization of the health services were influenced by residence, understanding of Bengali language, and monthly household income (P < .05). Overall, health service access and utilization appeared promising, but needs improvement.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24924431>

47. **Mattes J. Scientability - an answer to homeopathy? Z Evid Fortbild Qual Gesundheitswes. 2014;108(4):229-32. doi: 10.1016/j.zefq.2014.04.002.** Abstract: Introducing the term "scientability", Christian Weymayr proposed to disapprove of clinical studies of homeopathy since the latter contradicts "definite scientific findings." This article argues against his conclusion. Specifically, violating the principle of total evidence would undermine the credibility of science.
Source:
<http://www.ncbi.nlm.nih.gov/pubmed/24889712>
48. **Dalla Libera D, Colombo B, Pavan G, Comi G. Complementary and alternative medicine (CAM) use in an Italian cohort of pediatric headache patients: the tip of the iceberg. Neurol Sci. 2014;35 Suppl 1:145-8. doi:**

10.1007/s10072-014-1756-y. Abstract: The use of complementary alternative medicine (CAM) in paediatric populations is considerably increased, especially for pain and chronic conditions, as demonstrated by epidemiological surveys both in Europe and in the USA. In our study, CAM was used in 76 % patients of a cohort of 124 children affected by headache (age 4-16 years; 67 % female; 70 % migraine without aura, 12 % migraine with aura, 18 % tensive headache according to IHS criteria) consecutively recruited at a Pediatric Headache University Center. CAM was used as preventive treatment in 80 % cases. The main reasons for seeking CAM were: the wish of avoiding chronic use of drugs with their related side effects, the desire of an integrated approach, the reported inefficacy of conventional medicine, and a more suitable children disposition to CAM than to pharmacological compound. Female gender, younger age, migraine without aura, parents' higher educational status, maternal use of CAM and other associated chronic conditions, correlated with CAM use ($p < 0.05$). 73 % patients chose CAM also to treat other diseases (i.e. allergies, colitis, asthma, insomnia, muscle-scheletric disorders and dysmenorrhoea). The most assumed CAM were: herbal remedies (64 %) such as Valeriana, Ginkgo biloba, Boswellia serrata, Vitex agnus-castus, passion flower, Linden tree; vitamins/minerals supplements (40 %) with magnesium, 5-Hydroxytryptophan, vitamin B6 or B12, Multivitamin compounds; Homeopathy (47 %) with Silicea, Ignatia Amara, Pulsatilla, Aconitum, Nux

Vomica, Calcarea phosphorica; physical treatment (45 %) such as Ayurvedic massage, shiatsu, osteopathy; yoga (33 %); acupuncture (11 %). CAM-often integrated with conventional care-was auto-prescribed in 30 % of the cases, suggested by non-physician in 22 %, by the General Practitioner in 24 % and by paediatrician in 24 %. Both general practitioners and neurologists were mostly unaware of their patients' CAM use. In conclusion, neurologists should inquire for CAM use and be prepared to learn about CAM therapies or to directly interact with CAM trained experts, in order to coordinate an integrative approach to health, as especially required in paediatric headache patients and their parents. Further studies are required to investigate safety and efficacy of CAM in pediatric headache, as a possible side-medicine to conventional pharmacological approach.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24867852>

49. **Schmaltz R, Lilienfeld SO. Hauntings, homeopathy, and the Hopkinsville Goblins: using pseudoscience to teach scientific thinking. Front Psychol. 2014;5:336. doi: 10.3389/fpsyg.2014.00336.** Abstract: With access to information ever increasing, it is essential that students acquire the skills to distinguish fact from fiction. By incorporating examples of pseudoscience into lectures, instructors can provide students with the tools needed to understand the difference between scientific and pseudoscientific or paranormal claims. We discuss examples

involving psychics, ghosts, aliens, and other phenomena in relation to scientific thinking. In light of research literature demonstrating that presenting and dispelling scientific misconceptions in the classroom is an effective means of countering non-scientific or pseudoscientific beliefs, we provide examples of pseudoscience that can be used to help students acquire healthy skepticism while avoiding cynicism.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4028994/pdf/fpsyg-05-00336.pdf>

50. **Givati A. Performing 'pragmatic holism': Professionalisation and the holistic discourse of non-medically qualified acupuncturists and homeopaths in the United Kingdom. Health (London). 2015;19(1):34-50. doi: 10.1177/1363459314530739.** Abstract: Complementary and alternative medicine practitioners have often utilised 'holism' as a key identification mark of their practice, distancing themselves from 'the reductionist biomedicine'. However, the past couple of decades have witnessed increased engagement of several complementary and alternative medicines in professionalisation, which includes a degree of biomedical alignment while 'reducing' holistic claims in order to provide practice with a 'credible outlook' and move closer to the mainstream, a development which challenges the role of holism in complementary and alternative medicine practices. This article explores the strategies by which two groups of complementary and alternative medicine practitioners, namely, non-medically

qualified acupuncturists and homeopaths in the United Kingdom, pragmatically accommodate holistic notions as a professional resource, a process of negotiation between maintaining their holistic premise, on the one hand, and the drive to professionalise and enhance their societal status, on the other. Based on in-depth interviews with non-medically qualified acupuncture and homeopathy practitioners and school principals, textual analysis of practitioners' web sites and observation of practice, the findings demonstrate the dynamic approach to 'holism' in complementary and alternative medicine practice. This discourse, through which practitioners use a range of strategies in order to 'narrow' or 'expand' their holistic expression, can be described as 'pragmatic holism', by which they try to make gains from the formalisation/standardisation processes, without losing the therapies' holistic outlook and appeal.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24821927>

51. **Huebner J, Muenstedt K, Prott FJ, Stoll C, Micke O, Buentzel J, Muecke R, Senf B. Online survey of patients with breast cancer on complementary and alternative medicine. Breast Care (Basel). 2014;9(1):60-3. doi: 10.1159/000360381.** Abstract: About 50% of cancer patients use complementary and alternative medicine (CAM). Women with breast cancer use CAM more frequently than others. We linked a questionnaire to the largest internet portal for cancer patients in Germany. The questionnaire addresses

attitude towards CAM, disclosure to the oncologist, source of information, and objectives for use of CAM. 80 patients with breast cancer took part in our study, 61 currently using CAM. Most frequently used CAM methods were selenium, relaxation techniques, prayer, vitamin C, and meditation. Satisfaction was highest with relaxation techniques, vitamin C, homeopathy, yoga and Chinese herbs, lowest with mistletoe and acupuncture. 70% of participants did not think their oncologist took time to discuss CAM. Only 16% believed that their oncologist was well-informed about CAM. 46% relied on naturopaths and non-medical practitioners concerning CAM. Objectives for the use of CAM were to reduce side effects, boost the immune system, and become active.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3995381/pdf/brc-0009-0060.pdf>

52. **Călina DC, Docea AO, Bogdan M, Bubulică MV, Chiuțu L. bThe pharmacists and homeopathy. Curr Health Sci J. 2014;40(1):57-9. doi:**

10.12865/CHSJ.40.01.10. Abstract: Presented at the end of the end of the XVIII(th) century by the German doctor Samuel Hahnemann as a form of complementary therapy, homeopathy has increasingly produced multiple controversies regarding the plausibility, effectiveness and safety of homeopathic remedies. Regardless, there are clients who require pharmacist's advice about their usage indications and effectiveness. As specialists in the field of medication, pharmacists must have basic

notions about the principles on which homeopathic remedies have been based, given that it is the opposite of modern pharmacological theories. These describe in great detail the underlying mechanisms of action of the drug. Under these conditions, the ethical role of the pharmacist is to give accurate, impartial information regarding the homeopathic therapy, the current scientific proof on their therapeutic effects, including the placebo effect. This, doubled by a comprehensive, objective presentation of the options of medication-based treatment, guarantee pharmacists a clean reputation as competent authorities in the pharmaceutical field.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4006339/pdf/CHSJ-40-1-057.pdf>

53. **Ghosh S, Panja S, Ghosh TN, Sharma P, Sarkar P, Koley M, Saha S. Dental Practice Scenario in a Government Homeopathic Hospital in West Bengal, India. J Evid Based Complementary Altern Med. 2014;17;19(3):200-204.** Abstract: This pilot investigation initiated a research-targeted systematic dental homeopathy data collection in the dental outpatient section in a government homeopathic hospital in West Bengal, India. One conventionally trained dentist and 3 homeopathic doctors collected data from 949 appointments of 411 patients over 3 months. A specifically designed Excel spreadsheet enabled recording of consecutive dental appointments that was subjected to data synthesis and analysis in the end. A total of 87.3% conditions were chronic, and chronic periodontitis was most

frequent (27.5%). Positive outcome was observed in 72.3% appointments. Strongly positive outcomes (scores of +2 or +3) were achieved most notably in toothache (84.6%). Single medicines were prescribed in 83.5% encounters, and mostly in tincture form (29.9%). Arnica montana constituted of 17.8% prescriptions. Considerable insight was gained into the homeopathic dental practice scenario in West Bengal, India. Positive findings suggest that dental homeopathy is a promising area for research in near future.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24742607>

54. **Galicia-Connolly E, Adams D, Bateman J, Dagenais S, Clifford T, Baydala L, King WJ, Vohra S. CAM use in pediatric neurology: an exploration of concurrent use with conventional medicine. *PLoS One*. 2014;9(4):e94078. doi: 10.1371/journal.pone.0094078.**

Background: Previous studies have found that up to 60% of children with neurologic conditions have tried complementary and alternative medicine (CAM). Objective: To assess the use of CAM among patients presenting to neurology clinics at two academic centers in Canada. Methods: A survey instrument was developed to inquire about use of CAM products and therapies, including reasons for use, perceived helpfulness, and concurrent use with conventional medicine, and administered to patients or their parents/guardians at the Stollery Children's Hospital in Edmonton and the Children's Hospital of Eastern Ontario

(CHEO) in Ottawa. Results: Overall CAM use at the Stollery was 78%, compared to 48% at CHEO. The most common CAM products used were multi-vitamins (84%), vitamin C (37%), homeopathic remedies (24%), and fish oil/omega 3 s (22%). The most common CAM practices used were massage (47%), chiropractic (37%), faith healing (18%), aromatherapy (16%), homeopathy (16%), and relaxation (16%). Many patients used CAM products at the same time as conventional medicine but just over half (57%) discussed this concurrent use with their physician. Conclusion: CAM use is common in pediatric neurology patients and most respondents felt that it was helpful, with few or no harms associated. However, this use is often undisclosed, increasing possibility of interactions with conventional drugs. We urge clinicians to inquire about CAM use during routine history taking at every patient visit. Parents would clearly like more information about CAM from their specialty clinics; such information would be easier to share if more primary data were available about the safety and effectiveness of commonly used therapies.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3988088/pdf/pone.0094078.pdf>

55. **Gaertner K, Müllner M, Friehs H, Schuster E, Marosi C, Muchitsch I, Frass M, Kaye AD. Additive homeopathy in cancer patients: Retrospective survival data from a homeopathic outpatient unit at the Medical University of Vienna. *Complement Ther Med*. 2014;22(2):320-32. doi: 10.1016/j.ctim.2013.12.014.** Background:

Current literature suggests a positive influence of additive classical homeopathy on global health and well-being in cancer patients. Besides encouraging case reports, there is little if any research on long-term survival of patients who obtain homeopathic care during cancer treatment. Design: Data from cancer patients who had undergone homeopathic treatment complementary to conventional anti-cancer treatment at the Outpatient Unit for Homeopathy in Malignant Diseases, Medical University Vienna, Department of Medicine I, Vienna, Austria, were collected, described and a retrospective subgroup-analysis with regard to survival time was performed. Patient inclusion criteria were at least three homeopathic consultations, fatal prognosis of disease, quantitative and qualitative description of patient characteristics, and survival time. Results: In four years, a total of 538 patients were recorded to have visited the Outpatient Unit Homeopathy in Malignant Diseases, Medical University Vienna, Department of Medicine I, Vienna, Austria. 62.8% of them were women, and nearly 20% had breast cancer. From the 53.7% (n=287) who had undergone at least three homeopathic consultations within four years, 18.7% (n=54) fulfilled inclusion criteria for survival analysis. The surveyed neoplasms were glioblastoma, lung, cholangiocellular and pancreatic carcinomas, metastasized sarcoma, and renal cell carcinoma. Median overall survival was compared to expert expectations of survival outcomes by specific cancer type and was prolonged across observed cancer entities

($p < 0.001$). Conclusion: Extended survival time in this sample of cancer patients with fatal prognosis but additive homeopathic treatment is interesting. However, findings are based on a small sample, and with only limited data available about patient and treatment characteristics. The relationship between homeopathic treatment and survival time requires prospective investigation in larger samples possibly using matched-pair control analysis or randomized trials.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24731904>

56. **Schmidt JM. New approaches within the history and theory of medicine and their relevance for homeopathy. Homeopathy. 2014;103(2):153-9. doi: 10.1016/j.homp.2013.08.007.** Abstract: Conventional sciences have brought forth a wealth of knowledge and benefits, but they have not always been clear and precise about their legitimate scope and methodological limitations. In contrast, new and critical approaches in modern sciences question and reflect their own presuppositions, dependencies, and constraints. Examples are quantum physics, theory and history of science, as well as theory and history of medicine, sociology, and economics. In this way, deprecative dogmatism and animosity amongst sciences ought to be lessened, while the field opens up for each science to redefine its appropriate place in society. This would appear to be a chance for homeopathy, as new approaches, especially within the social and economic

sciences, suggest that being a follower of Samuel Hahnemann (1755-1843) may have advantages and privileges that conventional medicine seems to be lacking and whose relevance was overlooked during the rise of economic thinking in the last two centuries.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24685422>

57. **Chatterjee BK. The mathematics of dilution. Homeopathy. 2014;103(2):143-6. doi:**

10.1016/j.homp.2013.11.005. Abstract: The major objection to homeopathic medicine is that the doses of medicine prescribed in some cases are too dilute for any active ingredient to be present. The medicines would hence be rendered inactive, necessitating novel explanations for the action. A further examination of dilution in the light of the Langmuir equation shows that homeopathic medicines may not be as dilute as a simplistic application of Avogadro's Principle suggests, due to surface effects.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24685420>

58. **Sherr J, Quirk T, Tournier AL. Do Homeopathic Pathogenetic Trials generate recognisable and reproducible symptom pictures?: Results from a pilot pathogenetic trial of Ozone 30c. Homeopathy. 2014;103(2):108-12. doi:**
10.1016/j.homp.2013.12.001. Background: Homeopathic Pathogenetic Trials (HPTs) are a pillar of homeopathy, a key source of the symptoms characteristic of a particular homeopathic medicine. Homeopaths choose homeopathic medicines by comparing these

remedy pictures with the symptoms the patient is presenting. Thus, recognition of these symptom sets underpins the clinical practice of homeopathy. Objective: To test whether HPTs generate consistent and recognisable sets of symptoms in consecutive trials. Design: Practising homeopaths, blinded to the homeopathic medicine under investigation, were given the set of symptoms generated during an unpublished HPT and asked to identify the homeopathic medicine used. Homeopathic trial substance: Ozone, prepared by homeopathic method to the ultramolecular dilution of 30c (10(-60) dilution), was chosen at random from twenty potential medicines. Results: Seven practising homeopaths were asked to make three guesses as to the identity of the remedy. Initially from the full list of possible remedies (N = 2372). Two of the seven homeopaths guessed the identity of the remedy correctly (p < 0.0001). Subsequently, when their choice of possible medicines was restricted to a list of 20, the same two homeopaths selected the correct medicine, however none of the other practising homeopaths did so (p = 0.2). Discussion: The selection of the correct homeopathic medicine from the unrestricted list (N = 2372 medicines) by two homeopaths is noteworthy given that the homeopathic medicine used during the HPT was diluted well beyond Avogadro's number and would not be expected to produce any detectable or recognisable symptomatology. Possible reasons why the remaining five homeopaths did not guess correctly are discussed. Conclusion: The results show that practising

homeopaths may be able to correctly identify a homeopathic medicine from the set of symptoms generated during an HPT. This suggests that such symptom pictures generated by taking an ultramolecular homeopathic medicine are recognisable and specific to the substance taken. Since identification of the remedy was based on past HPT information held in the materia medica, this demonstrates that HPT-generated symptom pictures are reproducible, thus validating the HPT methodology. These promising preliminary findings warrant replication; possible improvements to the trial design to be incorporated in future studies were identified.

Source:

[http://www.homeopathyjournal.net/article/S1475-4916\(13\)00160-4/pdf](http://www.homeopathyjournal.net/article/S1475-4916(13)00160-4/pdf)

59. **Lang CJ. The four medical theses of Samuel Hahnemann (1755-1843). J Med Biogr. 2016;24(2):243-52. doi: 10.1177/0967772014526347.** Abstract: Samuel Hahnemann, the founder of homoeopathy, over a period of 33 years wrote four medical theses at three different universities. The first, in 1779 at the University of Erlangen, Franconia, dealt with agents that allegedly induce spasms, granting him a MD degree. The second two theses in 1784 dealt with obstetrical matters and were imposed upon him by the University of Wittenberg, Saxony, for becoming a medical officer, a position he apparently aspired to mostly for financial reasons. The fourth thesis in 1812 at the University of Leipzig, Saxony, his most elaborate dissertation on a toxic

plant, white hellebore, served as a habilitation, allowing him to hold university lectures in order to disseminate his new ideas.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24677564>

60. **Vithoulkas G, Muresanu DF. Conscience and consciousness: a definition. J Med Life. 2014;7(1):104-8.** Abstract: While consciousness has been examined extensively in its different aspects, like in philosophy, psychiatry, neurophysiology, neuroplasticity, etc., conscience though it is an equal important aspect of the human existence, which remains an unknown to a great degree as an almost transcendental aspect of the human mind. It has not been examined as thoroughly as consciousness and largely remains a "terra incognita" for its neurophysiology, brain topography, etc. Conscience and consciousness are part of a system of information that governs our experience and decision making process. The intent of this paper is to define these terms, to discuss about consciousness from both neurological and quantum physics point of view, the relationship between the dynamics of consciousness and neuroplasticity and to highlight the relationship between conscience, stress and health.
Source:
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3956087/pdf/JMedLife-07-104.pdf>
61. **Rodríguez-van Lier ME, Simón LM, Gómez RE, Escalante IP. Intergrative health care method based on combined complementary medical practices: rehabilitative**

acupuncture, homeopathy and chiropractic.

Afr J Tradit Complement Altern

Med. 2013;11(1):180-6. Background: There

are various models of health care, such as the epidemiological, psychosocial, sociological, economic, systemic of Neuman, cognitive medicine or ecological, ayurvedic, supraparadigmatic among others. All of them are seeking to combine one or more elements to integrate a model of health care. The article presents a systemic approach to health care with complementary medicines such as rehabilitative acupuncture, homeopathy and chiropractic through the application of a method of holistic care and integrated approach. Materials and methods: There was a participatory action research in January 2012 to January 2013, with a comprehensive approach in 64 patients using the clinical method. We included the environmental aspects, biological, emotional, and behavioral to identify, recognize and integrate the form of manifestation of the disease. Later, it was ordered in a coherent way the etiologic factors, precipitating factors and identified the vulnerability of the patients as well as the structural alterations, classifying them in immediate, mediate and late. Referred to the three disciplines: rehabilitative acupuncture, homeopathy and chiropractic to be seen doing references and against-references between them, evaluating the current state of health and each meeting by noting the clinical and behavioral changes submitted and thus the area of attention to which would be forwarded to continue their treatment. Results: 64 patients rotated by

the 3 areas taking an average of 30 meetings with rehabilitative acupuncture, 12 with homeopathy and 10 with chiropractic. The changes were submitted clinical attitudinal, behavioral, clinical and organic. Conclusions: The model of care was multifaceted and interdisciplinary with a therapeutic approach of individualization and a holistic view to carry out a comprehensive diagnosis and provide quality health care to the population.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3957263/pdf/AJT1101-0180.pdf>

62. **Grimaldi-Bensouda L, Bégaud B, Rossignol M, Avouac B, Lert F, Rouillon F, Bénichou J, Massol J, Duru G, Magnier AM, Abenhaim L, Guillemot D.** Management of upper respiratory tract infections by different medical practices, including homeopathy, and consumption of antibiotics in primary care: the EPI3 cohort study in France 2007-2008. **PLoS One. 2014;9(3):e89990. doi: 10.1371/journal.pone.0089990.**

Background: Prescribing of antibiotics for upper respiratory tract infections (URTI) varies substantially in primary care. Objectives: To describe and compare antibiotic and antipyretic/anti-inflammatory drugs use, URTI symptoms' resolution and occurrence of potentially-associated infections in patients seeking care from general practitioners (GPs) who exclusively prescribe conventional medications (GP-CM), regularly prescribe homeopathy within a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). Method: The EPI3 survey was a nationwide population-based

study of a representative sample of 825 GPs and their patients in France (2007-2008). GP recruitment was stratified by self-declared homeopathic prescribing preferences. Adults and children with confirmed URTI were asked to participate in a standardized telephone interview at inclusion, one-, three- and twelve-month follow up. Study outcomes included medication consumption, URTI symptoms' resolution and potentially-associated infections (sinusitis or otitis media/externa) as reported by patients. Analyses included calibration to account for non-respondents and groups were compared using multivariate analyses adjusting for baseline differences with a propensity score. Results: 518 adults and children with URTI (79.3% rhinopharyngitis) were included (36.9% response rate comparable between groups). As opposed to GP-CM patients, patients in the GP-Ho group showed significantly lower consumption of antibiotics (Odds ratio (OR)=0.43, 95% confidence interval (CI): 0.27-0.68) and antipyretic/anti-inflammatory drugs (OR=0.54, 95% CI: 0.38-0.76) with similar evolution in related symptoms (OR=1.16, 95% CI: 0.64-2.10). An excess of potentially-associated infections (OR=1.70, 95% CI: 0.90-3.20) was observed in the GP-Ho group (not statistically significant). No difference was found between GP-CM and GP-Mx patients. Conclusion: Patients who chose to consult GPs certified in homeopathy used less antibiotics and antipyretic/anti-inflammatory drugs for URTI than those seen by GPs prescribing conventional medications. No difference was observed in patients

consulting GPs within mixed-practice. A non-statistically significant excess was estimated through modelling for associated infections in the GP-Ho group and needs to be further studied.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3960096/pdf/pone.0089990.pdf>

63. **Gaitan-Sierra C, Hyland ME. Common Factor Mechanisms in Clinical Practice and Their Relationship with Outcome. *Clin Psychol Psychother.* 2015;22(3):258-66. doi: 10.1002/cpp.1894.** Abstract: This study investigates three common factor mechanisms that could affect outcome in clinical practice: response expectancy, the affective expectation model and motivational concordance. Clients attending a gestalt therapy clinic (30 clients), a sophrology (therapeutic technique) clinic (33 clients) and a homeopathy clinic (31 clients) completed measures of expectancy and the Positive Affect and Negative Affect Schedule (PANAS) before their first session. After 1 month, they completed PANAS and measures of intrinsic motivation, perceived effort and empowerment. Expectancy was not associated with better outcome and was no different between treatments. Although some of the 54 clients who endorsed highest expectations showed substantial improvement, others did not: 19 had no change or deteriorated in positive affect, and 18 had the same result for negative affect. Intrinsic motivation independently predicted changes in negative affect ($\beta = -0.23$). Intrinsic motivation ($\beta = 0.24$), effort ($\beta = 0.23$) and empowerment ($\beta = 0.20$)

independently predicted positive affect change. Expectancy ($\beta = -0.17$) negatively affected changes in positive affect. Clients found gestalt and sophrology to be more intrinsically motivating, empowering and effortful compared with homeopathy. Greater improvement in mood was found for sophrology and gestalt than for homeopathy clients. These findings are inconsistent with response expectancy as a common factor mechanism in clinical practice. The results support motivational concordance (outcome influenced by the intrinsic enjoyment of the therapy) and the affective expectation model (high expectations can lead for some clients to worse outcome). When expectancy correlates with outcome in some other studies, this may be due to confound between expectancy and intrinsic enjoyment. Key practitioner message: Common factors play an important role in outcome. Intrinsic enjoyment of a therapeutic treatment is associated with better outcome. Active engagement with a therapeutic treatment improves outcome. Unrealistic expectations about a therapeutic treatment can have a negative impact on outcome.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24634051>

64. **Koehl B, Muenstedt K, Micke O, Muecke R, Buentzel J, Stoll C, Prott FJ, Dennert G, Senf B, Huebner J. Survey of German non-medical practitioners regarding complementary and alternative medicine in oncology. *Oncol Res Treat.* 2014;37(1-2):49-53. doi: 10.1159/000358158. Background: In**

total, 40-70% of cancer patients use complementary or alternative medicine (CAM). Many of them ask for advice from non-medical practitioners (NMPs). Our aim was to investigate the attitude of NMPs regarding their treatments for cancer patients. Methods: A survey was performed on members of NMP associations, using an online questionnaire on diagnosis and treatment, goals for using CAM, communication with the oncologist, and sources of information. Results: Of the 1,500 members of the NMP associations, 299 took part. The treatments were found to be heterogeneous. Homeopathy is used by 45% of the NMPs; 10% believe it to be a treatment directly against cancer. Herbal therapy, vitamins, orthomolecular medicine, ordinal therapy, mistletoe preparations, acupuncture, and cancer diets are used by more than 10% of the NMPs. None of the treatments is discussed with the respective physician on a regular basis. Conclusions: Many therapies provided by NMPs are biologically based and therefore may interfere with conventional cancer therapy. Thus, patients are at risk of interactions, especially as most NMPs do not adjust their therapies to those of the oncologist. Moreover, risks may arise from these CAM methods as NMPs partly believe them to be useful anticancer treatments. This may lead to the delay or even omission of effective therapies.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24613909>

65. **Schmidt-Weitmann S, Jenny K, Neuhaus Bühler R, Saller R, Brockes C. Medical online consultation service in CAM at the University Hospital Zurich. *Forsch Komplementmed*. 2014;21(1):19-24. doi: 10.1159/000358502.** Background: The University Hospital Zurich offers medical online consultation services in individual health concerns. We examined the need for users' information in the field of CAM. For this purpose, the content of the questions, the users' profiles, and the online responses of the physicians were analyzed. Methods: The retrospective study analyzed 154 (1.3%) out of 11,827 questions and responses, selected by a literature-based keyword list between 2006 and 2007. They were evaluated by means of an inductive category system described by Mayring using a professional text analysis program (MAXQDA). Frequencies and mean values of the categories were statistically determined. Results: Users (aged 39.2 ± 16 , females 61%) asked questions, which were in 73% allocated to herbal medicine, 7% to homeopathy, and 2% to acupuncture. The questions referred to medical fields, such as gynecology (18%), dermatology (13%), psychiatry (11%), and oncology (8%). One third of the responses provided detailed information about herbal treatment options. Conclusions: The email-based online consultation service was used as a source of medical information in order to get more professional consultation in the field of CAM. Future scientific evaluation

should investigate if online consultation services which are embedded in an environment of highly qualified health professionals may contribute to a better health literacy and empowerment of the patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24603626>

66. **Schmacke N, Müller V, Stamer M. What is it about homeopathy that patients value? and what can family medicine learn from this? *Qual Prim Care*. 2014;22(1):17-24.** Background: Homeopathy is one of the most frequently used areas of complementary and alternative medicine (CAM). Previous research has focused in particular on the pharmacological effectiveness of homeopathy. There is intense discussion among German family medical practitioners as to whether family medicine should adopt elements of homeopathy because of the popularity of this treatment method. Aim: For the first time in Germany, patients with chronic conditions were asked about their views on the medical care provided by homeopathic medical practitioners. Methods: The survey used questionnaire-based, semi-structured expert interviews, the contents of which were then analysed and summarised. Results: A total of 21 women and five men aged from 29 to 75 years were surveyed. The 'fit' between therapist and patient proved to be particularly important. Both the initial homeopathic consultation and the process of searching for the appropriate medication were seen by patients as confidence-inspiring

confirmations of the validity of homeopathic therapy which they considered desirable in this personalised form. **CONCLUSION:** The possible adoption by family medicine of elements of homeopathy may be seen as controversial, but this study again indicates the vital importance of successful communication to ensure a sustainable doctor-patient relationship. Advances in this sector not only require continuous efforts in the areas of medical training and professional development, but also touch on basic questions relating to the development of effective medical care, such as those currently being discussed in the context of the 'patient-centred medical home'.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24589147>

67. **Lehmann B, Krémer B, Werwick K, Herrmann M. Homeopathy as elective in undergraduate medical education--an opportunity for teaching professional core skills. GMS Z Med Ausbild. 2014;31(1):Doc7. doi: 10.3205/zma000899.** Aim: The evaluation of medical students' perceptions regarding an elective study course in Homeopathy in which small groups have participated annually for six years, at the Institute for General Practice and Family Medicine at the Otto Von Guericke University, Magdeburg. The course was assessed in terms of concept, delivery, and influence on students' professional development. Methodology: Since the autumn term of 2008/09, three group discussions have been conducted with thirty of the course participants (3 total electives).

These discussions were semi-structured and guided by central topics; the analysis was qualitative and guided by content. Results: The overall concept and implementation of the course were very successful. The main learning themes, that is, an emphasis on a more holistic and individual view of patients and the importance of a cooperative partnership between doctor and patient, were positively rated, regardless of the students' attitudes towards homeopathy. Their assessment was based on their previous experience and a comparison with conventional medical education. Conclusion: Homeopathy as an elective subject is not only useful for acquiring specific knowledge in integrative medicine, but also important as a means of developing physicians' core skills that are often not well considered in conventional medical education.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3935168/>

68. **Thanner M, Nagel E, Loss J. Complementary and alternative medicine in the German outpatient setting: extent, structure and reasons for provision. Gesundheitswesen. 2014;76(11):715-21. doi: 10.1055/s-0033-1364013.** Background: Research on complementary and alternative medicine (CAM) has mainly focused on CAM utilisation by patients. Fewer studies have analysed extent and structure of CAM provision or the reasons why physicians offer CAM as a therapeutic option in the outpatient setting. Methods: A standardised questionnaire was developed addressing reasons and patterns of CAM provision. The

questionnaire was sent by post to 2,396 general practitioners and specialists in 9 selected German districts. 553 physicians participated in the survey (23%). Results: 63% of the respondents (n=350) answered that they had provided some sort of CAM to their patients within a period of 12 months preceding the study. The most frequently provided methods were acupuncture/traditional Chinese medicine, herbal remedies and homeopathy. In the sample, 90% of the orthopaedists were CAM providers, the highest rate among the participating disciplines. Several reasons for offering CAM were identified: conviction of therapeutic effectiveness regarding the patient's situation (68%), aspects of therapeutic freedom (47%) or less harmful side effects than conventional therapies (34%). 6% provide CAM for monetary reasons. Conclusion: Findings suggest that the provision of CAM is widespread in the German outpatient setting. However, it has to be taken into account that a selection bias may apply which may lead to an overestimation of CAM provision. Doctors' reasons to offer CAM are manifold; therapeutic reasons seem to outweigh economic motives.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24566840>

69. Buhling KJ, Daniels BV, Studnitz FS, Eulenburg C, Mueck AO. The use of complementary and alternative medicine by women transitioning through menopause in Germany: results of a survey of women aged 45-60 years. Complement Ther

Med. 2014;22(1):94-8.

doi:

10.1016/j.ctim.2013.12.004. Objectives: To describe prevalence rates of complementary and alternative medicine therapies (CAM) for the relief of menopausal complaints among German women. Furthermore, to investigate the perceived effectiveness of these therapies. Design: A self-administered questionnaire was sent to 9785 randomly selected women in Germany aged between 45 and 60 years. Results: A total of 1893 (19.3%) questionnaires have been sent back. The mean age of all participants was 52.6±4.3 years. 81% (n=1517) of the responding women stated that they had experienced menopausal complaints at least once. Symptoms ranged from vasomotor symptoms, including hot flushes and night sweats, in 71.2% of cases, to bladder problems in 42.7%. The average symptom score (MRS II total score, range 1-44) among the respondents was 12.76±9.6. More than half (56%; n=1049/1872) of the responding women had used some form of therapy to alleviate their symptoms at least once. The majority of women undertaking a therapy (64.8%; n=679/1049) had used only CAM interventions (either one or more type of CAM), 14.2% (n=149) had used hormone replacement therapy (HRT) only, while 21.1% (n=221/1049) had tried both CAM and HRT. Popular CAM interventions by the respondents were an alteration of lifestyle (28.7%), St. John's wort (18.3%) and homoeopathy (14.9%). An alteration in lifestyle was rated as the most effective CAM treatment with 84.9% (n=457). Other treatments like hormone yoga (79.2%; n=42),

homoeopathy (73.7%; n=205) and TCM (59.1%; n=94) were also perceived to be effective. Phytoestrogens were rated as the most ineffective (45.5%; n=50). Conclusion: CAM interventions to alleviate menopausal complaints are popular among German women, with 48.2% (n=900/1872) of respondents reporting having used CAM either alone or in combination with HRT. However, the users rated the effects of CAM differently, with some reporting CAM to be highly effective, while others indicate lower effectiveness. Nevertheless, women with a significantly higher symptom scoring tend to use both CAM and a conventional therapy (HRT).

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24559823>

70. **Saghatchian M, Bihan C, Chenailier C, Mazouni C, Dauchy S, Delalogue S.** Exploring frontiers: use of complementary and alternative medicine among patients with early-stage breast cancer. **Breast.** 2014;23(3):279-85. doi: 10.1016/j.breast.2014.01.009. Introduction: Complementary and alternative medicine (CAM) is increasingly popular among cancer patients but can interfere with conventional therapies; timely data are needed to adapt current patients' care. Materials and methods: This transversal, prospective study evaluated the use of CAM among patients receiving adjuvant chemotherapy or endocrine therapy for early stage breast cancer. We assessed the prevalence of use, the motivations and predictive factors for use, as well as patients' information needs

over a three months period. Results: 69/184 responders (37.5%) reported using at least one CAM. CAM use was associated with younger age ($p = 0.03$) and higher education level ($p < 0.001$). Pharmacological substances (e.g., homeopathy, phytotherapy) were the most commonly used (79.7%) before physical means (42%) and dietary methods (31.9%). A total of 65.8% of users felt that these treatments have demonstrated evidence of efficacy and 74.8% that they were not associated with side effects. The main goal for use was improvement of treatment-related symptoms (28.3%); secondary goal was increasing the general health status (20.5%). Patients reported high needs for information on CAMs. CAM use was associated with mild differences in secondary adverse events reported by patients. Conclusion: Breast cancer patients are common users of CAM concomitantly to their conventional cancer treatments and should be investigated regarding their current consumption of CAM. Furthermore, they need advice evidence-based data on these treatments and potential interactions with on-going treatments.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24529905>

71. **Stewart D, Pallivalappila AR, Shetty A, Pande B, McLay JS.** Healthcare professional views and experiences of complementary and alternative therapies in obstetric practice in North East Scotland: a prospective questionnaire survey. **BJOG.** 2014;121(8):1015-9. doi: 10.1111/1471-0528.12618. Objective: The

aim of this study was to investigate the use of complementary and alternative medicines (CAMs) therapy by UK healthcare professionals involved in the care of pregnant women, and to identify key predictors of use. Design: A prospective survey. Setting: Maternity services in Grampian, North East Scotland. Sample: All healthcare professionals (135) involved in the care of pregnant women (midwives, obstetricians, anaesthetists). Methods: Questionnaire development, piloting, and distribution. Descriptive and inferential statistical analysis. Results: A response rate of 87% was achieved. A third of respondents (32.5%) had recommended (prescribed, referred, or advised) the use of CAMs to pregnant women. The most frequently recommended CAMs modalities were: vitamins and minerals (excluding folic acid) (55%); massage (53%); homeopathy (50%); acupuncture (32%); yoga (32%); reflexology (26%); aromatherapy (24%); and herbal medicine (21%). Although univariate analysis identified that those who recommended CAMs were significantly more likely to be midwives who had been in post for more than 5 years, had received training in CAMs, were interested in CAMs, and were themselves users of CAMs, the only variable retained in bivariate logistic regression was 'personal use of CAM', with an odds ratio of 8.26 (95% CI 3.09-22.05; $P < 0.001$). Conclusion: Despite the lack of safety or efficacy data, a wide variety of CAM therapies are recommended to pregnant women by approximately a third of healthcare professionals, with those recommending the

use of CAMs being eight times more likely to be personal CAM users.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24512627>

72. Saha S, Koley M, Ganguly S, Rath P, Roy Chowdhury P, Hossain SI. Developing the criteria for evaluating quality of individualization in homeopathic clinical trial reporting: a preliminary study. J Integr Med. 2014;12(1):13-9. doi: 10.1016/S2095-4964(14)60009-1. Objective: This study describes the development of a preliminary version of an instrument that attempts to assess the quality of reports of individualized homeopathic prescriptions in clinical trials and observational studies. Methods: A multidisciplinary panel of 15 judges produced an initial version of the instrument through iterative Delphi rounds and pilot-tested the instrument on five clinical trials. Later they assessed, under blind conditions, the individualization quality of 40 randomly-selected research reports. The final version of the instrument included six criteria. These items were scored consistently by all the raters regardless of background. Results: The instrument appeared to have adequate face and content validity, acceptable internal consistency or reliability (Cronbach's α 0.606 - 0.725), significant discriminant validity ($F = 398.7$; $P < 0.0001$), moderate interrater reliability (Fleiss κ 0.533), agreeable test-retest reliability (Cohen's κ 0.765 - 0.934), moderate sensitivity (0.4; 95% confidence interval 0.253-0.566), and high specificity (1.0; 95% confidence interval 0.891-1.000). Conclusion: The initial data suggest that this

instrument may be a promising systematic tool amendable for further development.

Source:[http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964\(14\)60009-1.pdf](http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964(14)60009-1.pdf)

73. **Saha S, Koley M, Arya JS, Choubey G, Ghosh S, Ganguly S, Ghosh A, Saha S, Mundle M.** Medicine prescription practices of homeopathic undergraduate students in West Bengal, India. **J Integr Med.** 2014;12(1):7-12. doi: 10.1016/S2095-4964(14)60004-2. Objective: To our knowledge, prescription of homeopathic medicines by homeopathic undergraduate students has not been studied before though it may possess serious implications. We aimed to determine the practice and attitudes of prescription by homeopathic undergraduate students. Methods: A cross-sectional study was carried out involving all the students from four government homeopathic schools of West Bengal, India. Ethical requirements were ensured and data were collected using self-administered questionnaires. Chi-square tests and logistic univariate regression analyses were performed to identify associations and differences. Results: A total of 328 forms were completed. Of these, 264 (80.5%) homeopathic undergraduate students admitted of prescribing medicines independently and most (40.5%) said that they did this 2-3 times a year. The most common reasons for this were 'urgency of the problem' (35.2%), 'previous experience with same kind of illness' (31.8%), and 'the problem too trivial to go to a doctor' (25.8%). About 63.4% of the students thought that it

was alright to independently diagnose an illness while 51.2% thought that it was alright for them to prescribe medicines to others. Common conditions encountered were fever, indigestion, and injury. Students who prescribed medicines were more likely to belong to Calcutta Homeopathic Medical College and Hospital (odds ratio = 5.8; 95% confidence interval 2.247-14.972). Prescription by students gradually increased with academic years of homeopathic schools. Many students thought it was alright for students to diagnose and treat illnesses. Conclusion: Prescription of medicines by homeopathic undergraduate students is quite rampant and corrective measures are warranted.

Source:[http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964\(14\)60004-2.pdf](http://www.jcimjournal.com/articles/publishArticles/pdf/S2095-4964(14)60004-2.pdf)

74. **Lert F, Grimaldi-Bensouda L, Rouillon F, Massol J, Guillemot D, Avouac B, Duru G, Magnier AM, Rossignol M, Abenhaim L, Begaud B; EPI3-LA-SER Group.** Characteristics of patients consulting their regular primary care physician according to their prescribing preferences for homeopathy and complementary medicine. **Homeopathy.** 2014;103(1):51-7. doi: 10.1016/j.homp.2013.09.001. Background: Homeopathic care has not been well documented in terms of its impact on patients' utilization of drugs or other complementary and alternative medicines (CAM). The objective of this study was to describe and compare patients who visit physicians in general practice (GPs) who prescribe only conventional medicines (GP-

CM), regularly prescribe homeopathy within a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). Material and methods: The EPI3-LASER study was a nationwide observational survey of a representative sample of GPs and their patients from across France. Physicians recorded their diagnoses and prescriptions on participating patients who completed a self-questionnaire on socio-demographics, lifestyle, quality of life Short Form 12 (SF-12) and the complementary and alternative medicine beliefs inventory (CAMBI). Results: A total of 6379 patients (participation rate 73.1%) recruited from 804 GP practices participated in this survey. Patients attending a GP-Ho were slightly more often female with higher education than in the GP-CM group and had markedly healthier lifestyle. They did not differ greatly in their comorbidities or quality of life but exhibited large differences in their beliefs in holistic medicine and natural treatments, and in their attitude toward participating to their own care. Similar but less striking observations were made in patients of the GP-Mx group. Conclusion: Patients seeking care with a homeopathic GP did not differ greatly in their socio-demographic characteristics but more so by their healthier lifestyle and positive attitude toward CAM. Further research is needed to explore the directionality of those associations and to assess the potential economic benefits of homeopathic management in primary care.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24439455>

75. **Buchholzer ML, Werner C, Knoess W.** **Current concepts on integrative safety assessment of active substances of botanical, mineral or chemical origin in homeopathic medicinal products within the European regulatory framework. Regul Toxicol Pharmacol. 2014;68(2):193-200. doi: 10.1016/j.yrtph.2013.12.008.** Abstract: For active substances of botanical, mineral or chemical origin processed in homeopathic medicinal products for human use, the adequate safety principles as with other human medicinal products are applied in line with the European regulatory framework. In homeopathy, nonclinical safety assessment is facing a particular challenge because of a multitude and diversity of source materials used and due to rarely available toxicological data. Thus, current concepts applied by the national regulatory authority in Germany (BfArM) on integrative safety assessment of raw materials used in homeopathic medicinal products involve several evaluation approaches like the use of the Lowest Human Recommended Dose (LHRD), toxicological limit values, Threshold of Toxicological Concern (TTC), data from food regulation or the consideration of unavoidable environmental or dietary background exposure. This publication is intended to further develop and clarify the practical use of these assessment routes by exemplary application on selected homeopathic preparations. In conclusion, the different approaches are considered a very

useful scientific and simultaneously pragmatic procedure in differentiated risk assessment of homeopathic medicinal products. Overall, this paper aims to increase the visibility of the safety issues in homeopathy and to stimulate scientific discussion of worldwide existing regulatory concepts on homeopathic medicinal products.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24384395>

76. **Gruber M, Ben-Arye E, Kerem N, Cohen-Kerem R. Use of complementary alternative medicine in pediatric otolaryngology patients: a survey. Int J Pediatr Otorhinolaryngol. 2014;78(2):248-52. doi: 10.1016/j.ijporl.2013.11.016.** Objective: Limited data are available about complementary alternative medicine (CAM) use in children attending otolaryngology services. We investigated the pattern of CAM use among children and adolescents attending a pediatric otolaryngology clinic. Methods: A cross-sectional survey. Anonymous questionnaires were administered, prior to doctor's admission, to parents accompanying young patients attending the pediatric otolaryngology clinic. Parents were asked about their general attitude toward CAM and whether they had ever consulted or considered a consultation with a CAM therapist. Subsequently, CAM users were asked to provide details on CAM modalities used and on their overall satisfaction with CAM therapy. Results: Of 308 questionnaires administered, 294 parents responded (95% response rate).

Ninety-four parents (32%) reported considering CAM, or previous or current CAM use. Commonly used CAM treatments were acupuncture (44%), homeopathy (36%), and naturopathy (6.7%). CAM users assessed success rate as being: successful (37%), unsuccessful (24%) or undetermined (39%). Successful treatment was described in terms of cure, improvement and better awareness of the problem being addressed. In most cases parents stated that the primary physician was aware of CAM use by the child (74%). Conclusions: CAM plays a substantial role among parents of children referred to pediatric otolaryngology consultation. The otolaryngologist awareness of parents' preference and interest may contribute to decision making regarding pediatric patients' management. Further investigations regarding CAM are warranted and clinical collaboration with CAM therapists should be considered.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24332665>

77. **Gottschling S, Meyer S, Längler A, Scharifi G, Ebinger F, Gronwald B. Differences in use of complementary and alternative medicine between children and adolescents with cancer in Germany: a population based survey. Pediatr Blood Cancer. 2014;61(3):488-92. doi: 10.1002/pbc.24769.** Background: Use of complementary and alternative medicine (CAM) in children with cancer is common and probably increasing. However, data concerning differences between children and adolescents focusing on prevalence, reasons

for use/non-use, costs, adverse effects, and socio-demographic factors are lacking. Procedure: A population-based survey over a 1 year period with 497 participants was conducted. Results: Of the 457 respondents (92%) 322 were children and 135 adolescents (>16 years of age) with malignancies. 31% reported CAM use from the time when being diagnosed, compared to an overall lifetime prevalence rate of 41% before cancer diagnosis. Among CAM users the most prevalent therapies were homeopathy, massage, anthroposophic medicine, acupuncture, and Bach flowers. The main reasons for use were to reduce therapy-related side effects, to strengthen the immune system, to achieve physical stabilization and to increase healing chances. Socio-demographic factors associated with CAM use were higher parental education and higher family income. A majority of CAM users (97%) would recommend CAM use. Most users (78%) informed a physician about CAM use. Side effects were rarely reported (5%), minor and self-limiting. Conclusions: The high prevalence rates seem to represent the parental or patients needs for additional treatment perceived as successful and devoid of side-effects. Clinical care and the physician-patient relation would profit from an enhanced understanding of CAM and a greater candidness towards the parental needs. Safety and efficacy - especially of CAM with high prevalence rates - should be studied in rigorous basic and clinical research.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24038864>

78. Bonacchi A, Fazzi L, Toccafondi A, Cantore M, Mambrini A, Muraca MG, Banchelli G, Panella M, Focardi F, Calosi R, Di Costanzo F, Rosselli M, Miccinesi G. Use and perceived benefits of complementary therapies by cancer patients receiving conventional treatment in Italy. J Pain Symptom Manage. 2014;47(1):26-34. doi: 10.1016/j.jpainsymman.2013.03.014.

Context: In Italy, data regarding the use of complementary therapies (CTs) among patients with cancer are sparse and discordant. Objectives: The present study aimed to investigate the demographic and psychological characteristics of Italian cancer patients who use CTs and the perceived benefit of users. Methods: Eight hundred three patients from six Italian oncology departments were interviewed about CT use and completed two questionnaires to explore psychological distress and the resilience trait called sense of coherence (SOC). Patients included in the study had different primary tumor sites and were in different phases of the disease and care process. Results: At the time of measurement, 37.9% of patients were using one or more types of CTs. The most commonly used CTs were diets and dietary supplements (27.5%), herbs (10.8%), homeopathy (6.4%), and mind-body therapies (5.5%). The Italian context is characterized by a high percentage of patients who informed their physicians about CT use (66.3%) and who experienced benefits (89.6%); 75.2% of the patients had used CTs

in the past. Multivariate analysis revealed that young, female patients, who previously used complementary and alternative medicine in the past, appear more likely to use at least one type of CT in the present. Predictors of the use of CTs varied according to the type of CT. Among psychological factors, SOC was positively associated with both past and present CT use. Conclusion: Overall prevalence of CTs among Italian cancer patients is high and is in accordance with the European average. In addition to clinical and sociodemographic factors, the resilience trait SOC also was associated with CT use.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/23916679>

79. **Perry R, Dowrick C, Ernst E. Complementary medicine and general practice in an urban setting: a decade on. *Prim Health Care Res Dev.* 2014;15(3):262-7. doi:**

10.1017/S1463423613000182. Aim: To conduct a follow-up survey ascertaining changes in usage, referral rate, beliefs and attitudes towards complementary and alternative medicine (CAM) during the last decade. Background: In many countries, CAM use is reported to be substantial and increasing. Methods: A questionnaire was posted to all GPs registered with the Liverpool Primary Care Trust. Respondents were asked whether they treat, refer, endorse or discuss eight common CAM therapies and about their views on National Health Service (NHS) funding, effectiveness, CAM training needs and theoretical validity of each therapy. Comparisons were made

between these results and those collected in 1999. Findings: The response rate was low (32%) compared with the 1999 survey (52%). The main findings were similar to the most popular therapies still being acupuncture, hypnotherapy and chiropractic and the least being aromatherapy, reflexology and medical herbalism. GPs felt most comfortable with acupuncture, with greater belief in its theoretical validity, a greater desire for training and a greater support for acupuncture to receive NHS funding than for the other CAM therapies under question. Opinions about homeopathy had become less supportive. Overall, GPs were less likely to endorse CAMs than previously shown (38% versus 19%).

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/23574689>

80. **Koley M, Saha S, Arya JS, Choubey G, Ghosh A, Das KD, Ganguly S, Dey S, Saha S, Singh R, Bhattacharyya K, Ghosh S, Ali SS. Patients' preference for integrating homeopathy (PPIH) within the standard therapy settings in West Bengal, India: The part 1 (PPIH-1) study. *J Tradit Complement Med.* 2015;6(3):237-46. doi:**
10.1016/j.jtcme.2015.03.001. Abstract: There is lack of studies assessing the preference of Indian patients for integration of homeopathy into standard therapy settings. The objectives of this study were to examine the knowledge, attitudes, and practice of homeopathy among Indian patients already availing homeopathy treatment and its integration into mainstream healthcare. A

cross-sectional survey was conducted among adult patients attending the out-patients of the four government homeopathic hospitals in West Bengal, India. A self-administered 24-items questionnaire in local vernacular Bengali was developed and administered to the patients. A total of 1352 patients' responses were included in the current analysis. 40% patients thought that homeopathic medicines can be used along with standard therapy. 32.5% thought that homeopathic medicines might cause side effects, while only 13.3% believed that those might interact with other medications. Patients' knowledge ranged between 25.1 and 76.5% regarding regulations of practicing and safety of homeopathic medicine in India and abroad; while positive attitude towards the same ranged between 25.4 and 88.5%. 88.6% of the patients had favorable attitude toward integrated services. 68.2% of the patients used homeopathic medicines in any acute or chronic illness for themselves and 76.6% for their children. Preference for integrated services was significantly associated with better knowledge ($P = 0.002$), positive attitudes toward safety and regulations ($P < 0.0001$), and integration ($P < 0.0001$), but not with the level of practice ($P = 0.515$). A favorable attitude toward integrating homeopathy into conventional healthcare settings was obtained among the patients attending the homeopathic hospitals in West Bengal, India.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4936771/>

81. **Math SB, Moirangthem S, Kumar NC, Nirmala MC. Ethical and legal issues in cross-system practice in India: Past, present and future. Natl Med J India. 2015;28(6):295-9.** Abstract: Recent changes in policies allowing practitioners of Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) to integrate into the mainstream of healthcare and also allowing practitioners of Ayurveda and Homoeopathy to perform medical termination of pregnancy (MTP) under the proposed amendment to the MTP bill have brought crosssystem practice into the limelight. We evaluate cross-system practice from its legal and ethical perspectives. Across judgments, the judiciary has held that cross-system practice is a form of medical negligence; however, it is permitted only in those states where the concerned governments have authorized it by a general or special order. Further, though a state government may authorize an alternative medicine doctor to prescribe allopathic medicines (or vice versa), it does not condone the prescription of wrong medicines or wrong diagnosis. Courts have also stated that prescribing allopathic medicines and misrepresenting these as traditional medicines is an unfair trade practice and not explaining the side-effects of a prescribed allopathic medicine amounts to medical negligence. Finally, the Supreme Court has cautioned that employing traditional medical practitioners who do not possess the

required skill and competence to give allopathic treatment in hospitals and to let an emergency patient be treated by them is gross negligence. In the event of an unwanted outcome, the responsibility is completely on the hospital authorities. Therefore, there is an urgent need to abolish cross-system practice, invest in healthcare, and bring radical changes in health legislations to make right to healthcare a reality.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27294458>

82. **Saha S, Koley M, Saha S, Singh R, Hossain MM, Pramanik I. Obstetrics and gynecology outpatient scenario of an Indian homeopathic hospital: A prospective, research-targeted study. J Tradit Complement Med. 2015;6(2):168-71. doi: 10.1016/j.jtcme.2015.01.003.** Abstract: The authors aimed to document prescriptions and clinical outcomes in routine homeopathic practice to short list promising areas of targeted research and efficacy trials of homeopathy in obstetrics and gynecology (O&G). Three homeopathic physicians participated in methodical data collection over a 3-month period in the O&G outpatient setting of The Calcutta Homeopathic Medical College and Hospital, West Bengal, India. A specifically designed Excel spreadsheet was used to record data on consecutive appointments, including date, patient identity, socioeconomic status, place of abode, religion, medical condition/complaint, whether chronic/acute, new/follow-up case, patient-assessed

outcome (7-point Likert scale: -3 to +3), prescribed homeopathic medication, and whether other medication/s was being taken for the condition. These spreadsheets were submitted monthly for data synthesis and analysis. Data on 878 appointments (429 patients) were collected, of which 61% were positive, 20.8% negative, and 18.2% showed no change. Chronic conditions (93.2%) were chiefly encountered. A total of 434 medical conditions and 52 varieties were reported overall. The most frequently treated conditions were leucorrhea (20.5%), irregular menses (13.3%), dysmenorrhea (10%), menorrhagia (7.5%), and hypomenorrhea (6.3%). Strongly positive outcomes (+3/+2) were mostly recorded in oligomenorrhea (41.7%), leucorrhea (34.1%), polycystic ovary (33.3%), dysmenorrhea (28%), and irregular menses (22.2%). Individualized prescriptions predominated (95.6%). A total of 122 different medicines were prescribed in decimal (2.9%), centesimal (87.9%), and 50 millesimal potencies (4.9%). Mother tinctures and placebo were prescribed in 3.4% and 30.4% instances, respectively. Several instances of medicine-condition pairings were detected. This systematic recording cataloged the frequency and success rate of treating O&G conditions using homeopathy.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4833458/>

83. **Bohl JB, Bracconi M, Herve C, Pirnay P. To finish with fear of dental care. Odontostomatol Trop. 2015;38(150):58-60.** Abstract: The patient facing the dentist knows fear, anxiety. The symbolism of the

mouth and teeth from childhood is an entirely specific nature of the human body. The terrifying image of dental treatment and dentist that has long been stigmatized through painting, literature, theater and cinema can change today. Many therapeutic options to the management of anxiety in dental phobia; anesthesia, conscious sedation, combined with a soothing cabinet, a caring dentist, targeted use of medications or milder alternative methods; homeopathy, herbal medicine, acupuncture, psychotherapy, places the patient's interests at the center of the caregiving relationship. But this treatment panel is also offered him the difficulty of the choice. This exercise without systematization, according to the patient with competence and kindness. Some patients may be sent or processed in collaboration with other health professionals.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26934774>

84. **Koley M, Saha S, Ghosh S, Nag G, Kundu M, Mondal R, Purkait R, Patra S, Ali SS. Patient-Assessed Chronic Illness Care (PACIC) scenario in an Indian homeopathic hospital. J Tradit Complement Med. 2015;6(1):72-7. doi: 10.1016/j.jtcme.2014.11.020.** Abstract: Homeopathy research has focused on chronic conditions; however, the extent to which current homeopathic care is compliant with the Chronic Care Model (CCM) has been sparsely shown. As the Bengali Patient-Assessed Chronic Illness Care (PACIC)-20 was not available, the English questionnaire was

translated and evaluated in a government homeopathic hospital in West Bengal, India. The translation was done in six steps, and approved by an expert committee. Face validity was tested by 15 people for comprehension. Test/retest reliability (reproducibility) was tested on 30 patients with chronic conditions. Internal consistency was tested in 377 patients suffering from various chronic conditions. The questionnaire showed acceptable test/retest reliability [intraclass correlation coefficient (ICC) 0.57-0.75; positive to strong positive correlations; $p < 0.0001$] for all domains and the total score, strong internal consistency (Cronbach's $\alpha = 0.86$ overall and 0.65-0.82 for individual subscales), and large responsiveness (1.11). The overall mean score percentage seemed to be moderate at $69.5 \pm 8.8\%$. Gender and presence of chronic conditions did not seem to vary significantly with PACIC-20 subscale scores ($p > 0.05$); however, monthly household income had a significant influence ($p < 0.05$) on the subscales except for "delivery system or practice design." Overall, chronic illness care appeared to be quite promising and CCM-compliant. The psychometric properties of the Bengali PACIC-20 were satisfactory, rendering it a valid and reliable instrument for assessing chronic illness care among the patients attending a homeopathic hospital.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4765762/>

85. **Salatino S, Gray A. Integrative management of pediatric tonsillopharyngitis: An international survey. Complement Ther Clin**

Pract. 2016;22:29-32.

doi:

10.1016/j.ctcp.2015.11.003. Abstract: This survey investigated the management of pediatric tonsillopharyngitis, with a focus on natural remedies. 138 pediatricians, general practitioners and ear-nose-throat (ENT) specialists in 7 countries were surveyed by a dedicated questionnaire. A rapid strept test (RST) to diagnose acute tonsillopharyngitis was routinely used by 56/138 participants (41%). The use of RST allowed 200 diagnosis/year compared with 125 diagnosis/year for clinicians who did not use this tool. Homeopathy remedies were prescribed as a supportive therapy by 62% of participants (85/138). Among different homeopathic remedies, SilAtro-5-90 was the most frequently prescribed (53/138, 38%). In the chronic setting, homeopathy was suggested as a supportive therapy by 82/138 participants (59%), phytotherapy by 39 (28%) and vitamins/nutritional supplementation by 51 (37%). The management of tonsillopharyngitis in pediatric patients still remains empiric. Natural remedies, and homeopathy in particular, are used in the management of URTIs. An integrative approach to these infections may help reduce excessive antibiotic prescription.

Source:

[http://www.ctcpjournal.com/article/S1744-3881\(15\)30016-5/pdf](http://www.ctcpjournal.com/article/S1744-3881(15)30016-5/pdf)

86. **Busch J, Knödler M, Kühn M, Lipinski A, Steinhoff B.** The heavy metals cadmium, lead and mercury in raw materials of animal origin: evaluation of data from practice. **Pharmeur Bio Sci Notes.** 2015;2015:150-65. Abstract: Raw materials from animal origin

are widely used in homoeopathy. Due to the lack of dedicated limits, the quality requirements for herbal drugs of the European Pharmacopoeia (Ph. Eur.) and/or the German Homoeopathic Pharmacopoeia (Homöopathisches Arzneibuch, HAB), including limits for heavy metals such as cadmium, lead and mercury, have been applied. A recent database evaluation shows that for some raw materials of animal origin the Ph. Eur. limits for herbal drugs cannot be met in practice. For this reason proposals for new limits for cadmium, lead and mercury are made based on recent experiences from the companies' daily practice. These specific limits are suggested to be included in the individual monographs of the Ph. Eur. or at least the German HAB, respectively, for *Ambra grisea*, *Euspongia officinalis*, *Formica rufa* and *Sepia officinalis*.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26830164>

87. **Eizayaga JE, Pozzi MI, Canan MC, Saravia L.** Prevalence and likelihood ratio of symptoms in patients with good therapeutic response to *Lycopodium clavatum*. A retrospective study. **Homeopathy.** 2016;105(1):78-83. doi: **10.1016/j.homp.2015.09.002.** Background: Assessment of the likelihood ratio (LR) of symptoms has been proposed as a rational means for detecting indicators to homeopathic medicines. Aims: To investigate the prevalence and LR of symptoms commonly attributed to the homeopathic medicine *Lycopodium clavatum* (Lyc). Secondly, to answer the question if experienced homeopaths could intuitively

infer which the main symptoms of this medicine are. Methods: The presence of 35 selected symptoms, prescribed medicines and therapeutic response were assessed retrospectively. The symptoms' prevalence in the Lyc responding population and the LR of the symptoms compared to their prevalence in the remainder of the population were calculated. Results: Two hundred and two Lyc and 550 non Lyc cases (total 752) were included for analysis. Twenty-two symptoms were confirmed as pertaining to Lyc's semiology (prevalence %; LR): contemptuous (3.3; 6.7), urinary stones history (2.7; 5.4), egotism (5.6; 3.6), dictatorial (33.3; 3.4), haughty (8.7; 3.3), sleeps on abdomen (3.3; 3.3), intolerance to clothing in abdomen (12.0; 3.1), reproaches (4.0; 3.0), helplessness (24.0; 2.7), fear of failure (10.7; 2.6), irritability on waking in the morning (16.7; 2.5), constipation alternating with diarrhea (8.7; 2.5), intolerant to contradiction (59.3; 2.3), want of self confidence (30.0; 2.4), abdominal distension after eating (23.3; 2.1), ailments from anticipation (32.0; 1.9), irritability before menses (23.3; 1.8), conscientious (26.0; 1.6), desire of sweets (52.0; 1.6), desire of chocolate (16.7; 1.6), lack of vital heat (41.3; 1.3), and flatterer (1.3; ∞). Surveyed homeopaths' intuitive inferences correlated well with symptoms' prevalence but not with their LR. Conclusions: Lycopodium's main symptoms are well known by homeopaths, but their knowledge correlates well with the symptoms' prevalence and not with their LR. Retrospective assessment of prevalence and LR of symptoms in good responders might be

a means for better selection of symptoms for prospective studies.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828001>

88. **Jadhav HP, Chaudhari GG, Patil DD, Jadhav RB, Reddy NM, Shirkhedkar AA, Goyal SN, Patil CR. Standardization of homeopathic mother tincture of *Toxicodendron pubescens* and correlation of its flavonoid markers with the biological activity. Homeopathy. 2016;105(1):48-54. doi: 10.1016/j.homp.2015.08.003.**

Background: Standardization and quality control of homeopathic drugs is very challenging. As mother tinctures are derived from complex natural resources, there is a need of systematic evaluation of chemical markers which correlate with the proposed biological activities of mother tinctures. Methods: In present study, High-Performance Thin-Layer Chromatography (HPTLC) standardization method of homeopathic mother tinctures of *Toxicodendron pubescens* using quercitrin and rutin as chemical markers is validated and correlations of content of these markers with its anti-inflammatory effects are established. For HPTLC analysis, precoated silica gel plates were used as stationary phase. Two flavonoids, namely quercitrin and rutin were used as markers. Separation was achieved using methylene chloride:methanol:water:glacial acetic acid (15:1.5:1:8 v/v/v) as mobile phase. The developed plates were scanned at 365 nm. Results: It was observed that quercitrin (Rf value 0.63) and Rutin (Rf value 0.41) are well

resolved. The minimum detectable concentrations for quercitrin and rutin were 5 ng/spot. The linearity range was between 100 and 2000 ng/spot for both the markers. Subsequently, anti-inflammatory activity of these formulations was determined against carrageenan-induced paw edema in rats, pain threshold determined by electronic Von-Frey apparatus and paw withdrawal latency (PWL) on hot-plate. All the tested formulations of Rhus Tox showed anti-inflammatory and analgesic activity against carrageenan induced paw edema in rats. Quantitative correlation between the content of markers and anti-inflammatory activity of mother tinctures was established. Results: Anti-inflammatory effect as well as effect on paw withdrawal and pain threshold, at third hour after carrageenan injection, correlated with quercitrin and rutin content in the respective formulations. Conclusions: This study validates a quantitative HPTLC method for standardization of homeopathic mother tincture of Rhus Tox and establishes quercitrin and rutin as markers corresponding its biological activity. Contents of quercitrin and rutin in T. pubescens mother tincture correlates with its anti-inflammatory and analgesic actions and the validated HPTLC method can be used in standardization of homeopathic mother tincture of T. pubescens.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26827997>

89. **Bermudez J, Davies C, Simonazzi A, Real JP, Palma S.** Current drug therapy and pharmaceutical challenges for Chagas

disease. **Acta Trop.** 2016;156:1-16. doi: **10.1016/j.actatropica.2015.12.017.**

Abstract: One of the most significant health problems in the American continent in terms of human health, and socioeconomic impact is Chagas disease, caused by the protozoan parasite *Trypanosoma cruzi*. Infection was originally transmitted by reduviid insects, congenitally from mother to fetus, and by oral ingestion in sylvatic/rural environments, but blood transfusions, organ transplants, laboratory accidents, and sharing of contaminated syringes also contribute to modern day transmission. Likewise, Chagas disease used to be endemic from Northern Mexico to Argentina, but migrations have earned it global. The parasite has a complex life cycle, infecting different species, and invading a variety of cells - including muscle and nerve cells of the heart and gastrointestinal tract - in the mammalian host. Human infection outcome is a potentially fatal cardiomyopathy, and gastrointestinal tract lesions. In absence of a vaccine, vector control and treatment of patients are the only tools to control the disease. Unfortunately, the only drugs now available for Chagas' disease, Nifurtimox and Benznidazole, are relatively toxic for adult patients, and require prolonged administration. Benznidazole is the first choice for Chagas disease treatment due to its lower side effects than Nifurtimox. However, different strategies are being sought to overcome Benznidazole's toxicity including shorter or intermittent administration schedules-either alone or in combination with other drugs. In addition, a

long list of compounds has shown trypanocidal activity, ranging from natural products to specially designed molecules, repurposing drugs commercialized to treat other maladies, and homeopathy. In the present review, we will briefly summarize the upturns of current treatment of Chagas disease, discuss the increment on research and scientific publications about this topic, and give an overview of the state-of-the-art research aiming to produce an alternative medication to treat *T. cruzi* infection.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26747009>

90. **Samal J. Role of AYUSH workforce, therapeutics, and principles in health care delivery with special reference to National Rural Health Mission. *Ayu.* 2015;36(1):5-8. doi: 10.4103/0974-8520.169010.** Abstract: Decades back AYUSH systems of medicine were limited to their own field with few exceptions in some states as health in India is a state issue. This took a reverse turn after the initiation of National Rural Health Mission (NRHM) in 2005 which brought the concept of "Mainstreaming of AYUSH and Revitalization of Local Health Traditions" utilizing the untapped AYUSH workforces, therapeutics and principles for the management of community health problems. As on 31/03/2012 AYUSH facilities were co-located in 468 District Hospitals, 2483 Community Health Centers and 8520 Primary Health Centers in the country. Several therapeutics are currently in use and few drugs have been included in the ASHA drug kit to treat common ailments in the

community. At the same time Government of India has recognized few principles and therapeutics of Ayurveda as modalities of intervention to some of the community health problems. These include Ksharasutra (medicine coated thread) therapy for ano-rectal surgeries and Rasayana Chikitsa (rejuvenative therapy) for senile degenerative disorders etc. Similarly respective principles and therapeutics can also be utilized from other systems of AYUSH such as Yoga and Naturopathy, Unani, Siddha and Homoeopathy. Akin to Ayurveda these principles and therapeutics can also help in managing community health problems if appropriately implemented. This paper is a review on the role of AYUSH, as a system, in the delivery of health care in India with special reference to National Rural Health Mission.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4687239/>

91. **Magi T, Kuehni CE, Torchetti L, Wengenroth L, Lüer S, Frei-Erb M. Use of Complementary and Alternative Medicine in Children with Cancer: A Study at a Swiss University Hospital. *PLoS One.* 2015;10(12):e0145787. doi: 10.1371/journal.pone.0145787.** Background: Though complementary and alternative medicine (CAM) are frequently used by children and adolescents with cancer, there is little information on how and why they use it. This study examined prevalence and methods of CAM, the therapists who applied it, reasons for and against using CAM and its perceived effectiveness. Parent-perceived

communication was also evaluated. Parents were asked if medical staff provided information on CAM to patients, if parents reported use of CAM to physicians, and what attitude they thought physicians had toward CAM. Study design: All childhood cancer patients treated at the University Children's Hospital Bern between 2002-2011 were retrospectively surveyed about their use of CAM. Results: Data was collected from 133 patients (response rate: 52%). Of those, 53% had used CAM (mostly classical homeopathy) and 25% of patients received information about CAM from medical staff. Those diagnosed more recently were more likely to be informed about CAM options. The most frequent reason for choosing CAM was that parents thought it would improve the patient's general condition. The most frequent reason for not using CAM was lack of information. Of those who used CAM, 87% perceived positive effects. Conclusions: Since many pediatric oncology patients use CAM, patients' needs should be addressed by open communication between families, treating oncologists and CAM therapists, which will allow parents to make informed and safe choices about using CAM.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4687920/pdf/pone.0145787.pdf>

92. **Mathie RT. Controlled clinical studies of homeopathy.**

Homeopathy. 2015;104(4):328-32. doi: 10.1016/j.homp.2015.05.003. Introduction: Observations about controlled clinical trials expressed by Max Haidvogel in the book *Ultra High Dilution* (1994) have been appraised

from a perspective two decades later. The present commentary briefly examines changes in homeopathy research evidence since 1994 as regards: the published number of randomised controlled trials (RCTs), the use of individualised homeopathic intervention, the 'proven efficacy of homeopathy', and the quality of the evidence. Methods: The commentary reflects the details of RCTs that are available in a recently published literature review and by scrutiny of systematic reviews of RCTs in homeopathy. Results:

The homeopathy RCT literature grew by 309 records in the 18 years that immediately followed Haidvogel's article, with more than a doubling of the proportion that investigated individualised homeopathy. Discounting one prior publication, the entire systematic review literature on homeopathy RCTs post-dates 1994. A total of 36 condition-specific systematic reviews have been identified in the peer-reviewed literature: 16 of them reported positive, or tentatively positive, conclusions about homeopathy's clinical effectiveness; the other 20 were negative or non-conclusive. Reviews typically have been restricted in the strength of their conclusions by the low quality of the original RCT evidence. Three comprehensive systematic reviews concluded, cautiously, that homeopathy may differ from placebo; a fourth such review reached negative conclusions. A recent high-quality meta-analysis concluded that medicines prescribed in individualised homeopathic treatment may have small, specific, effects. Conclusions: Despite important growth in research activity

since 1994, concerns about study quality limit the interpretation of available RCT data. The question whether homeopathic intervention differs from placebo awaits decisive answer.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678738>

93. **van Wijk R, Wiegant FA. Physiological effects of homeopathic medicines in closed phials--a critical evaluation. *Homeopathy*. 2015;104(4):292-4. doi: 10.1016/j.homp.2015.06.001.** Background: Phials containing high dilutions of homeopathic remedies are commonly utilized in diagnostic tools in combination with electro acupuncture measuring electrical conductivity of the skin. The present research aimed to elucidate the interaction of the homeopathic remedy and the human organism. Method: The study protocol included the transition of a healthy subject to a diseased state utilizing a sub-harmful dose of a toxin. Subsequently, the subject was exposed to a homeopathic or placebo remedy in a closed glass phial and electrical conductivity was measured in open as well as in blind trials. A total of 229 data were collected from open trials and 750 data from blind trials. Result: The experimental data showed that homeopathic remedies in closed glass phials may influence the electrical skin conductivity. The results of the blind trials differed considerably from those of the open trials. The percentage of correctly identified (verum and placebo) phials in the open trials (85%) was statistically different from those in the blind trials (65%). In both types of trials, however, the difference

between the sealed phials containing the homeopathic medicine and the placebo was statistically significant. The results of measurements are directly linked to the way in which the tester holds the electrode in one hand and the subject's finger in the other, while putting pressure on the electrode. Conclusion: It was concluded that the tester's muscle tone is the intermediary in unconsciously selecting which phial influenced him in his specific contact with the subject.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678731>

94. **Poitevin B. Survey of immuno-allergological ultra high dilution research. *Homeopathy*. 2015;104(4):269-76. doi: 10.1016/j.homp.2015.06.007.** Background: Experiments about basic research in Immuno-allergology reported by M. Bastide and B. Poitevin in Ultra High Dilution (1994) have been appraised from a 20 year perspective. The numerous experiments published mainly focus on immunological regulation, inflammatory process and basophil activation. They are analyzed according to one essential criterion: repeatability. Methods: The commentary reflects the research details made available in a recently published literature review, also published in French. Results: The regulatory effect of high dilution of bursin on immune response has been observed in multiple experiments but not reproduced by independent teams. The immunomodulating effect of Thymulin has been confirmed in mice. Rhus toxicodendron has an anti-

inflammatory activity on different models, from mother tincture (TM) to very high dilutions. The homeopathic complex Canova activates macrophages in vitro and in vivo, induces lymphocyte proliferation, and reduces the size of tumors and mortality of sarcoma-bearing mice. Some homeopathic medicines used in clinical inflammation modulate in vitro the neutrophil activation, with variability in the protocols used and in the medicines tested. In allergology, high dilution histamine has an inhibitory effect on basophil activation in multicenter trials and with independent teams, either with methods implying a change in basophil staining or with flow cytometry. However, high dilution histamine had no effect in some well-conducted experiments. The inhibitory effect of *Apis mellifica* has not been studied with the flow cytometry method, as well as the activation of basophil by anti-IgE high dilution, published in *Nature*. Conclusions: Despite considerable research activity in immuno-allergology and a great increase in the number of publications, there is still not in this domain a "gold standard" trial in basic research in homeopathy. The most studied system, the inhibitory effect of histamine high dilutions on basophil activation, requires clarifications of various factors, including individual sensitivity. For scientific and epistemological reasons, the same work should be carried out for independent reproduction of the experiments conducted with anti-IgE and *Apis mel* high dilution, in complement of the new axes of research in immunoallergology developed since 20 years.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678728>

95. **Bonamin LV, Bellavite P. Immunological models in high dilution research following M Bastide. *Homeopathy*. 2015;104(4):263-8. doi: 10.1016/j.homp.2015.08.004.** Abstract: In 1994, Madeleine Bastide described experimental models in immunology that were used during the 1980s to investigate high dilution effects on several biological systems. She classified the available papers in four categories: High dilutions of antigens; High dilutions of thymus, bursa and other hormones; High dilutions of cytokines; Immunopharmacological activity of silica. The studies about high dilutions of antigens were not continued after this period, but gave rise to a long process of a series of in vitro models on antigens and histamine dilutions, that led to the demonstration of the biological modulation effects of these preparations on basophil degranulation. During this process, a multi-centre study was performed, with a high degree of reproducibility among different independent laboratories. The studies about high diluted cytokines, thymulin and other hormones opened a new line of scientific investigation, about the regulatory properties of endogenous substances prepared according to homeopathic methods. The most frequently studied substance, thymulin, when administered to mice at 5cH potency, is able to improve the activity of phagocytes in different experimental situations, such as viral, bacterial and parasitic infections. The immunopharmacological activity of silica was

demonstrated, at that time, as an in vivo illustration of the homeopathic 'similia principle'. More recently, studies on silica have assumed another focus: the putative role of silica as active contaminant present in high dilutions. This paper presents a follow-up summary on these items, considering the evolution of discoveries from 1994 to 2014.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678727>

96. **Oberbaum M, Gropp C. Update on hormesis and its relation to homeopathy. Homeopathy. 2015;104(4):227-33. doi: 10.1016/j.homp.2015.07.001.** Introduction: Hormesis is a dose-response relationship characterized by a biphasic dose response to stressors with a low dose stimulation and a high dose inhibition. The first systematic description of hormesis appeared toward the close of the 18th century by the German pharmacology professor Hugo Schulz. The stressor agent can be any agent or factor capable of causing a deleterious effect. The biological systems can be diverse: bacteria, fungi, algae, yeasts, animals, humans, protozoa and plants. The range of endpoints covers longevity, reproduction, cancer, survival, growth, metabolic effects and others. Hormesis is a nonspecific phenomenon, which can occur in any biological system and can be caused by any stressor. It is quantifiable and reproducible. The apparent similarity between the basic principle of hormesis and homeopathy's Similia Principle, together with the homeopathic claim that hormesis validates homeopathy caused its

marginalization, and its rejection during the past century by central figures in pharmacology. Recent years have seen a slight renaissance in the conventional scientific attitude towards hormesis. Method: We compared hormesis and homeopathy. Result: There is no convincing evidence of similarity between these two systems. Moreover, there are several crucial differences between them, which seem to refute any idea that they stem from the same root. This paper discusses these differences. The rejection of hormesis on grounds of its similarity to homeopathy is unjustified. Conclusion: The authors suggest exploring the differences between both systems. Such exploration may answer the key question of whether they do indeed share a root or embrace the same principles. Such exploration may also spur research within both systems to answer further open questions.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678722>

97. **Endler PC, Schulte J, Stock-Schroeer B, Stephen S. "Ultra High Dilution 1994" revisited 2015--the state of follow-up research. Homeopathy. 2015;104(4):223-6. doi: 10.1016/j.homp.2015.07.005.** Background: The "Ultra High Dilution 1994" project was an endeavour to take stock of the findings and theories on homeopathic extreme dilutions that were under research at the time in areas of biology, biophysics, physics and medicine. The project finally materialized into an anthology assembling contributions of leading scientists in the field.

Over the following two decades, it became widely quoted within the homeopathic community and also known in other research communities. The aim of the present project was to re-visit and review the 1994 studies from the perspective of 2015. Method: The original authors from 1994 or close laboratory colleagues were asked to contribute papers covering their research efforts and learnings in the period from 1994 up to 2015. These contributions were edited and cross-referenced, and a selection of further contributions was added. Results: About a dozen contributions reported on follow-up experiments and studies, including further developments in theory. Only few of the models that had seemed promising in 1994 had not been followed up later. Most models presented in the original publication had meanwhile been submitted to intra-laboratory, multicentre or independent scrutiny. The results of the follow-up research seemed to have rewarded the efforts. Furthermore, contributions were provided on new models that had been inspired by the original ones or that may be candidates for further in-depth ultra high dilution (UHD) research. Conclusion: The project "Ultra High Dilution 1994 revisited 2015" is the latest output of what might be considered the "buena vista social club" of homeopathy research. However, it presents new developments and results of the older, established experimental models as well as a general survey of the state of UHD research.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26678721>

98. **Shaw D. A Strong Remedy to a Weak Ethical Defence of Homeopathy. J Bioeth Inq. 2015;12(4):549-53. doi:**

10.1007/s11673-015-9674-0. Abstract: In this article, I indicate and illustrate several flaws in a recent "ethical defence" of homeopathy. It transpires that the authors' arguments have several features in common with homeopathic remedies, including strong claims, a lack of logic or evidence, and no actual effect.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26659862>

99. **Samal J. Situational analysis and future directions of AYUSH: An assessment through 5-year plans of India. J Intercult Ethnopharmacol. 2015;4(4):348-54. doi:**

10.5455/jice.20151101093011. Abstract: AYUSH is an acronym for Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy. These are the six indigenous systems of medicine practiced in India. A department called Department of Indian System of medicine was created in March 1995 and renamed to AYUSH in November 2003 with a focus to provide increased attention for the development of these systems. Very recently, in 2014, a separate ministry was created under the union Government of India, which is headed by a minister of state. Planning regarding these systems of medicine was a part of 5-year planning process since 1951. Since then many developments have happened in this

sector albeit the system was struggling with a great degree of uncertainty at the time of 1(st)5-year plan. A progressive path of development could be observed since the first to the 12(th)5-year plan. It was up to the 7(th)plan the growth was little sluggish and from 8(th)plan onward the growth took its pace and several innovative development processes could be observed thereafter. The system is gradually progressing ahead with a vision to be a globally accepted system, as envisaged in 11(th)5-year plan. Currently, AYUSH system is a part of mainstream health system implemented under National Rural Health Mission (NRHM). NRHM came into play in 2005 but implemented at ground level in 2006 and introduced the scheme of "Mainstreaming of AYUSH and revitalization of local health traditions" to strengthen public health services. This scheme is currently in operation in its second phase, since 1(st)April 2012, with the 12(th)5-year plan. The scheme was primarily brought in to operation with three important objectives; choice of treatment system to the patients, strengthen facility functionally and strengthen the implementation of national health programmes, however, in some places it seems to be a forced medical pluralism owing to a top-down approach by the union government without considerable involvement of the concerned community. In this study, the 5-year planning documents have been reviewed, from the 1(st)plan to 12(th)plan, to enable reflection and throw some light into the future directions of AYUSH system.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4665030/pdf/JIE-4-348.pdf>

100. **Davidson JR. The Wesselhoefts: A medical dynasty from the age of Goethe to the era of nuclear medicine. J Med Biogr. 2015. pii: 0967772015619304.** Abstract: For six generations, members of the Wesselhoeft family have practiced medicine in Germany, Denmark, Switzerland, Canada and/or the USA. In the early decades of the 19th century, two Wesselhoeft brothers left Europe to eventually settle in New England, where they and their progeny gave rise to a regional medical dynasty. The Wesselhoeft doctors became well-known practitioners of homeopathy, hydropathy, conventional medicine and surgery, in academic and general clinical settings. An additional connection was established to the literary worlds of Germany and the USA, either through friendships or as personal physicians. Source: <http://www.ncbi.nlm.nih.gov/pubmed/26643056>
101. **Pickering N. When Lack of Evidence Is Evidence of Lack. J Bioeth Inq. 2015;12(4):545-7. doi: 10.1007/s11673-015-9675-z.** Abstract: In their recent article "A Gentle Ethical Defence of Homeopathy," Levy, Gadd, Kerridge, and Komesaroff use the claim that "lack of evidence is not equivalent to evidence of lack" as a component of their ethical defence of homeopathy. In response, this article argues that they cannot use this claim to shore up their ethical arguments. This is because it is false.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26631232>

102. **Hartmann N, Neininger MP, Bernhard MK, Syrbe S, Nickel P, Merckenschlager A, Kiess W, Bertsche T, Bertsche A.** Use of complementary and alternative medicine (CAM) by parents in their children and adolescents with epilepsy - Prevalence, predictors and parents' assessment. *Eur J Paediatr Neurol*. 2016;20(1):11-9. doi: 10.1016/j.ejpn.2015.11.003. Background: The use of complementary and alternative medicine (CAM) is popular. Parents of children suffering from epilepsy may also consider administering CAM to their children. Systematic data about frequency of and motivations for CAM use, however, are scarce. Methods: In a university hospital's neuropaediatric department parents of patients aged 0-18 years suffering from epilepsy were consecutively invited to take part in a structured interview during 4 months in 2014. Results: Of the invited parents, 164/165 (99%) agreed to participate. From those, 21/164 (13%) stated that they used CAM in their child. The highest independent predictive value of CAM use was the occurrence of adverse drug events (ADE) of anticonvulsants as judged by parents. Patients affected by ADE had a 5.6 higher chance of receiving CAM compared to patients without ADE. Most commonly used were homeopathy (14/21, 67%) and osteopathy (12/21, 57%). The internet was the most frequently used source of information (14/21, 67%). Of the parents, 10/21 (48%) described positive effects of

CAM on seizure frequency, 12/21 (57%) on general condition of their child, and 20/21 (95%) wished to continue CAM for epilepsy therapy. From the non-users of CAM, 91/143 (66%) expressed the desire to learn more about CAM for epilepsy therapy. Limitations: Our study was performed in a university hospital in a large urban city in Eastern Germany. CAM user rates can differ in other parts of Germany and Europe, in other institutions and for chronic diseases other than epilepsy. Conclusion: The main reason for CAM use was the occurrence of ADE of anticonvulsants. More than half of the parents saw a benefit of CAM for their children. Almost all parents wished to continue CAM use, even those who did not see concrete positive effects.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26614551>

103. **Bernardini S, Cracolici F, Ferreri R, Rinaldi M, Pulcri R.** Integration between orthodox medicine, homeopathy and acupuncture for inpatients: Three years experience in the first hospital for Integrated Medicine in Italy. *J Tradit Complement Med*. 2015;5(4):234-40. doi: 10.1016/j.jtcme.2015.03.006. Abstract: The hospital in Pitigliano (Tuscany) is the first hospital in Italy to put into practice a model of Integrated Medicine. This clinical setting caters for the use of complementary medicine (homeopathy and acupuncture (zhēn jiǔ)) alongside orthodox therapies (conventional medicine). The therapeutic model implicates doctors who are experts in complementary and alternative medicine

(CAM; bǔ chōng yǔ tì dài yī xué) and the rest of the hospital personnel working together as equals. This contribution explains the difficulties, critical aspects and potential of this innovative setting. The clinical setting for Integrated Medicine was evaluated in part through observation and in part through the analysis of approval questionnaires. The writers of the questionnaires were the orthodox medical personnel and the hospital patients. The project is still evolving today in spite of the initial partial contrariety of some doctors in the hospital and some external doctors in the area. However, it can already be considered a positive experience, as confirmed by the high approval gained from many health workers and most of the hospital patients. Moreover, the follow-up carried out through specific surgeries dedicated to CAM is extremely positive. Up to now 532 in-patients suffering from acute illnesses, relapse of a chronic illness or neurological or orthopaedic rehabilitation following strokes, brain haemorrhage, neurological illness or limb prosthesis operations have been treated. This work has tried to illustrate the innovative and positive experience for the Italian public health authorities so that it may also be useful to anyone who would like to promote similar initiatives within its public health Institution.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4624373/>

104. **Freckelton I. THE MEDICO-SCIENTIFIC MARGINALISATION OF HOMEOPATHY: INTERNATIONAL LEGAL AND REGULATORY DEVELOPMENTS. *J Law Med.* 2015;23(1):7-**

23. Abstract: The 2010 report of the United Kingdom Science and Technology Committee of the House of Commons and the 2015 report of the Australian National Health and Medical Research Council have overtaken in significance the uncritical Swiss report of 2012 and have gone a long way to changing the environment of tolerance toward proselytising claims of efficacy in respect of homeopathy. The inquiry being undertaken in the United States by the Food and Drug Administration during 2015 may accelerate this trend. An outcome of the reports and inquiries has been a series of decisions from advertising regulators and by courts rejecting medically unjustifiable claims in respect of the efficacy of homeopathy. Class actions have also been initiated in North America against manufacturers of homeopathic products. The changing legal and regulatory environment is generating an increasingly scientifically marginalised existence for homeopathy. That new environment is starting to provide effective inhibition of assertions on behalf of homeopathy and other health modalities whose claims to therapeutic efficacy cannot be justified by reference to the principles of evidence-based health care. This has the potential to reduce the financial support that is provided by insurers and governments toward homeopathy and to result in serious liability exposure for practitioners, manufacturers and those who purvey homeopathic products, potentially including pharmacists. In addition, it may give a fillip to a form of regulation of homeopaths if law reform to regulate unregistered health

practitioners gathers momentum, as is taking place in Australia.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26554194>

105. **Barikani A, Beheshti A, Javadi M, Yasi M. Knowledge, Attitude and Practice of General Practitioners toward Complementary and Alternative Medicine: a Cross-Sectional Study. *Acta Med Iran.* 2015;53(8):501-6.**

Abstract: Orientation of public and physicians to the complementary and alternative medicine (CAM) is one of the most prominent symbols of structural changes in the health service system. The aim of his study was a determination of knowledge, attitude, and practice of general practitioners in complementary and alternative medicine. This cross-sectional study was conducted in Qazvin, Iran in 2013. A self-administered questionnaire was used for collecting data including four information parts: population information, physicians' attitude and knowledge, methods of getting information and their function. A total of 228 physicians in Qazvin comprised the population of study according to the deputy of treatment's report of Qazvin University of Medical Sciences. A total of 150 physicians were selected randomly, and SPSS Statistical program was used to enter questionnaires' data. Results were analyzed as descriptive statistics and statistical analysis. Sixty percent of all responders were male. About sixty (59.4) percent of participating practitioners had worked less than 10 years. 96.4 percent had a positive attitude towards complementary and alternative medicine. Knowledge of

practitioners about traditional medicine in 11 percent was good, 36.3% and 52.7% had average and little information, respectively. 17.9% of practitioners offered their patients complementary and alternative medicine for treatment. Although there was little knowledge among practitioners about traditional medicine and complementary approaches, a significant percentage of them had attitude higher than the lower limit.

Source:

<http://acta.tums.ac.ir/index.php/acta/article/view/4276/4231>

106. **Klein SD, Torchetti L, Frei-Erb M, Wolf U. Usage of Complementary Medicine in Switzerland: Results of the Swiss Health Survey 2012 and Development Since 2007. *PLoS One.* 2015;10(10):e0141985. doi: 10.1371/journal.pone.0141985.**

Background: Complementary medicine (CM) is popular in Switzerland. Several CM methods (traditional Chinese medicine/acupuncture, homeopathy, anthroposophic medicine, neural therapy, and herbal medicine) are currently covered by the mandatory basic health insurance when performed by a certified physician. Treatments by non-medical therapists are partially covered by a supplemental and optional health insurance. In this study, we investigated the frequency of CM use including the evolvement over time, the most popular methods, and the user profile. Methods: Data of the Swiss Health Surveys 2007 and 2012 were used. In 2007 and 2012, a population of 14,432 and 18,357, respectively, aged 15 years or older answered the written questionnaire. A set of questions

queried about the frequency of use of various CM methods within the last 12 months before the survey. Proportions of usage and 95% confidence intervals were calculated for these methods and CM in general. Users and non-users of CM were compared using logistic regression models. Results: The most popular methods in 2012 were homeopathy, naturopathy, osteopathy, herbal medicine, and acupuncture. The average number of treatments within the 12 months preceding the survey ranged from 3 for homeopathy to 6 for acupuncture. 25.0% of the population at the age of 15 and older had used at least one CM method in the previous 12 months. People with a chronic illness or a poor self-perceived health status were more likely to use CM. Similar to other countries, women, people of middle age, and those with higher education were more likely to use CM. 59.9% of the adult population had a supplemental health insurance that partly covered CM treatments. Conclusions: Usage of CM in Switzerland remained unchanged between 2007 and 2012. The user profile in Switzerland was similar to other countries, such as Germany, United Kingdom, United States or Australia.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4626041/pdf/pone.0141985.pdf>

107. **Srinivasan R, Sugumar VR. Spread of Traditional Medicines in India: Results of National Sample Survey Organization's Perception Survey on Use of AYUSH. J Evid Based Complementary Altern Med. 2015; pii: 2156587215607673.** Abstract: For the first time, we have a comprehensive database on usage of AYUSH (acronym for

Ayurveda, naturopathy and Yoga, Unani, Siddha, and Homeopathy) in India at the household level. This article aims at exploring the spread of the traditional medical systems in India and the perceptions of people on the access and effectiveness of these medical systems using this database. The article uses the unit level data purchased from the National Sample Survey Organization, New Delhi. Household is the basic unit of survey and the data are the collective opinion of the household. This survey shows that less than 30% of Indian households use the traditional medical systems. There is also a regional pattern in the usage of particular type of traditional medicine, reflecting the regional aspects of the development of such medical systems. The strong faith in AYUSH is the main reason for its usage; lack of need for AYUSH and lack of awareness about AYUSH are the main reasons for not using it. With regard to source of medicines in the traditional medical systems, home is the main source in the Indian medical system and private sector is the main source in Homeopathy. This shows that there is need for creating awareness and improving access to traditional medical systems in India. By and large, the users of AYUSH are also convinced about the effectiveness of these traditional medicines.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26438717>

108. **Jargin SV. Hormesis and homeopathy: The artificial twins. J Intercult Ethnopharmacol. 2015;4(1):74-7. doi: 10.5455/jice.20140929114417.** Abstract:

Homeopathy claims a curative reaction from small doses of a substance, high doses of which cause symptoms similar to those the patient is suffering from. Hormesis is a concept of biphasic dose-response to different pharmacological and toxicological agents. According to this concept, a small dose of a noxious agent can exert a beneficial action. A hypothesis is defended here that hormesis as a general principle can be assumed only for the factors present in the natural environment thus having induced adaptation of living organisms. Generalizations of the hormesis phenomenon used in support of homeopathy are unfounded. Low-dose impacts may be associated with a higher risk in a state of organ sub-compensation or failure especially in the elderly patients. Practical recommendations should be based neither on the hormesis as a default approach nor on the postulates of homeopathy. All clinically relevant effects, hormetic or not, should be tested by the methods of evidence-based medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26401389>

109. **Philibert C, Hoegy D, Philippe M, Marec-Bérard P, Bleyzac N. A French survey on the resort of oral alternative complementary medicines used in children with cancer. Bull Cancer. 2015;102(10):854-62. doi: 10.1016/j.bulcan.2015.06.008.** Introduction: The use of oral complementary and alternative medicine (CAM) is widespread among cancer patients, but considerably less known in pediatric cancer patients. Our

survey was conducted in a pediatric onco-hematology unit to study the frequency and the circumstances of CAM use. Methods: This study included 50 children treated for malignant diseases. A questionnaire was used to collect support general data on the child as well as information on the CAM use. One of the child's parents was interviewed. Results: Most of parents (48%) used one or more CAM for their child in the context of cancer. The most used type of CAM was homeopathy, dietary supplements and aromatherapy. The most frequent goal for CAM use was to limit the side effects of conventional treatment (75% of parents). For 87.5% of users, the CAM was effective. Physicians were not aware of this use for 33.3% of users, in spite of the fact that the family physician was the main source of information for this use. Most of parents (48%) needed more information about the CAM and they bought CAM in a pharmacy. Conclusions: The use of oral CAM in this survey was common. For most parents, this use was effective and appreciated because they generated fewer side effects than conventional treatments. However, doctors were not systematically informed of this use. This is problematic because some CAM such as herbal supplements could potentially cause interactions with cancer treatments. More information about CAM is necessary in pediatric onco-hematology.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26387822>

110. **Albert S, Porter J. Is 'mainstreaming AYUSH' the right policy for Meghalaya, northeast**

India? BMC Complement Altern Med. 2015;15:288. doi: 10.1186/s12906-015-0818-x. Background: National policy on medical pluralism in India encourages the mainstreaming of AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) systems and the revitalization of local health traditions (LHT). In Meghalaya state in the northeast, the main LHT is its indigenous tribal traditional medicine. This paper presents the perceptions of tribal medicine and of AYUSH systems among various policy actors and locates the tribal medicine of Meghalaya within the policy on medical pluralism currently being implemented in the state, a region that is ethnically and culturally different and predominantly inhabited by indigenous peoples. Methods: A stakeholder mapping exercise identified appropriate policy actors and 46 in-depth interviews were conducted with policy makers, doctors, academics, members of healer associations and elders of the community. A further 44 interviews were conducted with 24 Khasi and 20 Garo traditional healers. Interview data were supplemented with document analysis and observations. Qualitative data were analyzed using thematic content analysis that incorporated elements of grounded theory. Results: In Meghalaya there is high awareness and utilization of tribal medicine, but no visible efforts by the public sector to support or engage with healers. The AYUSH systems in contrast had little local acceptance but promotion of these systems has led to a substantial increase in AYUSH doctors, particularly homeopaths, in rural areas. Policy actors outside the health department

saw an important role for tribal medicine due to its popularity, local belief in its efficacy and its cultural resonance. The need to engage with healers to enhance referral, training, documentation and research of tribal medicine was made. Conclusions: The wide acceptance of tribal medicine suggests that tribal medicine needs to be supported. The results of the study question the process of the implementation of the 'mainstreaming AYUSH' policy for Meghalaya and highlight the importance of contextualizing health policy within the local culture. A potential role for Health Policy and Systems Research (HPSR) at sub-national levels is also highlighted.

Source:http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4539927/pdf/12906_2015_Article_818.pdf

111. **Stub T, Kristoffersen AE, Alræk T, Musial F, Steinsbekk A. Risk in homeopathy: Classification of adverse events and homeopathic aggravations--A cross sectional study among Norwegian homeopath patients. Complement Ther Med. 2015;23(4):535-43. doi: 10.1016/j.ctim.2015.06.004.** Abstract: The registration of adverse events is important to identify treatment that might impose risk to patients. Homeopathic aggravation, a concept unique for homeopathy may impose a particular risk, as it is tolerant towards a worsening of the patients' symptoms. The aim of this study was to explore the classification of patient reported reactions as homeopathic aggravations or adverse drug reactions. Design and setting: In a cross sectional survey, patients were asked to

register any reactions they had experienced 14 days after taking homeopathic remedies. Worsening of symptoms was classified as homeopathic aggravation if it was (i) an increase of the patients' existing symptoms (ii) and/or a feeling of well-being that emerged 1-3 days after taking the remedy (iii) and/or headache and/or fatigue accompanying these symptoms. Results: A total of 26% of the participants reported worsening of symptoms. One third was classified as adverse events. Half of these were graded as minor and the other half as moderate according to the Common Terminology Criteria for Adverse Events. Two thirds were classified as homeopathic aggravations. Of these, 73% were classified as minor and 27% as moderate, giving a tendency towards milder severity for those classified as homeopathic aggravations ($p=0.065$). Conclusion: Patients reported a substantial part of the short-term reactions after taking homeopathic remedy as a worsening of symptoms. These reactions were classified as mild and moderate. Hence, the risk connected to homeopathic treatment is minor. More studies are needed to confirm the existence of homeopathic aggravation and how to classify the concept in a clinically meaningful way.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26275646>

112. **Ostermann JK, Reinhold T, Witt CM. Can Additional Homeopathic Treatment Save Costs? A Retrospective Cost-Analysis Based on 44500 Insured Persons. PLoS One. 2015;10(7):e0134657. doi:**

10.1371/journal.pone.0134657. Objectives: The aim of this study was to compare the health care costs for patients using additional homeopathic treatment (homeopathy group) with the costs for those receiving usual care (control group). Methods: Cost data provided by a large German statutory health insurance company were retrospectively analysed from the societal perspective (primary outcome) and from the statutory health insurance perspective. Patients in both groups were matched using a propensity score matching procedure based on socio-demographic variables as well as costs, number of hospital stays and sick leave days in the previous 12 months. Total cumulative costs over 18 months were compared between the groups with an analysis of covariance (adjusted for baseline costs) across diagnoses and for six specific diagnoses (depression, migraine, allergic rhinitis, asthma, atopic dermatitis, and headache). Results: Data from 44,550 patients (67.3% females) were available for analysis. From the societal perspective, total costs after 18 months were higher in the homeopathy group (adj. mean: EUR 7,207.72 [95% CI 7,001.14-7,414.29]) than in the control group (EUR 5,857.56 [5,650.98-6,064.13]; $p<0.0001$) with the largest differences between groups for productivity loss (homeopathy EUR 3,698.00 [3,586.48-3,809.53] vs. control EUR 3,092.84 [2,981.31-3,204.37]) and outpatient care costs (homeopathy EUR 1,088.25 [1,073.90-1,102.59] vs. control EUR 867.87 [853.52-882.21]). Group differences decreased over time. For all diagnoses, costs were higher in

the homeopathy group than in the control group, although this difference was not always statistically significant. Conclusion: Compared with usual care, additional homeopathic treatment was associated with significantly higher costs. These analyses did not confirm previously observed cost savings resulting from the use of homeopathy in the health care system.

Source:<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4521756/pdf/pone.0134657.pdf>

113. **Berreni A, Montastruc F, Bondon-Guitton E, Rousseau V, Abadie D, Durrieu G, Chebane L, Giroud JP, Bagheri H, Montastruc JL.** Adverse drug reactions to self-medication: a study in a pharmacovigilance database. **Fundam Clin Pharmacol.** 2015;29(5):517-20. doi: **10.1111/fcp.12140.** Abstract: Although self-medication is widely developed, there are few detailed data about its adverse drug reactions (ADRs). This study investigated the main characteristics of ADRs with self-medication recorded in the Midi-Pyrénées Pharmacovigilance between 2008 and 2014. Self-medication included first OTC drugs and second formerly prescribed drugs later used without medical advice (reuse of previously prescribed drugs). Among the 12 365 notifications recorded, 160 (1.3%) were related to SM with 186 drugs. Around three-fourth of the ADRs were 'serious'. Mean age was 48.8 years with 56.3% females. The most frequent ADRs were gastrointestinal and neuropsychiatric and main drug classes involved NSAIDs, analgesics, and benzodiazepines. Phytotherapy-homeopathy accounted for 9.1% of drugs.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26215671>

114. **Frenkel M.** Is There a Role for Homeopathy in Cancer Care? Questions and Challenges. **Curr Oncol Rep.** 2015;17(9):43. doi: **10.1007/s11912-015-0467-8.** Abstract: Patients with cancer commonly use complementary and integrative medicine, including homeopathy. Homeopathy has grown in popularity with the public but is viewed with skepticism by medical academia and is still excluded from conventionally prescribed treatments. In recent years, homeopathy has been used in cancer care in Europe and other countries worldwide. This use raised the question if there is any benefit in utilizing this type of care with cancer patients. The purpose of this manuscript is to explore the evidence related to the benefit of homeopathy in cancer care. Limited research has suggested that homeopathic remedies appear to cause cellular changes in some cancer cells. In animal models, several homeopathic remedies have had an inhibitory effect on certain tumor development. Some clinical studies of homeopathic remedies combined with conventional care have shown that homeopathic remedies improve quality of life, reduce symptom burden, and possibly improve survival in patients with cancer. The findings from several lab and clinical studies suggest that homeopathy might have some beneficial effect in cancer care; however, further large, comprehensive clinical studies are needed to determine these beneficial

effects. Although additional studies are needed to confirm these findings, given the low cost, minimal risks, and the potential magnitude of homeopathy's effects, this use might be considered in certain situations as an additional tool to integrate into cancer care.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26210222>

115. **Koley M, Saha S, Arya JS, Choubey G, Ghosh S, Chattopadhyay R, Das KD, Ghosh A, Hait H, Mukherjee R, Banerjee T.** Knowledge, Attitude, and Practice Related to Diabetes Mellitus Among Diabetics and Nondiabetics Visiting Homeopathic Hospitals in West Bengal, India. **J Evid Based Complementary Altern Med.** 2016;21(1):39-47. doi: **10.1177/2156587215593656.** Abstract: High prevalence of undiagnosed cases of diabetes mellitus and poor knowledge, awareness, and practice has increased premature death, costly complications, and financial burden. A cross-sectional survey was conducted in November 2014 on 273 diabetics and 355 nondiabetics in 3 government homeopathic hospitals in West Bengal, India. A self-administered questionnaire assessing knowledge, awareness, and practice related to diabetes was used. A total of 17.5% to 29.3% of the participants were aware of the normal blood sugar level. Lack of insulin, frequent urination, hypertension, and poor wound healing were identified most frequently as the cause, symptom, association, and complications. A total of 35.5% to 46.5% said that diabetes was preventable; 14.1% to 31.9% knew that

diabetes was controllable rather than curable. Consumption of planned diet, avoiding sugar, and testing blood sugar were the most frequently identified components of healthy lifestyle, diabetic diet, and diagnostic domain. Diabetics had higher knowledge and awareness than nondiabetics ($P < .0001$); still the latter need to be made aware and knowledgeable to curtail the ever-increasing burden of diabetes.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26156145>

116. **Shrivastava SR, Shrivastava PS, Ramasamy J.** Mainstreaming of Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy with the health care delivery system in India. **J Tradit Complement Med.** 2015;5(2):116-8. doi: **10.1016/j.jtcme.2014.11.002.** Abstract: India has a population of 1.21 billion people and there is a high degree of socio-cultural, linguistic, and demographic heterogeneity. There is a limited number of health care professionals, especially doctors, per head of population. The National Rural Health Mission has decided to mainstream the Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy (AYUSH) system of indigenous medicine to help meet the challenge of this shortage of health care professionals and to strengthen the delivery system of the health care service. Multiple interventions have been implemented to ensure a systematic merger; however, the anticipated results have not been achieved as a result of multiple challenges and barriers. To ensure the accessibility and availability of

health care services to all, policy-makers need to implement strategies to facilitate the mainstreaming of the AYUSH system and to support this system with stringent monitoring mechanisms.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4488105/>

117. **Rutten L. Data collection: Treat every variable as a treasure. Homeopathy. 2015;104(3):190-6. doi: 10.1016/j.homp.2014.11.002.** Abstract: Collection of data concerning case histories is not yet common in homeopathy despite its great importance for this method. Computer program development progresses slowly and discussion about requirements is scarce. Two Dutch projects assessed Materia Medica of some homeopathic medicines and six homeopathic symptoms. Especially the second project relied heavily on data collection. In both projects much effort was spent on consensus between participating doctors. There was much variance between doctors despite our consensus efforts. Assessing causality seems the most important source of bias, there is also much variance in assessing symptoms. Conclusion: Data collection software should be developed step-by-step, guided by close monitoring and feedback of participating practitioners.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143452>

118. **Solomon EM, Poggenpoel M, Myburgh CP. Some intrapersonal qualities of SA homeopaths who have established**

successful private practices.

Homeopathy. 2015;104(3):182-9. doi:

10.1016/j.homp.2015.04.001. Purpose: The purpose of the study was to explore the experiences of homeopaths who have established successful private practices in South Africa (SA) with the aim of identifying some of their intrapersonal qualities which may have contributed to their establishing a successful practice. Method: This was a qualitative phenomenological research design using in-depth interviews with homeopaths running successful private practices across 5 provinces in SA, which were digitally recorded. Of these, 18 were transcribed and analysed using a descriptive coding approach and strategies for phenomenological analysis. Themes and supporting categories are identified and described. Findings: Homeopaths experiences suggest that they are authentic, self-aware, self-reflective and proactive. They experienced a need for self-care and support and further found that their integrity, positive attitude, self-discipline and passion, contributed to their success in practice. Conclusion: The intrapersonal qualities can be roughly divided between those that generate inner-support and those which aid homeopaths attain their goal of establishing a practice and are therefore crucial aspects of success generation.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143451>

119. **Rossi E, Picchi M, Di Stefano M, Marongiu AM, Scarsini P. The homeopathic choice for children: a qualitative research on the**

decision making process of the families. Homeopathy. 2015;104(3):176-81. doi: 10.1016/j.homp.2015.05.001. Aim: To explore the experiences of parents who chose homeopathic treatment for their children, with particular regard to the decision-making process within the family and the availability of conventional and homeopathic healthcare services. Methods: Semi-structured interview with parents immediately after or before the homeopathic visit at the Homeopathic Clinic of Campo di Marte Hospital of Lucca (Italy) from 1st March, 2012 to 18 July 2012. Answers were analyzed by frequency of response and grouped into main areas: 1. Choice of homeopathy. 2. Intra-family dynamics. 3. Behaviour in emergency situations. 4. The relationship with the homeopathic doctor. 5. The role of friends and acquaintances. 6. The 'cut off' of use of homeopathy. Results: Parents who choose homeopathic treatments for their children are strongly influenced by context. The choice of homeopathy is usually made by mothers and is rarely hindered by fathers, grandparents or friends, whose approval is important and encourages parents to use homeopathy for their children, both for prevention and treatment. Easy access to the homeopathic doctor was frequently requested, especially for acute situations. Conclusion: This research confirms the importance of context in decision making processes. Other characteristics of families which use homeopathy, such as level of education, personal coping strategies and family context should be investigated.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143450>

120. Grimaldi-Bensouda L, Abenhaim L, Massol J, Guillemot D, Avouac B, Duru G, Lert F, Magnier AM, Rossignol M, Rouillon F, Begaud B; EPI3-LA-SER Group. Utilization of psychotropic drugs by patients consulting for sleeping disorders in homeopathic and conventional primary care settings: the EPI3 cohort study. Homeopathy. 2015;104(3):170-5. doi: 10.1016/j.homp.2015.05.002. Background: Utilization of sedative hypnotic drugs for sleeping disorders (SD) raises concerns, particularly among older people. This study compared utilization of conventional psychotropic drugs for SD among patients seeking care from general practitioners (GPs) who strictly prescribe conventional medications (GP-CM), regularly prescribe homeopathy in a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). Methods: This was a French population-based cohort study of GPs and their patients consulting for SD, informed through the Pittsburgh sleep quality index (PSQI) questionnaire. Information on psychotropic drugs utilization was obtained from a standardized telephone interview at inclusion, one, three and 12 months. Results: 346 patients consulting for SD were included. Patients in the GP-Ho group experienced more often severe SD (41.3%) than patients in the GP-CM group (24.3%). Adjusted multivariate analyses showed that patients who chose to be managed by GP-Ho were less likely to use psychotropic drugs over 12

months as opposed to the GP-CM group, with Odds ratio (OR) = 0.25; 95% confidence interval (CI): 0.14 to 0.42. Patients in the GP-Mx group also used less psychotropic drugs but the result was not statistically significant (OR = 0.67; 95% CI: 0.39-1.16). Rates of clinical improvement of the SD did not differ between groups. Conclusions: Patients with SD who chose to consult GPs certified in homeopathy consumed less psychotropic drugs and had a similar evolution of their condition to patients treated with conventional medical management. This result may translate in a net advantage with reduction of adverse events related to psychotropic drugs.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143449>

121. **Mathie RT, Van Wassenhoven M, Jacobs J, Oberbaum M, Roniger H, Frye J, Manchanda RK, Terzan L, Chaufferin G, Dantas F, Fisher P.** Model validity of randomised placebo-controlled trials of individualised homeopathic treatment. *Homeopathy*. 2015;104(3):164-9. doi: 10.1016/j.homp.2015.02.004. Background: Though potentially an important limitation in the literature of randomised controlled trials (RCTs) of homeopathy, the model validity of homeopathic treatment (MVHT) has not previously been systematically investigated. Objective: As an integral part of a programme of systematic reviews, to assess MVHT of eligible RCTs of individualised homeopathic treatment. Methods: From 46 previously identified papers in the category, 31 papers (reporting a total of 32 RCTs) were eligible for

systematic review and were thus the subject of the study. For each of six domains of assessment per trial, MVHT was judged independently by three randomly allocated assessors from our group, who reached a final verdict by consensus discussion as necessary. Results: Nineteen trials were judged overall as 'acceptable' MVHT, nine as 'uncertain' MVHT, and four as 'inadequate' MVHT. Conclusions: These results do not support concern that deficient MVHT has frequently undermined the published findings of RCTs of individualised homeopathy. However, the 13 trials with 'uncertain' or 'inadequate' MVHT will be a focus of attention in supplementary meta-analysis. New RCTs of individualised homeopathy must aim to maximise MVHT and to enable its assessment through clear reporting.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26143448>

122. **Hofmann C, Riha O.** Advertising and Zeitgeist. The advertising of Schwabe Pharmaceuticals. *Med Gesch. 2015;33:247-82.* Abstract: This contribution explores the advertisements for homeopathic products in magazines in the first half of the twentieth century, focusing on the period between 1933 and 1945 and based on the example of the pharmaceutical company Dr Willmar Schwabe. In the first half of the twentieth century, Schwabe Pharmaceuticals was market leader for homeopathic and other complementary medical products (phytotherapy, biochemicals). The example chosen as well as

the time frame complement the existing research. We searched three German publications (the homeopathy journal *Leipziger Populäre Zeitschrift für Homöopathie*, the medical weekly *Münchener Medizinische Wochenschrift* and the pharma magazine *Pharmazeutische Zeitung*) and collected target-group-specific results for laypersons, physicians and pharmacists. Analysis of the images and texts in the selected advertisements often reflected the historical background and the respective health policies (wartime requirements, times of need, "Neue Deutsche Heilkunde"). The history of this traditional company was seen as an important point in advertising, as were the recognisability of the brand through the company logo, the emphasis on the high quality of their products and the reference to the company's own research activities. We furthermore found the kind of argumentation that is typical of natural medicine (naturalness, the power of the sun, prominent representatives). Schwabe met the expectations of its clients, who were interested in complementary medicine, whilst pursuing an approach to homeopathy that was compatible with natural science, and it presented itself as a modern, scientifically oriented enterprise. The company did not lose credibility as a result, but increased its clientele by expanding to include the whole naturopathic market.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26137649>

123. **Mildenberger FG. How to dose correctly? An overview of debates in the United States, Great Britain and Germany (1830s to 1970s). Med Ges Gesch. 2015;33:179-216.** Abstract: The dispute over low and high potencies is no longer current in today's homeopathy, but from the 1830s to the 1960s it played a major role in scientific discourse. The devotees of high potencies claimed to be the only true Hahnemannians, while their antagonists tried to practise a scientific, modernized homeopathy. The former ultimately triumphed in Britain, the U.S. and Germany, but this happened on quite different routes in each of these countries. As well as Hahnemann, other scholars, such as Constantin Hering, James T. Kent and Karl Koetschau, played important roles in the international disputes.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26137647>

124. **Vieracker V. Nosode and sarcode therapies and their history--a controversial inheritance. Med Ges Gesch. 2015;33:155-77.** Abstract: Nosodes and sarcodes (homeopathic remedies gained primarily from disease products respectively organs of human or animal origin) are groups of drugs which were added to the homeopathic *Materia Medica* in the 1830s. Most substances used in nosode or sarcode therapy have a long medical tradition, with some even going back to the pre-Christian period. My contribution first describes

therapeutic practices that use these substances and then juxtaposes them with their use in the early days of homeopathic nosode and sarcode therapy. The investigation shows, on the one hand, that there are aspects common to both approaches that go far beyond the mere choice of substances. On the other hand, it demonstrates the effect the inclusion of human or animal body substances in the homeopathic *Materia Medica* has had on homeopathy, as their use is no longer in line with what is considered rational.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26137646>

125. **Slomp Junior H, Feuerwerker LC, Merhy EE. Life stories, homeopathy and permanent education: construction of shared healthcare. Cien Saude Colet. 2015;20(6):1795-803. doi: 10.1590/1413-81232015206.13672014.**

Abstract: Taking its inspiration from the homeopathic method of collecting data, and acting in a context of permanent education in health, this study aimed to analyze the possibilities that can be offered for healthcare by construction of Life Histories, in organized encounters for collective elaboration of shared therapeutic projects. Some changes that arose from the use of this strategy are discussed: health workers and users changed their stances in relation to each other; teams looked at cases with a new approach; and both these developments appeared to have created stronger and more effective encounters to produce care. It is concluded that, in the ambit of this study, Life

Histories, by intensifying the collective operation of soft technologies, in an invitation to the shared therapeutic project, increased the porosity of the teams, and the recognition of the user as a valid interlocutor. The conclusion favors reorientation of approach to the other technological levels in health work, and recognition of Life Histories as powerful elements for production of effective healthcare.

Source: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232015000601795&lng=en&nrm=iso&tlng=en

126. **Rieder MJ, Robinson JL. 'Nosodes' are no substitute for vaccines. Paediatr Child Health. 2015;20(4):219-22. Abstract: A growing antivaccine movement in Canada and elsewhere is hearing more about an unproven homeopathic therapy, 'nosodes', as an alternative to routine vaccines. The present statement defines nosodes and describes limitations for their use in children. There is scant evidence in the medical literature for either the efficacy or safety of nosodes, which have not been well studied for the prevention of any infectious disease in humans. Recommendations to change the labelling on these products to reflect such limitations are made.**
Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4443832/pdf/pch-20-219.pdf>
127. **Azmi Y, Rao M, Verma I, Agrawal A. Oscilloccinum leading to angioedema, a rare adverse event. BMJ Case Rep. 2015;2015. pii: bcr2015210410. doi: 10.1136/bcr-2015-210410.** Abstract:

Oscillococcinum is an alternative medicine prepared by serial dilution of wild duck heart and liver extracts. This preparation has been labelled as a 'non drowsy, homoeopathic medicine' that 'reduces the duration and severity of flu and flu-like symptoms'. Clinical evidence exists to support this claim and the product has not previously been reported to cause any serious adverse drug reactions. We bring to light, however, a case of angioedema in our patient who was using oscillococcinum for flu-like symptoms. Consumers must therefore exercise caution at the outset of allergy symptoms.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26038386>

128. **Pourtsidis A, Doganis D, Baka M, Varvoutsis M, Bouhoutsou D, Xatzi P, Kosmidis H.** **Prayer and blessings focused for healing is the most popular complementary intervention in a paediatric oncology unit in Greece. J BUON. 2015;20(2):602-7.** Purpose: Increasing numbers of children with cancer are using complementary and alternative medicine (CAM) therapies. Our aim was to estimate the rate of use, the beliefs of users and non-users and factors related with the use of CAM among Greek families. Methods: A self-reported questionnaire was given to parents of 184 children with cancer. We assessed the rate of use, types of CAM therapies and factors potentially associated with the use of CAM. Results: Based on the 110 questionnaires which were completed (59.8% of the families), 23 families (21%) had used at least one complementary treatment. The most common forms were: spiritual

healing/prayer/blessings 18/23 (78%), art therapies 4, dietary supplements 3, massage 3, homeopathy 2, and herbals 2. The reasons given for use included: making the child stronger 17/23 (48%), hope of stopping the cancerous process 11/23 (49%), and coping with side effects 6/23 (26%). Among the reasons given by the parents for not using CAM therapies the most common (84%) was the effective conventional treatment and, therefore, there was no need for CAM use. Another 24% reported that were unaware of these "alternative" and "complementary" therapies and a further 7% had considered using them but finally they didn't. In bivariate analysis, the use of CAM was not associated either with age, sex, nationality, education or occupation of the parents at the time of the survey, or with diagnosis, mode of therapy or age of the child at diagnosis. Conclusions: The use of CAM therapies by Greek families for their children with cancer does not appear to be very popular, although the experiences of those who did use them were generally positive.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26011356>

129. **Mehta N, Rajpurohit L, Ankola A, Hebbal M, Setia P.** **Perception of health care providers toward geriatric oral health in Belgaum district: A cross-sectional study. J Int Soc Prev Community Dent. 2015;5(Suppl 1):S20-4. doi: 10.4103/2231-0762.156154.** Objectives: To access knowledge and practices related to the oral health of geriatrics among the health care providers practicing in urban and rural areas.

Background: Older adults have identified a number of barriers that contribute to lack of dental service use. However, barriers that clinicians encounter in providing dental treatment to older adults are not as clear-cut. **Materials and methods:** 236 health professionals (of allopathy, ayurveda, and homeopathy) from urban and rural areas were assessed by means of structured questionnaire related to oral health practices and beliefs. **Results:** Doctors practicing in urban areas assessed dental care needs more frequently ($P = 0.038$) and performed greater practices related to oral health of geriatrics ($P = 0.043$) than the doctors practicing in primary health care (PHC) centers (rural) ($P = 0.038$). **Conclusion:** Owing to the relative lack of knowledge among rural practitioners, there is a need to integrate primary health care with oral care in rural areas.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4428015/>

130. **Ramamoorthy A, Janardhanan S, Jeevakarunyam S, Jeddy N, Eagappan S.** Integrative oncology in Indian subcontinent: an overview. **J Clin Diagn Res.** 2015;9(3):XE01-XE03. doi: 10.7860/JCDR/2015/12185.5714. **Abstract:** Integrative oncology is a combination of one where complementary and alternative medicine (CAM) with conventional cancer treatment modalities is used to manage symptoms, control side-effects and improve the state of mental wellbeing. The ancient Indian medicinal approach in cancer treatment and management has a wide array of herbs and practices. There is an increasing

demand for traditional and natural medicine by the cancer patients. The conventional oncologic surgeons and physicians should be aware of the role of cCAM that are available in Indian subcontinent and provide a treatment that focuses on the physical and mental state of wellness in combating cancer. **Source:**

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4413142/pdf/jcdr-9-XE01.pdf>

131. **Piolo M, Fagot JP, Rivière S, Fagot-Campagna A, Debeugny G, Couzigou P, Alla F.** Homeopathy in France in 2011-2012 according to reimbursements in the French national health insurance database (SNIIRAM). **Fam Pract.** 2015;32(4):442-8. doi: 10.1093/fampra/cmz028. **Background:** The use of homeopathic medicine is poorly described and the frequency of combined allopathic and homeopathic prescriptions is unknown. **Objective:** To analyse data on medicines, prescribers and patients for homeopathic prescriptions that are reimbursed by French national health insurance. **Methods:** The French national health insurance databases (SNIIRAM) were used to analyse prescriptions of reimbursed homeopathic drugs or preparations in the overall French population, during the period July 2011-June 2012. **Results:** A total of 6,705,420 patients received at least one reimbursement for a homeopathic preparation during the 12-month period, i.e. 10.2% of the overall population, with a predominance in females (68%) and a peak frequency observed in children aged 0-4 years (18%). About one third of patients had only one reimbursement, and one half of

patients had three or more reimbursements. A total of 120,110 healthcare professionals (HCPs) prescribed at least one homeopathic drug or preparation. They represented 43.5% of the overall population of HCPs, nearly 95% of general practitioners, dermatologists and pediatricians, and 75% of midwives. Homeopathy accounted for 5% of the total number of drug units prescribed by HCPs. Allopathic medicines were coprescribed with 55% of homeopathic prescriptions. Conclusion: Many HCPs occasionally prescribe reimbursed homeopathic preparations, representing however a small percentage of reimbursements compared to allopathic medicines. About 10% of the French population, particularly young children and women, received at least one homeopathic preparation during the year. In more than one half of cases, reimbursed homeopathic preparations are prescribed in combination with allopathic medicines.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25921648>

132. **Italia S, Brand H, Heinrich J, Berdel D, von Berg A, Wolfenstetter SB. Utilization of complementary and alternative medicine (CAM) among children from a German birth cohort (GINIplus): patterns, costs, and trends of use. BMC Complement Altern Med. 2015;15:49. doi: 10.1186/s12906-015-0569-8.** Background: The use of complementary and alternative medicine (CAM) is widespread among children in Germany and other European countries. Only a few studies are available on trends in

pediatric CAM use over time. The study's objective was to present updated results for prevalence, predictors, and costs of CAM use among German children and a comparison with findings from a previous follow-up of the same birth cohort. Methods: Data were collected for 3013 children on their utilization of medicinal products (during the last 4 weeks) and consultation with CAM providers (in the preceding year) from a German birth cohort study (GINIplus, 15-year follow-up) using a self-administered questionnaire. The reported medicinal CAMs were classified into six categories (homeopathy, herbal drugs, nutritionals, minerals and trace elements, microorganisms, further CAM). Drug prices were traced using pharmaceutical identification numbers (PZNs), or otherwise conservatively estimated. Finally, the results were compared with data obtained from the 10-year follow-up of the same birth cohort study by adopting the identical methodology. Results: In all, 26% of the reported 2489 drugs were medicinal CAM. The 4-week prevalence for homeopathy and herbal drug use was 7.5% and 5.6%, respectively. Some 13.9% of the children used at least one type of medicinal CAM in the preceding 4 weeks. The 1-year prevalence for consultation with CAM providers was 10.8%. From the drugs identified as CAM, 53.7% were homeopathic remedies, and 30.8% were herbal drugs. Factors associated with higher medicinal CAM use were female gender, residing in Munich, and higher maternal education. A homeopathy user utilized on average homeopathic remedies worth EUR 15.28. The

corresponding figure for herbal drug users was EUR 16.02, and EUR 18.72 for overall medicinal CAM users. Compared with the 10-year follow-up, the prevalence of homeopathy use was more than halved (-52%) and dropped substantially for herbal drug use (-36%) and overall CAM use (-38%) as well. Conclusion: CAM use among 15-year-old children in the GINIplus cohort is popular, but decreased noticeably compared with children from the same cohort at the age of 10 years. This is possibly mainly because German health legislation normally covers CAM for children younger than 12 years only. Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4364567/pdf/12906_2015_Article_569.pdf

133. **Michalsen A, Uehleke B, Stange R. Safety and compliance of a complex homeopathic drug (Contramutan N Saft) in the treatment of acute respiratory tract infections: A large observational (non-interventional) study in children and adults focussing on homeopathy specific adverse reactions versus adverse drug reactions. *Regul Toxicol Pharmacol.* 2015;72(2):179-84. doi: 10.1016/j.yrtph.2015.04.002.** Background: This non-interventional study was performed to generate data on safety and treatment effects of a complex homeopathic drug (Contramutan N Saft). Patients and methods: 1050 outpatients suffering from common cold were treated with the medication for 8 days. The study was conducted in 64 outpatient practices of medical doctors trained in CAM. Tolerability, compliance and the treatment effects were assessed by the

physicians and by patient diaries. Adverse events were collected and assessed with specific attention to homeopathic aggravation and proving symptoms. Each adverse effect was additionally evaluated by an advisory board of experts. Results: The physicians detected 60 adverse events from 46 patients (4.4%). Adverse drug reactions occurred in 14 patients (1.3%). Six patients showed proving symptoms (0.57%) and only one homeopathic aggravation (0.1%) appeared. The rate of compliance was 84% in average for all groups and the global assessment of the treatment effects attributed to "good" and "very good" in 84.9% of all patients. Conclusions: The homeopathic complex drug was shown to be safe and effective for children and adults likewise. Adverse reactions specifically related to homeopathic principles are very rare. All observed events recovered quickly and were of mild to moderate intensity.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25882307>

134. **Oberbaum M, Frass M, Gropp C. Unequal brothers : are homeopathy and hormesis linked? *Homeopathy.* 2015;104(2):97-100. doi: 10.1016/j.homp.2015.02.003.** Abstract: The debate between those who believe homeopathy and hormesis derive from the same root and those who believe the two are different phenomena is as old as hormesis. It is an emotionally loaded discussion, with both sides fielding arguments which are far from scientific. Careful analysis of the basic paradigms of the two systems questions the claim of the

homeopaths, who find similarities between them. The authors discuss these paradigms, indicating the differences between the claims of homeopathy and hormesis. It is time for thorough and serious research to lay this question to rest. One possible approach is to compare the activity of a hormetic agent, prepared in the usual way, with that of the same agent in the same concentration prepared homeopathically by serial dilution and succussion.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869974>

135. **Calabrese EJ. Hormesis within a mechanistic context. *Homeopathy*. 2015;104(2):90-6. doi: 10.1016/j.homp.2015.01.002.** Abstract: This paper provides an assessment of the mechanistic foundations of hormesis and how such understandings evolved over the course of the past century. Particular emphasis is placed on recent developments particularly with respect to receptor-based and cell signaling-based pathways. Of particular importance is that the quantitative feature of the hormetic dose response are independent of mechanism.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869973>

136. **Calabrese EJ. Historical foundations of hormesis. *Homeopathy*. 2015;104(2):83-9. doi: 10.1016/j.homp.2015.01.001.** Abstract: The present paper provides an historical assessment of the concept of hormesis and its relationship to homeopathy and modern medicine. It is argued that the dose-response concept was profoundly influenced by the

conflict between homeopathy and traditional medicine and that decisions on which dose-response model to adopt were not based on "science" but rather on historical antipathies. While the historical dispute between homeopathy and traditional medicine has long since subsided, their impact upon the field has been enduring and generally unappreciated, profoundly adversely affecting current drug development, therapeutic strategies and environmental risk assessment strategies and policies.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869972>

137. **Calabrese EJ. Hormesis: principles and applications. *Homeopathy*. 2015;104(2):69-82. doi: 10.1016/j.homp.2015.02.007.** Abstract: Hormesis has emerged as a central concept in biological and biomedical sciences with significant implications for clinical medicine and environmental risk assessment. This paper assesses the historical foundations of the dose-response including the threshold, linear and hormetic models, the occurrence and frequency of the hormetic dose response in the pharmacological and toxicological literature, its quantitative and temporal features, and underlying mechanistic bases. Based upon this integrative foundation the application of hormesis to the process of risk assessment for non-carcinogens and carcinogens is explored.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25869971>

138. **van Haselen RA. Towards improving the reporting quality of clinical case reports in complementary medicine: assessing and illustrating the need for guideline development. Complement Ther Med. 2015;23(2):141-8. doi: 10.1016/j.ctim.2015.01.009.** Background: Case reports have had a varying level of recognition as a source of evidence throughout the history of medicine. In recent years, there has been a revival of interest in clinical case reports in both conventional and complementary medicine. There is a need to further improve the reporting quality of clinical case reports of different Complementary and Alternative Medicine (CAM) therapies. Objectives: To provide an overview of the different objectives for clinical case reports, identify those that are most relevant for CAM, and to develop a conceptual framework for purpose orientated clinical case reporting guidelines for CAM therapies. To practically illustrate the chosen approach by developing a clinical case reporting guideline for homeopathic cases. Methods: The various objectives of clinical case reports were described by Prof. Milos Jenicek, and the potential relevance of these objectives for CAM were discussed and graded by a mixed panel of experts. A conceptual framework for developing clinical case reporting guidelines for CAM treatments with specific objectives is proposed. The aim is to integrate both 'generic' and 'CAM therapy specific' quality items. This

framework has been practically applied to the development of a reporting guideline for clinical case reports in homeopathy which will be reported in a second article. Results: An overview is given of the clinical case reporting literature. The conceptual framework for the development of purpose orientated CAM clinical case reporting guidelines is presented. This framework is based on alignment with the recently published 'generic' CARE guideline for reporting of clinical case reports, whilst addressing the CAM specific elements at the same time. Conclusions: The scope and importance of clinical case reporting guideline development in CAM is illustrated. A conceptual framework for developing CAM specific clinical case reporting guidelines was established. It has been implemented using homeopathy as an illustration, and this will be reported in a separate article. Further improvements in clinical case reporting in CAM will greatly contribute to CAM research and education, as well as to improved patient care.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25847551>

139. **Stub T, Salamonsen A, Kristoffersen A, Musial F. How to handle worsening of condition during treatment - risk assessment in homeopathic practice. Forsch Komplementmed. 2015;22(1):30-5. doi: 10.1159/000377644.** Abstract: Even though homeopathy is regarded as a harmless intervention, homeopathic practice may not be entirely risk-free. Risk in homeopathy can be divided into direct and

indirect risk. Direct risk refers to traditional adverse effects of an intervention; indirect risk is related to adverse effects in a treatment context, e.g. the practitioner. Available data suggest that the risk profile of homeopathic remedies in ultra-molecular potencies is minor, but there is a potential for indirect risk related to homeopathic practice. The concept of 'homeopathic aggravation' which is unique for homeopathy may impose a particular risk as it allows the health status of the patients to deteriorate before there is a possible improvement. In that respect it is imperative to distinguish homeopathic aggravations from adverse effects. In a general risk evaluation of the homeopathic treatment it may be useful to assess the patient's symptoms in accordance with the natural course of disease and to evaluate any negative deviation from the normal curve as a possible adverse effect of the treatment. It is imperative that more emphasis is placed on patient safety during the education in homeopathy, and that students are trained to identify serious and red flag situations.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25824402>

140. **Bellavite P. Homeopathy and integrative medicine: keeping an open mind. *J Med Person*. 2015;13(1):1-6.** Abstract: Some physicians have incorporated some forms of complementary and alternative medicine (CAM) or related medicinal products in their clinical practices, suggesting that an unconventional treatment approach might be seen as an integration rather than as an alternative to standard medical practice.

Among the various CAMs, homeopathy enjoys growing popularity with the lay population, but it is not acknowledged by academia or included in medical guidelines. The major problem is to establish the effectiveness of this clinical approach using the strict criteria of evidence-based medicine. This issue of the *Journal of Medicine and the Person* collects contributions from some of the most prestigious centers and research groups working in the field of homeopathy and integrative medicine. These contributions are not specialized information but are of general interest, focusing on this discipline as one of the emerging fields of personalized medical treatment.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4363517/pdf/12682_2014_Article_198.pdf

141. **Kulkarni RS, Arun PD, Rai R, Kanth VS, Sargaiyan V, Kandasamy S. Awareness and practice concerning oral cancer among Ayurveda and Homeopathy practitioners in Davangere District: A speciality-wise analysis. *J Nat Sci Biol Med*. 2015;6(1):116-9. doi: 10.4103/0976-9668.149104.** Context: In India, oral cancer accounts for one-third of all cancers. Early detection and immediate intervention can lead to marked reduction in the morbidity and mortality. In India, Ayurveda and homeopathy practitioners are distributed widely in rural and urban areas and are easily accessible. Until date, no assessment on their oral cancer knowledge and practice has been done. Aims: The present study was undertaken to evaluate

the knowledge, awareness, and practice concerning oral cancer. Subjects and methods: Questionnaire comprising 15 questions was distributed to 42 Ayurveda and 38 homeopathy doctors in Davangere District, Karnataka, India, assessing their oral examination habits, knowledge on the risk factors, patient education, clinical signs of the disease and its treatment. Statistical analysis used: The results were analyzed using Chi-square test. Results: Lesser number of the practitioners routinely examined oral mucosa (16.7% and 5.3%, respectively). Fewer advised their patients about the risk factors (2.4% and 2.6%). Less positive response was obtained for the correct method for confirmation of diagnosis (28.6% and 15.8%). Many doctors agreed that they had not undergone training in cancer institute ($P = 0.29$). Twenty-three (54.8%) Ayurveda and 28 (73.7%) homeopathy doctors opined that they did not have sufficient knowledge regarding early detection and prevention of oral cancer and many were desirous of receiving further information (97.6% and 84.2% respectively). Conclusions: This study attempts to highlight the need for improving the oral cancer knowledge and awareness among practicing Ayurveda and homeopathy doctors.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4367020/>

142. **Albert S, Nongrum M, Webb EL, Porter JD, Kharkongor GC. Medical pluralism among indigenous peoples in northeast India - implications for health policy. Trop Med Int Health. 2015;20(7):952-60. doi:**

10.1111/tmi.12499. Objectives: The government of India is promoting and increasing investment in the traditional medicine systems of Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) in the northeast region of India. But there are few empirical data that support this policy decision. This study estimates the awareness and use of the different medical systems in rural Meghalaya, a state in north-east India with a predominantly ethnic tribal population. Method: We conducted a cross-sectional multistage random sample household survey across all districts of Meghalaya. To enable appropriate estimates for the whole of rural Meghalaya, the data were weighted to allow for the probability of selection of households at each stage of the sampling process. Results: Both local tribal medicine and biomedicine were widely accepted and used, but the majority (68.7%, 95% CI: 51.9-81.7) had not heard of AYUSH and even fewer had used it. Tribal medicine was used (79.1%, 95% CI 66.3-88.0), thought to be effective (87.5%, 95% CI: 74.2-94.1) and given in a variety of disorders, including both minor and major diseases. In the 3 months prior to the survey, 46.2% (95% CI: 30.5-62.8) had used tribal medicine. Only 10.5% (95% CI: 6.1-17.6) reported ever using any of the AYUSH systems. Conclusion: Our comparative estimates of the awareness and use of tribal medicine, different systems of AYUSH and of biomedicine among indigenous populations of India question the basis on which AYUSH is promoted in the northeast region of India and in the state of Meghalaya in particular.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25753562>

143. **Slomp Junior H, Feuerwerker LC, Land MG.** Health education or a shared therapeutic project? Health care goes beyond the pedagogical dimension. Cien Saude Colet. 2015;20(2):537-46. doi: **10.1590/1413-81232015202.00512014.**

Abstract: The general objective of this research was to assess the possible contribution of homeopathy to the development of caregiving therapeutic projects in multidisciplinary workshops of permanent education in health, in the context of primary health care. The chosen points of analysis were the series of inconveniences expressed by health workers with respect to their work processes and it was the emergence of the theme of health education in the first meetings with the teams that led to the production of this article. This study discusses the existential territory of "being a health professional" as understood from a concept of education as a significant benchmark, and of a certain interventionist mission as a transcendent value. A progressive waning of the importance of health education was observed during the workshops, sometimes even disappearing from the discussions, as the caregiving therapeutic projects took shape. The conclusion reached is that this waning involved a process of moving towards a pact with the health system user, eventually considered to be a valid interlocutor; and that health care transcends any strictly pedagogical dimension.

Source:

http://www.scielo.br/pdf/csc/v20n2/en_1413-8123-csc-20-02-0537.pdf

144. **Pannek J, Pannek-Rademacher S, Wöllner J.** Use of complementary and alternative medicine in persons with spinal cord injury in Switzerland: a survey study. Spinal Cord. 2015;53(7):569-72. doi: **10.1038/sc.2015.21.**

Study design: Questionnaire-based survey study. Objectives: To evaluate the use of and the satisfaction with complementary and alternative medicine (CAM) techniques in patients with spinal cord injury (SCI). Setting: Rehabilitation Center, Switzerland. Methods: Between may and September 2014, all patients with chronic (>1 year) SCI attending the urologic outpatient clinic were asked to fill in a questionnaire regarding the use of CAM. Results: Of the 103 participants (66 men and 37 women), 73.8% stated that they have used some form of CAM since SCI, with acupuncture and homeopathy being the two techniques that were used most frequently (31% each). The most common indications for CAM use were pain and urinary tract infections (UTIs). CAM was used supplementarily rather than exclusively. Overall satisfaction (85.1%) as well as satisfaction rates for the different indications (pain: 85%; UTI: 90.5%) and for the most frequently used forms of CAM (homeopathy: 90.6%; acupuncture: 78.1%) were high. Conclusion: According to our data, there is a demand for adjunctive CAM procedures for the treatment of medical complications by

persons with SCI. CAM led to high satisfaction levels. On the basis of these results, future research should systematically evaluate the therapeutic potential of the most popular CAM techniques, for example, acupuncture and homeopathy, for the treatment of secondary medical complications of SCI.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25708665>

145. **Saha S, Koley M, Ghosh S, Giri M, Das A, Goenka R. Documentation of prescriptions and clinical outcomes in a homeopathic hospital setting in West Bengal, India. *J Evid Based Complementary Altern Med.* 2015;20(3):180-5. doi: 10.1177/2156587214568459.** Abstract: Documentation of prescriptions and clinical outcomes in routine homeopathic practice is a prerequisite for conducting targeted research in homeopathy. Six homeopathic physicians participated in methodical data collection over a 3-month period in 6 outpatient departments of Mahesh Bhattacharyya Homeopathic Medical College and Hospital, West Bengal, India. A specifically designed Microsoft Excel spreadsheet enabled recording of consecutive appointments-date, patient identity, medical condition/complaint, whether chronic/acute, new/follow-up case, patient-assessed outcome (7-point Likert-type scale: -3 to +3), prescribed homeopathic medication, and whether other medication/s being taken for the condition. Spreadsheets were submitted monthly for data synthesis and analysis. A total of 1972 patients' follow-

up generated data of 2905 appointments, of which 2272 (78.2%) were positive, 183 (6.3%) negative, and 450 (15.5%) showed no change. Strongly positive outcomes (scores of +2/+3) were recorded in osteoarthritis, piles, cough, dysfunctional uterine bleeding, chronic suppurative otitis media, and conjunctivitis. This systematic recording short-listed promising areas of future homeopathic research.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25613329>

146. **Frei H. Homeopathic treatment of multimorbid patients: a prospective outcome study with polarity analysis. *Homeopathy.* 2015;104(1):57-65. doi: 10.1016/j.homp.2014.09.001.** Background: The treatment of multimorbid patients who have a combination of three or more concurrent complaints is one of the core competencies of homeopathy. In this article we introduce the application of polarity analysis (PA) in multimorbidity. PA came to prominence through the Swiss homeopathic ADHD double-blind study, which successfully demonstrated a significant difference between highly dilute homeopathic remedies and placebo. PA enables homeopaths to calculate a relative healing probability, based on Boenninghausen's grading of polar symptoms. After its evaluation in the treatment of a variety of acute and chronic disease, which showed improved results compared to a conventional homeopathic approach, it was a challenge to test PA with multimorbid patients. Since such patients almost invariably have a multiple symptoms,

the question was whether we can nevertheless successfully use Polarity Analysis or whether the method is rendered ineffective by the multitude of symptoms. Methods: We treated 50 multimorbid patients with PA and prospectively followed them over one year. Results: 43 patients (86%) completed the observation period, achieving an average improvement of 91% in their initial symptoms. Six patients dropped out, and one did not achieve an improvement of 80%, and was therefore also counted as a treatment failure. The cost of homeopathic treatment was 41% of projected equivalent conventional treatment. Conclusions: Polarity Analysis is an effective method for treating multimorbidity. The multitude of symptoms does not prevent the method from achieving good results. Homeopathy may be capable of taking over a considerable proportion of the treatment of multimorbid patients, at lower costs than conventional medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25576272>

147. **Rossi E, Vita A, Baccetti S, Di Stefano M, Voller F, Zanobini A. Complementary and alternative medicine for cancer patients: results of the EPAAC survey on integrative oncology centres in Europe. *Support Care Cancer*. 2015;23(6):1795-806. doi: 10.1007/s00520-014-2517-4.** Background: The Region of Tuscany Health Department was included as an associated member in WP7 "Healthcare" of the European Partnership for Action Against Cancer (EPAAC), initiated by the EU Commission in

2009. Aims: The principal aim was to map centres across Europe prioritizing those that provide public health services and operating within the national health system in integrative oncology (IO). Methods: A cross-sectional descriptive survey design was used to collect data. A questionnaire was elaborated concerning integrative oncology therapies to be administered to all the national health system oncology centres or hospitals in each European country. These institutes were identified by convenience sampling, searching on oncology websites and forums. The official websites of these structures were analysed to obtain more information about their activities and contacts. Results: Information was received from 123 (52.1 %) out of the 236 centres contacted until 31 December 2013. Forty-seven out of 99 responding centres meeting inclusion criteria (47.5 %) provided integrative oncology treatments, 24 from Italy and 23 from other European countries. The number of patients seen per year was on average 301.2 ± 337 . Among the centres providing these kinds of therapies, 33 (70.2 %) use fixed protocols and 35 (74.5 %) use systems for the evaluation of results. Thirty-two centres (68.1 %) had research in progress or carried out until the deadline of the survey. The complementary and alternative medicines (CAMs) more frequently provided to cancer patients were acupuncture 26 (55.3 %), homeopathy 19 (40.4 %), herbal medicine 18 (38.3 %) and traditional Chinese medicine 17 (36.2 %); anthroposophic medicine 10 (21.3 %); homotoxicology 6 (12.8 %); and other

therapies 30 (63.8 %). Treatments are mainly directed to reduce adverse reactions to chemo-radiotherapy (23.9 %), in particular nausea and vomiting (13.4 %) and leucopenia (5 %). The CAMs were also used to reduce pain and fatigue (10.9 %), to reduce side effects of iatrogenic menopause (8.8 %) and to improve anxiety and depression (5.9 %), gastrointestinal disorders (5 %), sleep disturbances and neuropathy (3.8 %). Conclusions: Mapping of the centres across Europe is an essential step in the process of creating a European network of centres, experts and professionals constantly engaged in the field of integrative oncology, in order to increase, share and disseminate the knowledge in this field and provide evidence-based practice.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25471177>

148. **Milgrom LR. The vital force "reincarnated": modeling entelexy as a quantized spinning gyroscopic metaphor for integrated medicine. *Adv Exp Med Biol.* 2015;821:111-23. doi: 10.1007/978-3-319-08939-3_15.**

Abstract: The ancient concept of the Vital Force receives a modern incarnation as a metaphorical multidimensional spinning gyroscope. The consequences for a different understanding of health and disease are examined in the context of integrated medicine.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25416115>

149. **Boatto G, Trignano C, Burrai L, Spanu A, Nieddu M. Effects of homeopathic**

mother tinctures on breath alcohol testing. *J*

***Forensic Sci.* 2015;60 Suppl 1:S231-3. doi: 10.1111/1556-4029.12662.**

Abstract: In some countries, it is illegal to drive with any detectable amount of alcohol in blood; in others, the legal limit is 0.5 g/L or lower. Recently, some defendants charged with driving under the influence of alcohol and have claimed that positive breath alcohol test results were due to the ingestion of homeopathic mother tinctures. These preparations are obtained by maceration, digestion, infusion, or decoction of herbal material in hydroalcoholic solvent. A series of tests were conducted to evaluate the alcoholic content of three homeopathic mother tinctures and their ability to produce inaccurate breath alcohol results. Nine of 30 subjects gave positive results (0.11-0.82 g/L) when tests were taken within 1 min after drinking mother tincture. All tests taken at least 15 min after the mother tincture consumption and resulted in alcohol-free readings. An observation period of 15-20 min prior to breath alcohol testing eliminates the possibility of false-positive results.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25387897>

150. **Franik S, Huidekoper HH, Visser G, de Vries M, de Boer L, Hermans-Peters M, Rodenburg R, Verhaak C, Vlieger AM, Smeitink JA, Janssen MC, Wortmann SB. High prevalence of complementary and alternative medicine use in patients with genetically proven mitochondrial disorders. *J Inherit Metab Dis.* 2015;38(3):477-82. doi: 10.1007/s10545-014-9773-9.**

Abstract:

Despite major advances in understanding the pathophysiology of mitochondrial diseases, clinical management of these conditions remains largely supportive, and no effective treatment is available. We therefore assumed that the burden of disease combined with the lack of adequate treatment leaves open a big market for complementary and alternative medicine use. The objective of this study was to evaluate the use and perceived effectiveness of complementary and alternative medicine in children and adults with genetically proven mitochondrial disease. The reported use was surprisingly high, with 88% of children and 91% of adults having used some kind of complementary and alternative medicine in the last 2 years. Also, the mean cost of these treatments was impressive, being <euro>489/year for children and <euro>359/year for adult patients. Over-the-counter remedies (e.g., food supplements, homeopathy) and self-help techniques (e.g., Reiki, yoga) were the most frequently used complementary and alternative therapies in our cohort: 54% of children and 60% of adults reported the various complementary and alternative medicine therapies to be effective. Given the fact that currently no effective treatment exists, further research toward the different therapies is needed, as our study clearly demonstrates that such therapies are highly sought after by affected patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25303853>

151. **Kowall B, Breckenkamp J, Berg-Beckhoff G. General practitioners using complementary and alternative medicine differ from general practitioners using conventional medicine in their view of the risks of electromagnetic fields: a postal survey from Germany. *J Prim Care Community Health*. 2015;6(1):21-8. doi: 10.1177/2150131914546332.** Objective: General practitioners (GPs) play a key role in consulting patients worried about health effects of electromagnetic fields (EMF). We compared GPs using conventional medicine (COM) with GPs using complementary and alternative medicine (CAM) concerning their perception of EMF risks. Moreover, we assessed whether the kind of alternative medicine has an influence on the results. Methods: A total of 2795 GPs drawn randomly from lists of German GPs were sent an either long or short self-administered postal questionnaire on EMF-related topics. Adjusted logistic regression models were fitted to assess the association of an education in alternative medicine with various aspects of perceiving EMF risks. Results: Concern about EMF, misconceptions about EMF, and distrust toward scientific organizations are more prevalent in CAM-GPs. CAM-GPs more often falsely believed that mobile phone use can lead to head warming of more than 1°C (odds ratio [OR] = 2.2, 95% confidence interval [CI] = 1.5-3.3), more often distrusted the Federal Office for Radiation Protection (OR = 2.2, 95% CI = 1.4-3.6), were more often concerned about

mobile phone base stations (OR = 2.4, 95% CI = 1.6-3.6), more often attributed own health complaints to EMF (OR = 3.2, 95% CI = 1.8-5.6), and more often reported at least 1 EMF consultation (OR = 2.5, 95% CI = 1.6-3.9). GPs using homeopathy perceived EMF as more risky than GPs using acupuncture or naturopathic treatment. Conclusion: Concern about common EMF sources is highly prevalent among German GPs. CAM-GPs perceive stronger associations between EMF and health problems than COM-GPs. There is a need for evidence-based information about EMF risks for GPs and particularly for CAM-GPs. This is the precondition that GPs can inform patients about EMF and health in line with current scientific knowledge.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25142575>

152. **Chandhiok N, Joglekar N, Shrotri A, Choudhury P, Chaudhury N, Singh S. Task-shifting challenges for provision of skilled birth attendance: a qualitative exploration. *Int Health*. 2015;7(3):195-203. doi: 10.1093/inthealth/ihu048.** Background: Shortage of skilled birth attendants (SBA) is one of the determinants of maternal mortality in India. To combat this shortage, innovative task-shifting strategies to engage providers of the Indian system of medicine (Ayurveda and Homeopathy), called AYUSH practitioners (AP), to provide SBA services is being implemented. Methods: Engagement of APs for SBA service provision was assessed in 3 states of India (Maharashtra, Rajasthan and Odisha) through 73 in-depth interviews (37 with APs and 36 with programme

managers). The interviews explored the providers' SBA training experience, barriers for SBA service provision, workplace and community acceptance, and the perspective of programme managers on the competence and quality of SBA services provided. Results: SBA training led to skill enhancement with adoption of appropriate maternal and newborn care practices. A dedicated trainer, more hands-on practice, and strengthening training on newborn care practices and management of complications emerged as the training needs. Conditional involvement in SBA-related work, a discriminatory attitude at the workplace and lack of legal/regulatory authorisation were identified as barriers to the inclusion of APs in SBA service provision. Conclusions: Quality skill enhancement measures, an enabling work environment, a systematic task-shifting process, role definition, supportive supervision and credentialing could be key for the integration of APs and their acceptance in the health system.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25091026>

153. **Levy D, Gadd B, Kerridge J, Komesaroff PA. A gentle ethical defence of homeopathy. *J Bioeth Inq*. 2015;12(2):203-9. doi: 10.1007/s11673-014-9563-y.** Abstract Recent discourses about the legitimacy of homeopathy have focused on its scientific plausibility, mechanism of action, and evidence base. These, frequently, conclude not only that homeopathy is scientifically baseless, but that it is "unethical." They have also diminished patients' perspectives,

values, and preferences. We contend that these critics confuse epistemic questions with questions of ethics, misconstrue the moral status of homeopaths, and have an impoverished idea of ethics-one that fails to account either for the moral worth of care and of relationships or for the perspectives, values, and preferences of patients. Utilitarian critics, in particular, endeavour to present an objective evaluation-a type of moral calculus-quantifying the utilities and disutilities of homeopathy as a justification for the exclusion of homeopathy from research and health care. But these critiques are built upon a narrow formulation of evidence and care and a diminished episteme that excludes the values and preferences of researchers, homeopaths, and patients engaged in the practice of homeopathy. We suggest that homeopathy is ethical as it fulfils the needs and expectations of many patients; may be practiced safely and prudentially; values care and the virtues of the therapeutic relationship; and provides important benefits for patients.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/25037244>

154. **Givati A. Performing 'pragmatic holism': Professionalisation and the holistic discourse of non-medically qualified acupuncturists and homeopaths in the United Kingdom. Health (London). 2015;19(1):34-50. doi: 10.1177/1363459314530739.** Abstract: Complementary and alternative medicine practitioners have often utilised 'holism' as a key identification mark of their practice,

distancing themselves from 'the reductionist biomedicine'. However, the past couple of decades have witnessed increased engagement of several complementary and alternative medicines in professionalisation, which includes a degree of biomedical alignment while 'reducing' holistic claims in order to provide practice with a 'credible outlook' and move closer to the mainstream, a development which challenges the role of holism in complementary and alternative medicine practices. This article explores the strategies by which two groups of complementary and alternative medicine practitioners, namely, non-medically qualified acupuncturists and homeopaths in the United Kingdom, pragmatically accommodate holistic notions as a professional resource, a process of negotiation between maintaining their holistic premise, on the one hand, and the drive to professionalise and enhance their societal status, on the other. Based on in-depth interviews with non-medically qualified acupuncture and homeopathy practitioners and school principals, textual analysis of practitioners' web sites and observation of practice, the findings demonstrate the dynamic approach to 'holism' in complementary and alternative medicine practice. This discourse, through which practitioners use a range of strategies in order to 'narrow' or 'expand' their holistic expression, can be described as 'pragmatic holism', by which they try to make gains from the formalisation/standardisation processes, without losing the therapies' holistic outlook and appeal.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24821927>

155. **Gaitan-Sierra C, Hyland ME. Common Factor Mechanisms in Clinical Practice and Their Relationship with Outcome. Clin Psychol Psychother. 2015;22(3):258-66. doi: 10.1002/cpp.1894.** Abstract: This study investigates three common factor mechanisms that could affect outcome in clinical practice: response expectancy, the affective expectation model and motivational concordance. Clients attending a gestalt therapy clinic (30 clients), a sophrology (therapeutic technique) clinic (33 clients) and a homeopathy clinic (31 clients) completed measures of expectancy and the Positive Affect and Negative Affect Schedule (PANAS) before their first session. After 1 month, they completed PANAS and measures of intrinsic motivation, perceived effort and empowerment. Expectancy was not associated with better outcome and was no different between treatments. Although some of the 54 clients who endorsed highest expectations showed substantial improvement, others did not: 19 had no change or deteriorated in positive affect, and 18 had the same result for negative affect. Intrinsic motivation independently predicted changes in negative affect ($\beta = -0.23$). Intrinsic motivation ($\beta = 0.24$), effort ($\beta = 0.23$) and empowerment ($\beta = 0.20$) independently predicted positive affect change. Expectancy ($\beta = -0.17$) negatively affected changes in positive affect. Clients found gestalt and sophrology to be more intrinsically motivating, empowering and

effortful compared with homeopathy. Greater improvement in mood was found for sophrology and gestalt than for homeopathy clients. These findings are inconsistent with response expectancy as a common factor mechanism in clinical practice. The results support motivational concordance (outcome influenced by the intrinsic enjoyment of the therapy) and the affective expectation model (high expectations can lead for some clients to worse outcome). When expectancy correlates with outcome in some other studies, this may be due to confound between expectancy and intrinsic enjoyment. Key practitioner message: Common factors play an important role in outcome. Intrinsic enjoyment of a therapeutic treatment is associated with better outcome. Active engagement with a therapeutic treatment improves outcome. Unrealistic expectations about a therapeutic treatment can have a negative impact on outcome.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/24634051>

156. **Tarcitano CM Filho, Waisse S. New documental evidence on the history of homeopathy in Latin America: a case study of links between Rio de Janeiro and Buenos Aires. Hist Cienc Saude Manguinhos. 2016. doi: 10.1590/S0104-59702016005000017.** Abstract: Homeopathy began to spread soon after it was formulated by Samuel Hahnemann in the early 1800s, reaching the Southern Cone in the 1830s. In processes of this kind, one figure is often cited as being responsible for introducing it, often attaining quasi-mythical

status. Little is known, however, about how homeopathy reached Argentina at that time. Through archival research, we discovered that medical and lay homeopaths circulated between Rio de Janeiro and Buenos Aires. Given the well-known proselytizing of the circles gravitating around lay homeopaths B. Mure and J.V. Martins in Rio de Janeiro, the documents indicate that this movement actually went as far as Argentina, which had not been confirmed until now.

Source:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-59702016005004101&lng=en&nrm=iso&tling=en

157. **Samal J, Dehury RK. An Evaluation on Medical Education, Research and Development of AYUSH Systems of Medicine through Five Year Plans of India. J Clin Diagn Res. 2016;10(5):IE01-IE05. doi: 10.7860/JCDR/2016/18194.7793.**

Introduction: Indian system of medicine has its origin in India. The system is currently renamed as AYUSH, an acronym for Ayurveda, Yoga & Naturopathy, Unani, Sidha and Homeopathy. These are the six Indian systems of medicine prevalent and practiced in India and in few neighboring Asian countries. Objective: The primary objective of this review was to gain insight in to the prior and existing initiatives which would enable reflection and assist in the identification of future change. Materials and methods: A review was carried out based on the five year plan documents, obtained from the planning commission web portal of Govt. of India, on medical education, research and development of AYUSH systems of medicine.

Results: Post independence, the process of five year planning took its birth with the initiation of long term planning in India. The planning process embraced all the social and technology sectors in it. Since the beginning of five year planning, health and family welfare planning became imperative as a social sector planning. Planning regarding Indian Systems of Medicine became a part of health and family welfare planning since then. During the entire planning process a progressive path of development could be observed as per this evaluation. A relatively sluggish process of development was observed up to seventh plan however post eighth plan the growth took its pace. Eighth plan onwards several innovative development processes could be noticed. Despite the relative developments and growth of Indian systems of medicine these systems have to face lot of criticism and appraisal owing to their various characteristic features. In the beginning the system thrived with great degree of uncertainty, as described in 1(st) five year plan, however progressed ahead with a vision to be a globally accepted system, as envisaged in 11(th) five year plan. Conclusion: A very strong optimistic approach in spreading India's own medical heritage is the need of the hour. The efforts are neither completely insufficient nor sufficient enough; hence a continuous endeavor for the revival and dissemination of India's own medical inheritance for the welfare of the society at large is highly desirable.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4948421/pdf/jcdr-10-IE01.pdf>

158. **Kannan S, Gowri S. Clinical trials in allied medical fields: A cross-sectional analysis of World Health Organization International Clinical Trial Registry Platform. J Ayurveda Integr Med. 2016;7(1):48-52. doi: 10.1016/j.jaim.2015.09.003.** Background:

Clinical trials are mandatory for evidence-based practice. Hardly, any data are available regarding the number of clinical trials and their methodological quality that are conducted in allied fields of medicine. Objective: The present study was envisaged to assess methodological quality of trials in allied medical fields. Materials and methods: Registered clinical trials in World Health Organization International Clinical Trials Registry Platform

(<http://apps.who.int/trialsearch/AdvSearch.aspx>) in the following fields were extracted: Acupuncture; Ayurveda; biofeedback; complementary and alternate medicine; herbal; homeopathy; massage; naturopathy; Reiki; Siddha; Unani; and yoga. The eligible studies were assessed for the following key details: Type of sponsors; health condition in which the trial has been conducted; recruitment status; study design; if randomization was present, method of randomization and allocation concealment; single or multi-centric; retrospective or prospective registration; and publication status in case of completed studies. Results: A total of 276 clinical trials were registered majority of which have been proposed to be conducted in the field of oncology and

psychiatry. Most of the clinical trials were done in single centers (87.75%), and almost all the clinical trials were investigator-initiated with pharmaceutical company sponsored studies contributing to a maximum extent of 24.5%. A large majority of the study designs were interventional where almost 85% of the studies were randomized controlled trials. However, an appropriate method of randomization was mentioned only in 27.4%, and the rate of allocation concealment was found to be just 5.5%. Only 1-2% of the completed studies were published, and the average rate of retrospective registration was found to be 23.6% in various fields. Conclusion: The number of clinical trials done in allied fields of medicine other than the allopathic system has lowered down, and furthermore focus is required regarding the methodological quality of these trials and more support from various organizations.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4910572/>

159. **Davidson J, Jonas W. Individualized Homeopathy: A Consideration of Its Relationship to Psychotherapy. J Altern Complement Med. 2016.** Objectives: The benefit and potential mechanisms of action of homeopathy have long been debated. Almost entirely neglected has been the study of individualized homeopathy (IH) as a form of psychotherapy, which incorporates factors that are common to most therapies while using processes that are specific to IH. Methods: Recent research into the

therapeutic components of IH is reviewed; similarities and differences between IH and other forms of psychotherapy are also described. Results: IH includes elements found in humanistic therapy and narrative medicine and additionally incorporates idiographic material in treatment selection. It is structured in a manner that takes maximum advantage of the components of the placebo effect, which could further expand its effectiveness beyond those conditions thought usually amenable to psychotherapy. Conclusions: It is possible that IH entails specific psychotherapeutic processes in addition to possible therapeutic action of the homeopathic remedy, but the relative contributions of each remain to be determined. Suggestions are given for future research.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27285053>

160. **Friedrich C, Meyer U, Seyfang C. The company Willmar Schwabe in the Nazi era. Med Ges Gesch. 2016;34:209-40.** Abstract: This essay follows the history of the Schwabe Company between 1933 and 1945 when it, like all other companies at the time, had to subject to the state-enforced conformity ('Gleichschaltung'). While Willmar Schwabe II (1878-1935), the company's second director, kept clear of Nazi politics, both of his sons, who succeeded him at an early age, became members of the Nazi party: Willmar III (1907-1983) probably from initial conviction and Wolfgang (1912-2000), who joined in 1937, more likely for opportunistic reasons. The two lay journals published by Schwabe--the

Leipziger Populäre Zeitschrift für Homöopathie and the Biochemische Monatsblätter--embraced the Nazi ideology more thoroughly than the general homeopathic journal Allgemeine Homöopathische Zeitung, including above all contributions on racial hygiene. Our research has revealed that Schwabe only employed foreign workers from 1942 on, that their number was much lower, at 0.9 per cent in 1942 and 3.6 per cent in 1944, than that of other pharmaceutical companies and that their pay hardly differed from that of German workers. The sales and profit figures investigated have shown that the company did not profit exceptionally from the new Nazi health policies ('Neue Deutsche Heilkunde'): while its sales and profits rose in the Nazi era due to the increased use of medication among the civil population during wartime, the drugs produced by Schwabe remained marginal also during the war, as is apparent also from its modest deliveries to the army. All in all one can conclude that the company offered neither resistance nor particular support to the Nazi ideology.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27263220>

161. **Kreher S, Schlott M, Schlott T. Protestant clergymen among Hahnemann's clientele. Patient histories in letters. Med Ges Gesch. 2016;34:111-207.** Abstract: As part of the research project, developments in the history of science and in the regional and ecclesiastic history of the late feudal petty state of Köthen-Anhalt have been assessed and numerous documents of the Nagel and

Mühlenbein family histories examined that place the transcribed patient letters of the two Protestant clergymen within the context of the Hahnemann Archives. These findings complement and extend previous insights into Hahnemann's Köthen clientele, especially when it comes to the structure and milieu of the local clerical elite. Inspired by the interpretive methods of sequential textual analysis, form and content of the letters of the two clergymen and their relatives were also investigated as methodically structured lines of communication. The body of sources published here presents--embedded in the body-image (of sickness and health) prevalent at the time--the medical cultures of educated patients as well as the increasingly professionalized medical practices of Samuel Hahnemann in a flourishing urban doctor's surgery. The correspondence between the pastors Albert Wilhelm Gotthilf Nagel (1796-1835) and August Carl Ludwig Georg Mühlenbein (1797-1866), presented here in a standard edition, has been investigated at Fulda University as part of the project 'Homöopathisches Medicinieren zwischen alltäglicher Lebensführung und professioneller Praxis' ('Homeopathic medicine between everyday use and professional practice'). Of the altogether 78 transcribed documents, 53 are letters written by either of the two pastors, 16 are patient journals by Samuel Hahnemann, 9 letters by the pastors' wives and Mühlenbein's mother. The two series of letters, originally composed between 1831 and 1833 in old German

cursive script, can now be used as sources for research into the history of homeopathy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27263219>

162. **Manchanda R, Koley M, Saha S, Sarkar D, Mondal R, Thakur P, Biswas D, Rawat BS, Rajachandrasekar B, Mittal R. Patients' Preference for Integrating Homoeopathy Services within the Secondary Health Care Settings in India: The Part 3 (PPIH-3) Study. J Evid Based Complementary Altern Med. 2016. pii: 2156587216650116. Abstract: Indian patients' preference for integrated homoeopathy services remains underresearched. Two earlier surveys revealed favorable attitude toward and satisfaction from integrated services. The objectives of this study were to examine knowledge, attitudes, and practice of homoeopathy and to evaluate preference toward its integration into secondary-level health care. A cross-sectional survey was conducted during May to October 2015 among 659 adult patients visiting randomly selected secondary-level conventional health care setups in Kolkata, Mumbai, Kottayam, and New Delhi (India) using a self-administered 24-item questionnaire in 4 local vernaculars (Bengali, Marathi, Malayalam, and Hindi). Knowledge and practice scores were compromised; attitude scores toward integration and legal regulation were high. Respondents were uncertain regarding side effects of homoeopathy and concurrent use and interactions with conventional medicines. A total of 82.40% (95% confidence**

interval = 79.23, 85.19) of the participants were in favor of integrating homeopathy services.

Preference was significantly higher in Delhi and lower in Kottayam. Probable strategic measures for further development of integrated models are discussed.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27215693>

163. **Eizayaga JE, Waisse S. What do homeopathic doctors think of vaccines? An international online survey. Homeopathy. 2016;105(2):180-5. doi: 10.1016/j.homp.2015.11.001.** Background and objectives: Parental refusal to vaccinate is a cause of serious concern. Use of homeopathy is believed to be a relevant reason for parents to refuse to vaccinate. However, vaccination is one of the main gaps dividing between medically qualified or not homeopathic practitioners. The present study sought to investigate the attitude of homeopathic doctors towards vaccination and associated variables. Methods: An international online survey was conducted with homeopathic doctors by means of an anonymous self-reported questionnaire in Portuguese or Spanish. Questions investigated sociodemographic and professional characteristics, overall opinion on vaccination and on some specific vaccines. Results: A total of 512 responses were obtained, 77.5% of respondents were from Latin American countries, 16.8% from Spain, with small numbers from several other countries. About 75.6% of the respondents considered vaccination safe, effective and

necessary, while 12.5% stated they would not recommend vaccination under any circumstance. The variables significantly correlated with positive attitude towards vaccination were: working in the public health system ($p=0.04$) and homeopathy not the main medical activity ($p=0.005$). Homeopaths from Brazil, where homeopathy is officially accredited, were more favorable to vaccination compared to respondents from countries where homeopathy has inferior status ($p<0.001$). Conclusion: The results show that there is no contradiction between homeopathy and primary prevention by means of vaccination.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27211325>

164. **Elfimov MA, Kotenko KV, Korchazhkina NB, Filatova EV, Portnov VV, Chervinskaya AV, Mikhailova AA. Complementary methods of rehabilitation in borderline mental disorders. Med Tr Prom Ekol. 2016;(2):1-6.** Abstract: The article covers treatment results of 417 patients (186 males and 231 females) aged 18 to 71 years, with borderline mental disorders. Findings are that using specified complementary methods, more when treatment complex is applied, causes better psycho-emotional state in patients with borderline mental disorders, that is supported by results of medical diagnostic tests including psychometry tests (abridged minnesota multiphasic personality inventory, Beck depression inventory, Spielberger-Hanin, test "feeling, activity, mood").

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27164743>

165. **Black DS, Lam CN, Nguyen NT, Ihenacho U, Figueiredo JC. Complementary and Integrative Health Practices Among Hispanics Diagnosed with Colorectal Cancer: Utilization and Communication with Physicians. J Altern Complement Med. 2016;22(6):473-9. doi: 10.1089/acm.2015.0332.** Objective:

Complementary and integrative health (CIH) use among Hispanic adults with colorectal cancer (CRC) diagnosis is not well documented. Understanding the prevalence and patterns of CIH use among Hispanics offers insights to uncover potential needs for clinical services. Design: Participants were age 21 years or older with a first-time diagnosis of CRC from population-based cancer registries in California. In-person and/or telephone-based interviews were administered to collect data on CIH use. Demographic and clinical diagnosis data were abstracted from medical records. Descriptive statistical and logistic regression was used to analyze the frequencies and associations between selected patient characteristics and CIH use. Results: Among 631 Hispanic patients, 40.1% reported ever using CIH. Herbal products/dietary supplements were used most often (35.3%), followed by bodywork (16.5%), mind-body practices (7.8%), and homeopathy (6.7%). About 60% of participants reported CIH use to address specific health conditions; however, most patients did not discuss CIH use with their physicians (76.3%). Women reported higher

CIH use than did men (45.1% versus 35.9%; odds ratio, 1.49 [95% confidence interval, 1.07-2.08]; $p = 0.02$). CIH use did not differ by clinical stage, time since diagnosis, or preferred language. Conclusions: CIH use is prevalent among Hispanic patients with CRC, especially women. Little communication about CIH use occurs between participants and their healthcare providers. Efforts aimed at improving integrative oncology services provide an opportunity to address such gaps in healthcare service.

Source:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4921899/pdf/acm.2015.0332.pdf>

166. **Grimaldi-Bensouda L, Abenhaim L, Massol J, Guillemot D, Avouac B, Duru G, Lert F, Magnier AM, Rossignol M, Rouillon F, Begaud B EPI3-LA-SER group. Homeopathic medical practice for anxiety and depression in primary care: the EPI3 cohort study. BMC Complement Altern Med. 2016;16:125. doi: 10.1186/s12906-016-1104-2.** Background: The purpose of the study was to compare utilization of conventional psychotropic drugs among patients seeking care for anxiety and depression disorders (ADDs) from general practitioners (GPs) who strictly prescribe conventional medicines (GP-CM), regularly prescribe homeopathy in a mixed practice (GP-Mx), or are certified homeopathic GPs (GP-Ho). Methods: This was one of three epidemiological cohort studies (EPI3) on general practice in France, which included GPs and their patients consulting for ADDs (scoring 9 or more in the Hospital Anxiety and Depression Scale, HADS). Information on all

medication utilization was obtained by a standardised telephone interview at inclusion, 1, 3 and 12 months. Results: Of 1562 eligible patients consulting for ADDs, 710 (45.5 %) agreed to participate. Adjusted multivariate analyses showed that GP-Ho and GP-Mx patients were less likely to use psychotropic drugs over 12 months, with Odds ratio (OR) = 0.29; 95 % confidence interval (CI): 0.19 to 0.44, and OR = 0.62; 95 % CI: 0.41 to 0.94 respectively, compared to GP-CM patients. The rate of clinical improvement (HADS <9) was marginally superior for the GP-Ho group as compared to the GP-CM group (OR = 1.70; 95 % CI: 1.00 to 2.87), but not for the GP-Mx group (OR = 1.49; 95 % CI: 0.89 to 2.50). Conclusions: Patients with ADD, who chose to consult GPs prescribing homeopathy reported less use of psychotropic drugs, and were marginally more likely to experience clinical improvement, than patients managed with conventional care. Results may reflect differences in physicians' management and patients' preferences as well as statistical regression to the mean.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4855343/pdf/12906_2016_Article_1104.pdf

167. **van Heerden HJ, Razlog R, Pellow J. Pilot Study on the Homeopathic Treatment of Binge Eating in Males. *Altern Ther Health Med.* 2016;22 Suppl 1:8-13.** Abstract: Context: Frequent binge eating is often a symptom of an underlying eating disorder, such as bulimia nervosa (BN) or binge eating disorder (BED). The role of homeopathy in

the treatment of binge eating remains poorly explored. Objective: The study intended to measure the efficacy of individualized homeopathic treatment for binge eating in adult males. Design: This case study was a 9-wk pilot using an embedded, mixed-methods design. A 3-wk baseline period was followed by a 6-wk treatment period. Setting: The setting was the Homeopathic Health Clinic at the University of Johannesburg in Johannesburg, South Africa. Participants: Through purposive sampling, the research team recruited 15 Caucasian, male participants, aged 18-45 y, who were exhibiting binge eating. Intervention: Individualized homeopathic remedies were prescribed to each participant. Primary Outcome Measures: Participants were assessed by means of (1) a self-assessment calendar (SAC), recording the frequency and intensity of bingeing; (2) the Binge Eating Scale (BES), a psychometric evaluation of severity; and (3) case analysis evaluating changes with time. Results: Ten participants completed the study. The study found a statistically significant improvement with regard to the BES (P = .003) and the SAC (P = .006), with a large effect size, indicating that a decrease occurred in the severity and frequency of bingeing behavior during the study period. Conclusions: This small study showed the potential benefits of individualized homeopathic treatment of binge eating in males, decreasing both the frequency and severity of bingeing episodes. Follow-up studies are recommended to explore this treatment modality as a complementary

therapeutic option in eating disorders characterized by binge eating.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27089525>

168. **Brambila-Tapia AJ, Rios-Gonzalez BE, Lopez-Barragan L, Saldaña-Cruz AM, Rodriguez-Vazquez K. Attitudes, Knowledge, Use, and Recommendation of Complementary and Alternative Medicine by Health Professionals in Western Mexico. *Explore (NY)*. 2016;12(3):180-7. doi:**

10.1016/j.explore.2016.02.002. Background:

The use of complementary and alternative medicine (CAM) has increased in many countries, and this has altered the knowledge, attitudes, and treatment recommendations of health professionals in regard to CAM. Methods: Considering Mexican health professionals' lack of knowledge of CAM, in this report we surveyed 100 biomedical researchers and Ph.D. students and 107 specialized physicians and residents of a medical specialty in Guadalajara, México (Western Mexico) with a questionnaire to address their attitudes, knowledge, use, and recommendation of CAM. Results: We observed that significantly more researchers had ever used CAM than physicians (83% vs. 69.2%, $P = .023$) and that only 36.4% of physicians had ever recommended CAM. Female researchers tended to have ever used CAM more than male researchers, but CAM use did not differ between genders in the physician group or by age in either group. Homeopathy, herbal medicine, and massage therapy were the most commonly used CAMs in both the

groups. Physicians more frequently recommended homeopathy, massage therapy, and yoga to their patients than other forms of CAM, and physicians had the highest perception of safety and had taken the most courses in homeopathy. All CAMs were perceived to have high efficacy (>60%) in both the groups. The attitude questionnaire reported favorable attitudes toward CAM in both the groups. Conclusions: We observed a high rate of Mexican health professionals that had ever used CAM, and they had mainly used homeopathy, massage therapy, and herbal medicine. However, the recommendation rate of CAM by Mexican physicians was significantly lower than that in other countries, which is probably due to the lack of CAM training in most Mexican medical schools.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27084337>

169. **Attena F. Limitations of Western Medicine and Models of Integration Between Medical Systems. *J Altern Complement Med*. 2016;22(5):343-8. doi:**

10.1089/acm.2015.0381. Abstract: This article analyzes two major limitations of Western medicine: maturity and incompleteness. From this viewpoint, Western medicine is considered an incomplete system for the explanation of living matter. Therefore, through appropriate integration with other medical systems, in particular nonconventional approaches, its knowledge base and interpretations may be widened. This article presents possible models of integration of Western medicine

with homeopathy, the latter being viewed as representative of all complementary and alternative medicine. To compare the two, a medical system was classified into three levels through which it is possible to distinguish between different medical systems: epistemological (first level), theoretical (second level), and operational (third level). These levels are based on the characterization of any medical system according to, respectively, a reference paradigm, a theory on the functioning of living matter, and clinical practice. The three levels are consistent and closely consequential in the sense that from epistemology derives theory, and from theory derives clinical practice. Within operational integration, four models were identified: contemporary, alternative, sequential, and opportunistic. Theoretical integration involves an explanation of living systems covering simultaneously the molecular and physical mechanisms of functioning living matter. Epistemological integration provides a more thorough and comprehensive explanation of the epistemic concepts of indeterminism, holism, and vitalism to complement the reductionist approach of Western medicine; concepts much discussed by Western medicine while lacking the epistemologic basis for their emplacement. Epistemologic integration could be reached with or without a true paradigm shift and, in the latter, through a model of fusion or subsumption.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27070976>

170. Mathie RT, Wassenhoven MV, Jacobs J, Oberbaum M, Frye J, Manchanda RK, Roniger H, Dantas F, Legg LA, Clausen J, Moss S, Davidson JR, Lloyd SM, Ford I, Fisher P. **Model validity and risk of bias in randomised placebo-controlled trials of individualised homeopathic treatment. *Complement Ther Med.* 2016;25:120-5. doi: 10.1016/j.ctim.2016.01.005.** Background: To date, our programme of systematic reviews has assessed randomised controlled trials (RCTs) of individualised homeopathy separately for risk of bias (RoB) and for model validity of homeopathic treatment (MVHT). Objectives: The purpose of the present paper was to bring together our published RoB and MVHT findings and, using an approach based on GRADE methods, to merge the quality appraisals of these same RCTs, examining the impact on meta-analysis results. Design: Systematic review with meta-analysis. Methods: As previously, 31 papers (reporting a total of 32 RCTs) were eligible for systematic review and were the subject of study. Main outcome measures: For each trial, the separate ratings for RoB and MVHT were merged to obtain a single overall quality designation ('high', 'moderate', 'low', 'very low'), based on the GRADE principle of 'downgrading'. Results: Merging the assessment of MVHT and RoB identified three trials of 'high quality', eight of 'moderate quality', 18 of 'low quality' and three of 'very low quality'. There was no

association between a trial's MVHT and its RoB or its direction of treatment effect ($P>0.05$). The three 'high quality' trials were those already labelled 'reliable evidence' based on RoB, and so no change was found in meta-analysis based on best-quality evidence: a small, statistically significant, effect favouring homeopathy. Conclusion: Accommodating MVHT in overall quality designation of RCTs has not modified our pre-existing conclusion that the medicines prescribed in individualised homeopathy may have small, specific, treatment effects.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27062959>

171. **van Haselen RA. Homeopathic clinical case reports: Development of a supplement (HOM-CASE) to the CARE clinical case reporting guideline. Complement Ther Med. 2016;25:78-85. doi: 10.1016/j.ctim.2015.12.019.** Objective: Develop a criteria catalog serving as a guideline for authors to improve the quality of reporting clinical case reports in homeopathy. Method: An online Delphi process was initiated with a panel of 19 homeopathic experts from Europe, the USA and India. Homeopathy specific item selection took place in three rounds of adjusting. The selected items can be used as an extension of the CARE clinical case reporting guideline. Results: Eight homeopathy specific 'core' items were selected from a list of 31 suggested items; (1) the clinical history from a homeopathic perspective; (2) the type of homeopathy;

detailed description of the medication-(3) nomenclature, (4) manufacture, (5) galenic form+dosage; outcomes-(6) objective evidence if available, (7) occurrence homeopathic aggravation, (8) assessment possible causal attribution of changes to the homeopathic treatment. A further 4 items were recommended for consideration as optional items when case reports are used for specific, in particular educational, purposes. The 8 core items can be used, merged into 6 items, as a homeopathy specific (HOM-CASE) extension to the CARE clinical case reporting guideline items 6, 9 and 10. Conclusion: Use of the HOM-CASE guideline extension will contribute to transparent and accurate reporting and can significantly improve the quality and reliability of clinical case reports in homeopathy.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27062953>

172. **Steel A, Frawley J, Sibbritt D, Broom A, Adams J. The characteristics of women who use hypnotherapy for intrapartum pain management: Preliminary insights from a nationally-representative sample of Australian women. Complement Ther Med. 2016;25:67-70. doi: 10.1016/j.ctim.2016.01.006.** Objectives: This manuscript presents a preliminary examination of the characteristics of women who choose intrapartum hypnosis for pain management. Design: Cross-sectional analysis of 2445 women (31-36 years) from a sub-study of the Australian Longitudinal Study on Women's Health (ALSWH), employing Fisher exact tests. Setting:

Australia. Main outcome measures: Use of intrapartum hypnosis, or hypnobirthing, for pain management during labour and birth. Results: Women using hypnobirthing were more likely to have consulted with an acupuncturist or naturopath, or attended yoga/meditation classes during pregnancy ($p < 0.0001$). Use of CM products such as herbal medicines, aromatherapy oils, homeopathy, herbal teas or flower essences ($p < 0.001$) was also more common amongst these women. Women choosing hypnotherapy for intrapartum pain management less commonly identified as feeling safer knowing that an obstetrician is providing their care ($p < 0.001$), and were more likely to labour in a birth centre or in a community centre (i.e. at home). Conclusions: This analysis provides preliminary analysis into an as yet unexamined topic in contemporary maternity health service utilisation. The findings from this analysis may be useful for maternity health professionals and policy makers when responding to the needs of women choosing to use hypnotherapy for intrapartum pain management.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/27062951>

173. **Dossett ML, Davis RB, Kaptchuk TJ, Yeh GY. Homeopathy Use by US Adults: Results of a National Survey. Am J Public Health. 2016;106(4):743-5. doi: 10.2105/AJPH.2015.303025.** Abstract: We used the 2012 National Health Interview Survey to compare homeopathy users with supplement users and those using other

forms of complementary and integrative medicine. Among US adults, 2.1% used homeopathy within the past 12 months. Respiratory and otorhinolaryngology complaints were most commonly treated (18.5%). Homeopathy users were more likely to use multiple complementary and integrative medicine therapies and to perceive the therapy as helpful than were supplement users. US homeopathy use remains uncommon; however, users perceive it as helpful.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26890179>

174. **McDowell A, Pai M. Alternative medicine: an ethnographic study of how practitioners of Indian medical systems manage TB in Mumbai. Trans R Soc Trop Med Hyg. 2016;110(3):192-8. doi: 10.1093/trstmh/trw009.** Background: Mumbai is a hot spot for drug-resistant TB, and private practitioners trained in AYUSH systems (Ayurveda, yoga, Unani, Siddha and homeopathy) are major healthcare providers. It is important to understand how AYUSH practitioners manage patients with TB or presumptive TB. Methods: We conducted semi-structured interviews of 175 Mumbai slum-based practitioners holding degrees in Ayurveda, homeopathy and Unani. Most providers gave multiple interviews. We observed 10 providers in clinical interactions, documenting: clinical examinations, symptoms, history taking, prescriptions and diagnostic tests. Results: No practitioners exclusively used his or her system of training. The practice of biomedicine is frequent, with

practitioners often using biomedical disease categories and diagnostics. The use of homeopathy was rare (only 4% of consultations with homeopaths resulted in homeopathic remedies) and Ayurveda rarer (3% of consultations). For TB, all mentioned chest x-ray while 31 (17.7%) mentioned sputum smear as a TB test. One hundred and sixty-four practitioners (93.7%) reported referring TB patients to a public hospital or chest physician. Eleven practitioners (6.3%) reported treating patients with TB. Nine (5.1%) reported treating patients with drug-susceptible TB with at least one second-line drug. Conclusions: Important sources of health care in Mumbai's slums, AYUSH physicians frequently use biomedical therapies and most refer patients with TB to chest physicians or the public sector. They are integral to TB care and control.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26884500>

175. **Salatino S, Gray A. Integrative management of pediatric tonsillopharyngitis: An international survey. Complement Ther Clin Pract. 2016;22:29-32. doi: 10.1016/j.ctcp.2015.11.003.** Abstract: This survey investigated the management of pediatric tonsillopharyngitis, with a focus on natural remedies. 138 pediatricians, general practitioners and ear-nose-throat (ENT) specialists in 7 countries were surveyed by a dedicated questionnaire. A rapid strept test (RST) to diagnose acute tonsillopharyngitis was routinely used by 56/138 participants (41%). The use of RST allowed 200 diagnosis/year compared with 125

diagnosis/year for clinicians who did not use this tool. Homeopathy remedies were prescribed as a supportive therapy by 62% of participants (85/138). Among different homeopathic remedies, SilAtro-5-90 was the most frequently prescribed (53/138, 38%). In the chronic setting, homeopathy was suggested as a supportive therapy by 82/138 participants (59%), phytotherapy by 39 (28%) and vitamins/nutritional supplementation by 51 (37%). The management of tonsillopharyngitis in pediatric patients still remains empiric. Natural remedies, and homeopathy in particular, are used in the management of URTIs. An integrative approach to these infections may help reduce excessive antibiotic prescription.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26850802>

176. **Schütze T, Längler A, Zuzak TJ, Schmidt P, Zernikow B. Use of complementary and alternative medicine by pediatric oncology patients during palliative care. Support Care Cancer. 2016;24(7):2869-75. doi: 10.1007/s00520-016-3097-2.** Purpose: Although the popularity of complementary and alternative medicine (CAM) has risen in the last decade, information about its use by pediatric patients in palliative care is still scarce. The purpose of the study was to assess the frequency and types of CAM administered by parents with children suffering from cancer during the palliative phase. Methods: All parents who lost their child due to cancer in the federal state North Rhine Westfalia/Germany were eligible for the study. The first group of eligible parents

was contacted in 1999-2000 and a second group of parents in 2005-2006. Upon agreement, parents were asked to complete a semi-structured questionnaire about the frequency of CAM use and the specific treatments that had been used. The types of CAM were categorized according to the National Center for Complementary and Alternative Medicine (NCCAM). Results: A total of 96 parents participated in the study (48 in each cohort). Forty-three percent of all parents in both groups reported CAM use. The results show an increase of CAM use from 38 % in the first group to 49 % in the second cohort of pediatric patients during palliative care. The most common types of CAM used in both groups were homeopathy and treatment with mistletoe preparations. Conclusions: The study provides information about usage of CAM in children suffering from cancer during the palliative phase of the disease. Further research is required to investigate benefits, potential adverse effects, and the potential efficacy of CAM in this population.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26838025>

177. **Orjales I, López-Alonso M, Rodríguez-Bermúdez R, Rey-Crespo F, Villar A, Miranda M.** Use of homeopathy in organic dairy farming in Spain. *Homeopathy*. 2016;105(1):102-8. doi: 10.1016/j.homp.2015.08.005. Abstract: Organic farming principles promote the use of unconventional therapies as an alternative to chemical substances (which are limited by organic regulations), with homeopathy being

the most extensive. Traditionally, Spain has had little faith in homeopathy but its use in organic farming is growing. Fifty-six Spanish organic dairy farmers were interviewed to obtain what we believe to be the first data on the use of homeopathy in organic dairy cattle in Spain. Only 32% of farms use some sort of alternative therapy (16.1% homeopathy, 10.7% phytotherapy and 5.3% using both therapies) and interestingly, a clear geographical pattern showing a higher use towards the East (similar to that in the human population) was observed. The main motivation to use homeopathy was the need to reduce chemical substances promoted by organic regulations, and the treatment of clinical mastitis being the principle reason. The number of total treatments was lower in farms using homeopathy compared with those applying allopathic therapies (0.13 and 0.54 treatments/cow/year respectively) and although the bulk SCC was significantly higher ($p < 0.001$) in these farms (161,826 and 111,218 cel/ml, respectively) it did not have any negative economical penalty for the farmer and milk quality was not affected complying with the required standards; on the contrary homeopathic therapies seems to be an alternative for reducing antibiotic treatments, allowing farmers to meet the organic farming principles.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26828005>

178. **Tournier AL, Roberts ER.** Cutting Edge Research in Homeopathy: HRI's second international research conference in Rome. *Homeopathy*. 2016;105(1):3-7. doi:

10.1016/j.homp.2015.12.002. Abstract: Rome, 3rd-5th June 2015, was the setting for the Homeopathy Research Institute's (HRI) second conference with the theme 'Cutting Edge Research in Homeopathy'. Attended by over 250 delegates from 39 countries, this event provided an intense two and a half day programme of presentations and a forum for the sharing of ideas and the creation of international scientific collaborations. With 35 oral presentations from leaders in the field, the scientific calibre of the programme was high and the content diverse. This report summarises the key themes underpinning the cutting edge data presented by the speakers, including six key-note presentations, covering advancements in both basic and clinical research. Given the clear commitment of the global homeopathic community to high quality research, the resounding success of both Barcelona 2013 and Rome 2015 HRI conferences, and the dedicated support of colleagues, the HRI moves confidently forward towards the next biennial conference.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26827995>

179. **Crawford L. Moral Legitimacy: The Struggle Of Homeopathy in the NHS. Bioethics. 2016;30(2):85-95. doi: 10.1111/bioe.12227.** Abstract: This article deploys a well-established theoretical model from the accountability literature to the domain of bioethics. Specifically, homeopathy is identified as a controversial industry and the strategic action of advocates to secure moral

legitimacy and attract public funding is explored. The Glasgow Homeopathic Hospital (GHH) is used as the location to examine legitimizing strategies, from gaining legitimacy as a National Health Service (NHS) hospital in 1948, followed by maintaining and repairing legitimacy in response to government enquires in 2000 and 2010. An analysis of legitimizing strategies leads to the conclusion that advocates have been unsuccessful in maintaining and repairing moral legitimacy for homeopathy, thus threatening continued public funding for this unscientific medical modality. This is an encouraging development towards open and transparent NHS accountability for targeting limited public resources in pursuit of maximizing society's health and well-being. Policy implications and areas for future research are suggested.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26806451>

180. **Macdonald C, Gavura S. Alternative Medicine and the Ethics Of Commerce. Bioethics. 2016;30(2):77-84. doi: 10.1111/bioe.12226.** Abstract: Is it ethical to market complementary and alternative medicines? Complementary and alternative medicines (CAM) are medical products and services outside the mainstream of medical practice. But they are not just medicines (or supposed medicines) offered and provided for the prevention and treatment of illness. They are also products and services - things offered for sale in the marketplace. Most discussion of the ethics of CAM has focused on bioethical issues - issues having to do with

therapeutic value, and the relationship between patients and those purveyors of CAM. This article aims instead to consider CAM from the perspective of commercial ethics. That is, we consider the ethics not of prescribing or administering CAM (activities most closely associated with health professionals) but the ethics of selling CAM.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26806450>

181. **Kristoffersen AE, Musial F, Hamre HJ, Björkman L, Stub T, Salamonsen A, Alræk T.** Use of complementary and alternative medicine in patients with health complaints attributed to former dental amalgam fillings. BMC Complement Altern Med. 2016;16:22. doi: 10.1186/s12906-016-0996-1. Background: The dental filling material amalgam is generally well tolerated. However, a small proportion of dental patients experience health complaints which they attribute to amalgam. The symptom pattern is often similar to patients with medically unexplained physical symptoms (MUPS) and the health complaints may persist after amalgam removal. Among patients with MUPS, the use of complementary and alternative medicine (CAM) seems to be high. The aim of this survey was to describe the prevalence and range of CAM use among people with health complaints attributed to dental amalgam fillings in which the health problems persist after the removal of all amalgam fillings. Specific attention was paid to (1) self-reported effects of CAM, (2) differences in CAM use dependent on self-reported health,

and (3) gender differences in self-reported CAM use. Methods: A survey was distributed to all members of The Norwegian dental patient association (NDPA) (n = 999), the response rate was 36.4%. The anonymous questionnaire asked for socio-demographic data, health complaints related to former amalgam fillings, subjectively perceived health status, symptoms, and experience with therapeutic interventions, mostly from the spectrum of CAM. Only participants who had all their fillings removed, which was the vast majority, were analysed. Results: A total of 88.9% of included respondents had used at least one CAM modality, with a higher proportion of men (95.7%) compared to women (86.2%, $p = 0.015$). The most frequently used therapies were dietary supplements, vitamins and minerals recommended by a therapist (used by 66.7%) followed by self-prescribed dietary supplements, vitamins and minerals (59.0%), homeopathy (54.0%), acupuncture (48.8%) and special diets (47.5%). Use of CAM was similar for participants reporting normal to good health compared to participants reporting poor health. For all but two CAM modalities, the self-reported treatment effect was better in the group reporting normal to good health compared to the group reporting poor health. Conclusions: CAM was widely used by participants in our study, a finding similar to findings from studies of MUPS patients. To date, health problems associated with the use of dental amalgam is not an accepted diagnosis in the healthcare system. Consequently, people suffering from such complaints experience a

lack of adequate treatment and support within conventional health care, which might have contributed to the high number of CAM users in this study.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4722717/pdf/12906_2016_Article_996.pdf

182. **Podolsky SH, Kesselheim AS. Regulating Homeopathic Products - A Century of Dilute Interest. *N Engl J Med*. 2016;374(3):201-3. doi: 10.1056/NEJMp1513393.** Abstract: In 2015, U.S. government agencies began considering greater regulation of both homeopathic drugs and the advertising of such products. These actions came after more than a century of missed opportunities to regulate homeopathic medicines.

Source:

<http://www.nejm.org/doi/pdf/10.1056/NEJMp1513393>

183. **Bermudez J, Davies C, Simonazzi A, Real JP, Palma S. Current drug therapy and pharmaceutical challenges for Chagas disease. *Acta Trop*. 2016;156:1-16. doi: 10.1016/j.actatropica.2015.12.017.**

Abstract: One of the most significant health problems in the American continent in terms of human health, and socioeconomic impact is Chagas disease, caused by the protozoan parasite *Trypanosoma cruzi*. Infection was originally transmitted by reduviid insects, congenitally from mother to fetus, and by oral ingestion in sylvatic/rural environments, but blood transfusions, organ transplants, laboratory accidents, and sharing of contaminated syringes also contribute to modern day transmission. Likewise, Chagas

disease used to be endemic from Northern Mexico to Argentina, but migrations have earned it global. The parasite has a complex life cycle, infecting different species, and invading a variety of cells - including muscle and nerve cells of the heart and gastrointestinal tract - in the mammalian host. Human infection outcome is a potentially fatal cardiomyopathy, and gastrointestinal tract lesions. In absence of a vaccine, vector control and treatment of patients are the only tools to control the disease. Unfortunately, the only drugs now available for Chagas' disease, Nifurtimox and Benznidazole, are relatively toxic for adult patients, and require prolonged administration. Benznidazole is the first choice for Chagas disease treatment due to its lower side effects than Nifurtimox. However, different strategies are being sought to overcome Benznidazole's toxicity including shorter or intermittent administration schedules-either alone or in combination with other drugs. In addition, a long list of compounds has shown trypanocidal activity, ranging from natural products to specially designed molecules, repurposing drugs commercialized to treat other maladies, and homeopathy. In the present review, we will briefly summarize the upturns of current treatment of Chagas disease, discuss the increment on research and scientific publications about this topic, and give an overview of the state-of-the-art research aiming to produce an alternative medication to treat *T. cruzi* infection.

Source:

<http://www.ncbi.nlm.nih.gov/pubmed/26747009>

184. **Zawiła-Niedźwiecki J, Olender J. A Not-So-Gentle Refutation of the Defence of Homeopathy. *J Bioeth Inq.* 2016;13(1):21-5. doi: 10.1007/s11673-015-9682-0.**

Abstract: In a recent paper, Levy, Gadd, Kerridge, and Komesaroff attempt to defend the ethicality of homeopathy by attacking the utilitarian ethical framework as a basis for medical ethics and by introducing a distinction between evidence-based medicine and modern science. This paper demonstrates that their argumentation is not only insufficient to achieve that goal but also incorrect. Utilitarianism is not required to show that homeopathic practice is unethical; indeed, any normative basis of medical ethics will make it unethical, as a defence of homeopathic practice requires the rejection of modern natural sciences, which are an integral part of medical ethics systems. This paper also points out that evidence-based medicine lies at the very core of modern science. Particular arguments made by Levy et al. Within the principlist medical ethics normative system are also shown to be wrong.

Source:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4823335/pdf/11673_2015_Article_9682.pdf

185. **Arendt F. Journalists' attitudes towards homeopathy: survey data from Germany. *Focus on Alternative and Complementary Therapies* 2016;21(1):17–21. doi: 10.1111/fct.12244.** Background: By selecting

and shaping potential news content, journalists construct mediated realities that in turn can contribute to the public's mental picture of health, including issues related to controversial complementary and alternative medicines such as homeopathy. As previous research has shown, journalists' reporting is influenced by their own attitudes; thus, positive attitudes towards homeopathy may contribute to favourable, uncritical or even enthusiastic reporting. Objectives: To investigate how journalists in Germany view homeopathy and whether demographics, organisational factors and attitudes towards conventional medicine influence journalists' attitudes towards homeopathy. Method: We surveyed journalists in order to investigate their attitudes towards homeopathy, predicted by demographics (i.e. age, gender, education, political leaning), organisational factors (i.e. professional experience, senior position, working on health-related content) and attitudes towards conventional medicine. Results: Although the 'average' journalists showed favourable attitudes towards homeopathy, the opinion climate was highly polarised. Women, journalists in senior positions and health journalists showed more positive attitudes towards homeopathy. Attitudes towards conventional medicine were unrelated to attitudes towards homeopathy. Conclusion: Because journalists act as the 'gatekeepers' of evidence-based scientific knowledge, targeted scholarly attention on journalists' attitudes is important. A thorough understanding of journalists' attitudes may contribute to a better dissemination of

evidence-based scientific knowledge to the wider public. This may ultimately contribute to better-informed patients who make their health decisions by considering evidence-based knowledge instead of widely shared myths.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12244/epdf>

186. **Saha S, Koley M, Arya JS, Choubey G, Upadhyaya S, Rasaily BN, Datta S, Roy A, Mukherjee S, Mundle M. Patient preference for integrating homeopathy (PIIH) and attitude and satisfaction following integration within mainstream healthcare settings in West Bengal, India: the part 2 (PIIH-2) study. Focus on Alternative and Complementary Therapies 2015;20(2):81-88. doi: 10.1111/fct.12177.** Background: In India, complementary and alternative medicine (CAM) therapies, namely ayurveda, yoga, unani, siddha, homeopathy and amchi/sowa-rigpa/Tibetan medicine (AYUSH), are being integrated into mainstream health care; however, public opinion on this integrated model has not been evaluated. Objectives: To evaluate patients' satisfaction following integration of homeopathy into mainstream health care, attitudes towards integrated services and satisfaction following consultation with homeopaths. Methods: A cross-sectional survey was undertaken in November 2014 involving 456 patients visiting five integrated homeopathy clinics across four northern districts in West Bengal, India. A 14-item self-administered questionnaire, comprising four-point Likert scale response sets (i.e.

1 = strongly disagree to 4 = strongly agree) and written in local vernacular Bengali, was used to address the above objective. Results: Of the patients surveyed, 98.8% were satisfied with the integrated services and disclosed a high level of satisfaction (86.3% of maximum score) following consultation with homeopaths. Although the patients preferred that allopaths to have knowledge of homeopathy, they did not prefer them to prescribe homeopathic medicines. In-house referrals were found to be compromised. Higher educational status and referrals seemed to influence satisfaction and attitude scores significantly ($P < 0.05$), while satisfaction scores following consultation remained uninfluenced by suspected variables. Conclusion: When formulating strategies for integrated CAM models in India, patient preferences should be evaluated with reasonable importance.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12177/abstract>

187. **Koley M, Saha S, Arya JS, Choubey G, Ghosh A, Das KD, Ganguly S, Dey S, Ghosh S, Nag G, Ali S, Saha S, Bhattacharyya K, Singh R. Patient evaluation of service quality in government homeopathic hospitals in West Bengal, India: a cross-sectional survey. Focus on Alternative and Complementary Therapies 2015;20(1):23-31. doi: 10.1111/fct.12159.** Background: Service quality (SQ) is the perceived difference between expectation and performance along the quality dimensions. It is central to the process of continuous quality improvement; however, SQ has rarely been

studied in homeopathic hospital settings. Objective: To examine the quality of service provided by four government homeopathic hospitals in West Bengal, India. Methods: In this cross-sectional survey, 644 patients from a systematically selected sample were invited to complete a modified Bengali SERVQUAL instrument (a quality management framework comprising 22 items with four-point Likert scale response sets descending from 4=strongly agree to 1=strongly disagree). The SQ expectation and perception scores were generated across five dimensions: reliability, responsiveness, empathy, assurance and tangibles. Service-quality gaps were then analysed. Results: Mean differences between patient perceptions and expectations of SQ revealed statistically significant gaps ($P<0.0001$) across all five dimensions and all 22 individual items of the survey. Multiple regression found residence significantly ($P<0.001$) influenced perceived quality gaps. The questionnaire used in this study showed promising psychometrics, including acceptable internal consistency (Cronbach's $\alpha \geq 0.6$) and item-corrected total correlations (ICC; Pearson's $r > 0.3$). Conclusion: The services patients received at various homeopathic hospitals in West Bengal, India, did not meet patient expectations across the five domains of SERVQUAL. This gap needs to be addressed through focused improvement efforts.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12159/abstract>

188. **Dusen VV, Pray WS. Recent actions of the US Food and Drug Administration against illegal**

homeopathic products. Focus on Alternative and Complementary Therapies 2014;19(4):177-183.

doi: 10.1111/fct.12148. Abstract: The Food and Drug Administration (FDA) of the USA is charged with protecting the American public from products that are adulterated, misbranded or which fit the federal definition of 'health fraud.' One company, the Standard Homeopathic Company and its Hyland's line of homeopathic remedies, has violated all three of these laws. Hyland's Teething Tablets have injured babies through toxic amounts of belladonna, and it makes numerous unsupported medical claims for non-prescription products that violate misbranding laws. Further, since the products lack any evidence of safety and efficacy, they fit the FDA definition of 'health fraud.' The FDA has attempted to force Standard Homeopathic to follow the relevant laws, but the company has not so far fully corrected the illegal acts.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12148/full>

189. **Miglani A, Manchanda RK. Prospective, non-randomised, open-label study of homeopathic *Zingiber officinale* (ginger) in the treatment of acne vulgaris. Focus on Alternative and Complementary Therapies 2014;19(4):191-197. Doi: 10.1111/fct.12140.** Background: *Zingiber officinale* (ginger) has a long history of use in traditional medicine, including homeopathy. Studies carried out so far have validated some of the ethno-medicinal observations. Objective: To determine the effectiveness of

homeopathic Z. officinale for the treatment of acne vulgaris and to identify its prescribing indications. Methods: A prospective, non-randomised open-label study was conducted on human participants with acne vulgaris. Homeopathic Z. officinale was prescribed in different potencies (6C up to 1M) over a period of 6 months. Outcomes included changes in lesion counts, Global Acne Grading System (GAGS) score, and Acne-Specific Quality of Life (Acne-QoL) score. Data were analysed using paired t-tests, Wilcoxon signed-rank tests and Pearson's correlation tests. Results: Thirty-two participants enrolled in the study; data for 31 participants were analysed. Statistically significant ($P < 0.001$) changes in lesion counts, GAGS scores and Acne-QoL scores were observed. Conclusion:

Homeopathic Z. officinale demonstrates encouraging results in the treatment of facial acne. Further investigation, using a randomised placebo-controlled trial design and a larger sample size is now required to draw firmer conclusions about the effectiveness of this intervention.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12140/abstract>

190. **Koley M, Saha S, Arya JS, Choubey G, Ghosh A, Saha S, Ghosh S, Ganguly S. Knowledge and attitudes towards homeopathic research: the perspective of new graduates and postgraduate trainees – an Indian scenario. Focus on Alternative and Complementary Therapies 2014;19(3):119-125. doi: 10.1111/fct.12115.** Background: Homeopathic research conducted by new

graduates [i.e. house staff (HS)] and postgraduate trainees (PGTs) in India remains seriously compromised. Objective: To assess HS and PGT knowledge and attitudes towards homeopathic research and to identify the barriers to conducting research. Methods: A cross-sectional survey was conducted in four government homeopathic schools in West Bengal, India. A total of 118 HS and 54 PGTs were interviewed using a validated and pilot-tested self-administered questionnaire. Bivariate analyses were performed to look for putative associations between different variables and the knowledge and attitude scores. Results: The survey response rate was 43%. Mean scores \pm standard deviation on the knowledge and attitude scales were $31.35\% \pm 15.27$ and $47.3\% \pm 18.2$, respectively. There were no statistically significant differences between the knowledge ($P = 0.234$) and attitude scores ($P = 0.304$) of HS and PGTs. Males had significantly better knowledge of ($P = 0.020$) and attitude towards ($P = 0.033$) research in comparison with females. Constraints in infrastructure (23%), research training (20%) and statistical support (15%) were the major hurdles to pursuing research. Conclusion: Homeopathic HS and PGTs demonstrate inadequate knowledge, while having moderate attitudes towards research. Research training needs to undergo major transformation to encourage meaningful research.

Source:

<http://onlinelibrary.wiley.com/doi/10.1111/fct.12115/abstract>

191. **Schultz SJ, Hotham ED, Evans AM. Australian pharmacists' uncertainty about homeopathic products in community pharmacy. Focus on Alternative and Complementary Therapies 2014;19(1):9-15. doi: 10.1111/fct.12077.** Background: Cochrane reviews conclude that there is no evidence for the efficacy of homeopathic preparations; however, these medicines are sold in community pharmacies globally, despite significant criticism from other healthcare practitioners. Consumer demand, profit and respect for choice are postulated reasons for this availability. Objectives: To explore the factors that influence pharmacists' preparedness to stock homeopathic products. Methods: A mixed-methods approach was used; this included two focus groups [metropolitan and rural South Australia (n=13)], telephone interviews (n=18) and a cross-sectional survey (n=185) of Australian community pharmacists. Factor analysis and non-parametric tests were used to identify factors that contributed to pharmacists' attitudes towards homeopathic products. Profitability was analysed using wholesale sales data, including contribution to profit in community pharmacy and views of owner versus employee pharmacists. Results: Surveyed pharmacists indicated a commitment to being a source of information on medicines and health products. However, this study revealed that many pharmacists lacked knowledge on homeopathic products and were unable to differentiate them from other 'natural medicines'. The impact of homeopathic products on profitability was regarded as limited. Overall, pharmacists were driven by concerns for consumer health and choice. Conclusions: Pharmacists' education should include skills to enable critical evaluation of health products and ability to explain why homeopathic products have no medicinal justification. The risk to professional credibility of selling these products is strong and most pharmacists do not endorse their value. Removal from pharmacies is unlikely to impact upon financial sustainability. There is a compelling argument for an urgent change to practice in this area.
Source:
<http://onlinelibrary.wiley.com/doi/10.1111/fct.12077/abstract>
192. **Shaw DM. Homeopathy is faith healing without religion. Focus on Alternative and Complementary Therapies 2014;19(1):27-29. doi: 10.1111/fct.12091.** Abstract: Faith healing is recognised as a sham treatment and is not available in most healthcare systems. In contrast, homeopathic 'remedies' are provided in most countries. This article argues that homeopathy is very similar to faith healing: it is based on ritual, there is no evidence that it works, and it deceives and can cause harm to patients.
Source:
<http://onlinelibrary.wiley.com/doi/10.1111/fct.12091/abstract>
193. **Kardile MV, Patil C*, Haidar A, Mahajan UB, Goyal S. Homeopathic drug standardization through biological evaluations: An untrodden avenue. Int J High Dilution Res. 2015;14(4):16-37.** Background: There is a dearth of chemico-analytical or instrumental methods for standardization and quality control of higher dilutions of homeopathic drugs. Aim: This review highlights the challenges in standardization of anti-inflammatory homeopathic drugs and

suggests a battery of biological assays for their standardization. Methods: We retrieved a total 57 scientific reports from the experimental studies and scientific reviews published between January 1999 and June 2014 related to anti-inflammatory homeopathic drugs and their high dilutions. These comprised of 18 reports on preclinical evaluation, 15 on source materials, 9 on isolated constituents and 15 studies on in-vitro experiments. Few recent citations which supported the initial studies were added later during the compilation of the manuscript. Conclusion: Standardization and quality control of homeopathic mother tinctures and high dilutions warrants an urgent attention. As biological activities are observed to be attributed to the high dilutions which are practically devoid of active ingredients, their standardization may be done through the suggested battery of biological investigations. It is suggested that the current methods of standardization of homeopathic drugs need to be upgraded to include sensitive, reproducible and relevant biological assays so that the end users are assured of the quality, efficacy, and safety of homeopathic dilutions.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijh/article/view/768/811>

194. **Golden I, Stranieri A, Nuaimat A. Attitudes towards and use of homoeoprophylaxis: findings of two international surveys. Int J High Dilution Res. 2015;14(4):38-53.** Background: The use of homoeopathic remedies to prevent infectious diseases, homoeoprophylaxis (HP), was first described

over 100 years ago. To date, no systematic studies have been performed to identify the attitudes that current practitioners hold about HP or current trends in the use of HP. Aims: This study aimed to discover attitudes to HP amongst accredited homeopathic practitioners particularly with respect to overall acceptance, context of use, and preferred remedies. Methodology: Two international surveys were conducted in 2014. Responses were received from 1,124 homeopaths in 35 countries; 104 of whom responded to both surveys. Results: A large proportion of respondents have positive attitudes to HP and currently use HP in their practice. However, responses also indicate that knowledge about HP is chequered. Confidence in the evidence base of HP also is variable. Conclusion: Results indicate that HP is widely practised, however, further research is needed to improve confidence in the evidence base of HP, and better programs are needed to ensure that education about HP is enhanced.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijh/article/view/760/808>

195. **Sonntag D. Examination regarding the tolerability of the homochord Acidum L(+)-lacticum 4x/6x/12x/30x/200x at a dosage of sixty drops three times daily [Short communication]. Int J High Dilution Res. 2015;14(4): 54-60.** Abstract: In Germany, the commission D recommends in its current dosage guidelines from March 17, 2004, that homeopathic dilutions higher than 24x will be prescribed in a daily application of five drops once. This recommendation is decisive for

the German Regulatory Authority. Even though the homochord Acidum L(+)-lacticum 4x/6x/12x/30x/200x contains dilutions above 24x, it is commonly used in clinical practice for over 30 years in a dosage of 60 drops three times daily. In order to explore the clinical safety and tolerability of Acidum L(+)-lacticum 4x/6x/12x/30x/200x at a dosage of 60 drops three times daily, as well as lower dosages, a therapist survey was designed to address the questions. Highly experienced and licensed therapists, including general and alternative practitioners, reported their usual dosage of homochord, incidences of drug reactions, initial homeopathic aggravations as well as the diagnoses that led to the prescription of Acidum L(+)-lacticum 4x/6x/12x/30x/200x. 167 therapist responses were analyzed. Only four therapists reported occurrences that classify as initial aggravation, (2.40 %), compared to 159 with no incidences (95.21 %). Four therapists made no statement. Nevertheless, there were no adverse drug reactions documented in the survey. Consequently, Acidum L(+)-lacticum 4x/6x/12x/30x/200x at a dosage of 60 drops three times daily or lower dosages may be construed to be clinically tolerable and safe. This evidence might lead to further re-evaluations of other homochords, and rigorous clinical trials for its safety and tolerability.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/803/810>

196. **Rajendran ES. An evaluation of Avogadro's number in the light of HRTEM and EDS studies of high dilutions of Ferrum**

metallicum 6, 30, 200, 1M, 10M and 50Mc.

Int J High Dilution Res. 2015;14(3): 3-9.

Abstract: As a therapeutic tool high dilutions (HDs) are always at the center of controversies due to problems to validate them as a function of Avogadro's number. Nevertheless, homeopathy is practiced around the world as a complementary and alternative medicine. The present study sought to evaluate HDs of homeopathic drug Ferrum metallicum (Ferr) 6, 30, 200, 1M, 10Mc and 50Mc, all of which except for 6c surpass Avogadro's number. Using HRTEM and EDS it was conclusively shown that: 1) all the investigated HDs of Ferr contained plenty of nanoparticles (NPs); 2) the size of NPs were within the quantum dots (QD) size range, except for 50Mc, in which larger particles were found (12.61nm); 3) NPs contained iron in various weight percentages; 4) the weight percentage of iron was highest in HDs 10Mc and 50Mc.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/764/803>

197. **Marques RFO, Carvalho ACB, Costa MA. Characterization of Potentized (Homeopathic, Anthroposophical and Antihomotoxic) Medicines Registered and Notified In Brazil. Int J High Dilution Res. 2015;14(3): 20-35.** Background: Potentized medicines include, according to the Brazilian legislation, homeopathic, anthroposophic, and antihomotoxic medicine and are regulated by the Brazilian Health Surveillance Agency (ANVISA). Aim: This study aims to analyze and describe a profile of potentized medicines manufactured in Brazil, either

registered or notified. Methodology: Information was obtained by data analysis related to ANVISA's electronic medicine registration system. Results: The results, obtained as of September 2012, showed that 106 potentized medicines were registered and 519 were notified. Among the registered medicines, 92.0% were combined and 100.0% of the notified were simple medicines. For registered medicines, there were equivalent manufacturing scales among them, whereas for notified medicines, there was a predominance of centesimal scales. Active pharmaceutical ingredients (API's) of vegetal origin were the most commonly used for potentized medicine manufacturing processes; the oral route was the most common form of administration. Potentized medicines manufacturing units are more often located in southeast region of Brazil. In addition, homeopathic medicines prevail as registered or notified medicines, followed by anthroposophic medicines. Conclusions: The results of the study are expected to be useful as reference material for ANVISA to improve its regulatory activity as well the industry sector and other stakeholders.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/756/802>

198. **Teixeira MZ. 'Paradoxical pharmacology': therapeutic strategy used by the 'homeopathic pharmacology' for more than two centuries. *Int J High Dilution Res* 2014; 13(48): 207-226.** Abstract: Using the empirical or phenomenological research method by observing the effects of drugs in the human physiology, Samuel

Hahnemann proposed the homeopathic treatment. He synthesized modern pharmacodynamic in the 'primary action' of the drugs and in the consequent and opposite 'secondary action' or 'vital reaction' of the organism. Noting that drugs with 'contrary' primary action to the symptoms of the diseases caused worsening of the symptoms after its withdrawal, as a result of secondary action of the organism, Hahnemann proposed using this vital reaction in a curative way, administering to sick individuals the drugs that caused 'similar' symptoms in healthy individuals (therapeutic use of the similitude principle). According to the clinical and experimental pharmacology, this secondary action (vital reaction) of the organism is observed in the 'rebound effect' or 'paradoxical reaction' of several classes of drugs, which is the scientific basis of the 'homeopathic pharmacology'. In the last decade, exponents of modern pharmacology have suggested the therapeutic use of the paradoxical reaction ('paradoxical pharmacology'), proposing the use of drugs that cause an exacerbation of the disease in the short term to treat these same diseases in the long-term. In this review, we compare the various aspects between the 'homeopathic pharmacology' and the 'paradoxical pharmacology', reinforcing the validity of homeopathic assumptions and expanding the knowledge to optimize both proposals.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/714/740>

199. **Saha S, Koley M, Mondal R, Kundu M, Ghosh A, Ghosh S, Saha S, Ganguly S. Understanding of biostatistics among the homeopathic fresh graduates and post-graduate trainees in West Bengal, India. Int J High Dilution Res 2014; 13(48): 172-181.** Background: A basic understanding of biostatistics is essential, both for designing quality research and evaluating medical literature. We evaluated the understanding of biostatistics and interpretation of research results among homeopathic fresh graduates' (House Staffs; HSs) and postgraduate trainees' (PGTs) in West Bengal, India. Methods: A cross-sectional survey of homeopathic HSs and PGTs in the four government homeopathic schools in West Bengal, India, using a pre-tested, valid and reliable biostatistics multiple choice knowledge, confidence and attitude test questionnaire. Results: Internal consistency of the used questionnaires was acceptable (Cronbach's $\alpha = 0.611 - 0.672$). Response rate was only 55.6%. Research journal reading habit was seriously lacking. No one had ever taken any research courses or possessed any advanced degrees or diplomas. The overall mean% correct on statistical knowledge was very poor, 1.0% (95% CI 0.1 – 1.9%) vs. 10.0% (95% CI 8.6 – 11.6%) for HSs and PGTs ($P < 0.0001$). Comparatively, higher knowledge scores were found in respondents from Mahesh Bhattacharyya Homeopathic Medical College and Hospital ($P = 0.003$). No one could interpret an unadjusted odds ratio, Kaplan-Meier

analysis results, and determine strength of evidence for risk factors. Percentages of correct answers for all other knowledge-based questions ranged between only 2.7 – 9.5%. Respondents' self-assessed confidence in ability to understand biostatistics ranged between 41 – 60%. Positive attitude towards biostatistics was elicited in 16 – 63% respondents. Conclusions: The respondents seriously lacked knowledge in biostatistics needed to interpret research results. Training programs needs to undergo massive and immediate transformation to include more effective biostatistics training in curricula to encourage meaningful research.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/705/730>

200. **Mundle M, Saha S, Koley M, Arya JS, Choubey G, Saha S, Ghosh A, Ganguly S, Ghosh S. A survey exploring research perception of homeopathic undergraduate students in West Bengal, India. Int J High Dilution Res 2014; 13(46): 28-44.** Background: Prioritizing undergraduate research is emphasized to develop critical analytical skills and thinking, independent writing, future clinical practice, enhanced employability, and improved research productivity. Despite far reaching consequences, research perception of homeopathic undergraduate students has barely been investigated to date. Poor participation of homeopathic undergraduates in research is reflected by a single MEDLINE indexed publication with adequate students'

contribution in the last decade. We aimed to assess their knowledge and attitude towards research and to identify barriers towards successful conduct of research. Methods: Institutional cross-sectional survey was carried out during August-September, 2013 in the four Government undergraduate homeopathic schools in West Bengal, India involving 902 participants. A semi-structured questionnaire was developed for the purpose depending on earlier studies on medical undergraduates. 364 completed responses were analyzed in the end. Results: Study sample mostly spanned 18-25 years of age group (94%), belonged to urban families (44.8%), with no gender differences (almost 1:1) and no physicians in family (73.1%). Maximum complete responses were obtained from 3rd year students (61.5%) and students of Calcutta Homeopathic Medical College and Hospital (51.2%). In spite of willingness to participate and keeping a positive attitude towards research, current involvement, training, knowledge and awareness remained quite unsatisfactory. Lack of infrastructure was identified as the chief barrier towards research. Conclusion: Undergraduates had a positive attitude towards homeopathic research, but need a realistic understanding of the research process. Opportunities for research skill development are underdeveloped.

Source:

<http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/688/691>

201. **Palani S, Pogaku PR, Penthala S, Narayana P S. Pharmacognostic and physicochemical standardization of homoeopathic drug: *Rumex crispus* L. Indian J Res Homoeopathy 2016;10(2):119-25. doi: 10.4103/0974-7168.183878.**

Background: *Rumex crispus* L., commonly called as "yellow dock" in English, "patience frisee" in French, and "Ampfer" in German, and 'aceda de culebra' in Spanish is a well-known herb belonging to Polygonaceae. Roots of the herb are used as medicine in homoeopathy.

Objective: The pharmacognostic and physicochemical studies on roots have been carried out to enable the use of correct species and standardize the raw material.

Materials and Methods: Pharmacognostic studies on roots of authentic raw drug have been carried out; physicochemical parameters, namely, extractive value, ash values, formulation besides weight per mL, total solids, alcohol content along with high-performance thin layer chromatography (HPTLC) and ultraviolet studies for mother tincture have been worked out.

Results: Roots are blackish-brown, wiry, rounded with irregular striations, tortuous; internally, it is softwood, light-yellow, and fracture fibrous. Phellem is 8-10 layered, discontinuous, and tanniniferous. Phellogen is two-layered and contains inulin crystals in few. Outer phelloderm is 12-16 layered often containing spherocrystals and associated with stone cells. Secondary phloem is up to 25 layered. Xylem is in the form of strips. The physicochemical properties and HPTLC values of the drug are standardized and presented.

Conclusion: The powder microscopic features and organoleptic characters along with anatomical and physicochemical studies are diagnostic to establish standards for the drug.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=119;epage=125;aulast=Palani>

202. **Shah R. Standardization of the potentizing machine and quantification of impact of potentization. Indian J Res Homoeopathy 2016;10(2) :126-132. doi: 10.4103/0974-7168.183879.** Introduction: Lack of accuracy and uniformity of impact have been the limitations of the ancient and current methods of potentization. Non-standardized electromechanical potentiizers are in use across industry. It is very important that within each manufacturing process, the number of succussions should remain constant as well as the impact given (force exerted) is quantified. The author proposes to give importance to the force parameters in potentization and quantify the impact of potentization. Materials and Methods: The author develops electromechanical potentiizer with certain specifications such as arm length, weight, and angle at which the arm drops at the base. The machine was operated with specific instructions given in the machine operation manual. The force parameters were calculated and standardized. Results: Torque is measured to quantify the impact of the force applied in potentization. The magnitude of torque is to be calculated by the force applied, length of the lever arm connecting the axis to the point of force application, and angle between the force vector and the lever arm. In this case, torque was calculated to be = 40.43 Nm. Since ten strokes are given, torque applied at every potency is calculated as 40.43. Conclusion: Necessity for the documentation

of force parameters used in the process of potentization has been identified, and a tool is developed to demonstrate it.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=126;epage=132;aulast=Shah>

203. **Chattopadhyay K, Singh AP. Anxiety and its impact on quality of life among urban elderly population in India: An exploratory study. Indian J Res Homoeopathy 2016;10(2) :133-141. doi: 10.4103/0974-7168.183880.** Background: Persistent suffering in anxiety can cause various health problems in old age and impairment of quality of life (QOL). Objectives: The objectives of this study are to assess the pattern of covert and overt anxiety among elderly population, to study the nature of relationship between the pattern of anxiety and domains of World Health Organization-QOL (WHO-QOL) among elderly population, to study the gender difference on the pattern of anxiety and WHO-QOL among elderly population. Materials and Methods: An exploratory cross-sectional survey under a health camp approach was conducted by using two types of questionnaire, i.e., Institute for Personality and Ability Testing self-analysis questionnaire and WHOQOL-BREF. Results: The gender wise comparative profile of covert and overt anxiety with total, standard, and sten score shows that covert anxiety is higher in male in different background characteristics, except male group educated between 5th and 12th standard showing higher overt anxiety, whereas female group shows higher overt anxiety in different background

characteristics. Spearman's rank correlation shows that overt anxiety has an inverse relation with domain-1 in both sexes, a negative relationship is found between domain-2 of WHO-QOL and the covert and overt anxiety among female, a significant negative relationship in domain-3 of WHO-QOL with covert and overt anxiety among male, and also a significant negative association between the domain-4 of WHO-QOL and overt anxiety in female. Conclusion: The functional ability of both male and female elderly on various domains is related and influenced by the pattern of anxiety.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=2;spage=133;epage=141;aulast=Chattopadhyay>

204. **Rutten L. Prognostic factor research in Homoeopathy. Indian J Res Homoeopathy 2016;10:59-65. doi: 10.4103/0974-7168.179143.** Abstract: Validation of homoeopathic medicines is about validating effectiveness in individual cases. Homoeopathic practitioners base their expectation that a medicine will work on the experience that specific symptoms of the patient indicate specific medicines. The prevalence of such symptoms is higher in a population responding well to a specific medicine than in the remainder of the population. This principle has a solid mathematical foundation in Bayes' theorem, identifies homoeopathic symptoms as prognostic factors, and offers an interesting perspective of individualized research. This kind of research depends on recording

symptoms and results of treatment. An important challenge in this research is establishing causality between medicine and improved health. Prognostic factor research could become one of the main pillars of Homoeopathy's scientific identity.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2016;volume=10;issue=1;spage=59;epage=65;aulast=Rutten>

205. **Taneja D, Khurana A, Mathew G, Padmanabhan M, Sharma S, Manchanda RK. Knowledge, attitude, practice, and beliefs about drug proving in students of Homoeopathy. Indian J Res Homoeopathy 2015;9:230-9. doi: 10.4103/0974-7168.172868.** Background and Aim: Students in homoeopathic colleges are often encouraged to participate in drug proving programs. There is no valid and reliable instrument for identifying their concerns. Therefore, an instrument has been designed and tested to identify knowledge, attitude, practice, and beliefs (KAPB) of homoeopathic students. This can be used for motivating students to participate in drug proving programs. Design and Methods: First, the questionnaire items were identified by a telephonic interview with investigators of drug proving program. The questionnaire was pilot tested on interns of a homoeopathic college to identify its internal consistency, test-retest reliability, and face and construct validity. A survey using this instrument followed by training of homoeopathic medical students was conducted, and the change in KAPB was also assessed. Results: A questionnaire of 28 questions testing knowledge, beliefs, attitudes and practices

was developed with Cronbach's $\alpha = 0.71$ for the entire scale. Students were of the opinion that with participation in proving studies, homoeopathic Materia Medica will develop, which will be their contribution to Homoeopathy. Students will be personally benefitted by having an experiential knowledge rather than theoretical knowledge of philosophy. Although the majority is aware that proving does not cause long-term damage to health, nor does it cause irreversible pathological change, a major concern is the development of severe or unmanageable symptoms. Students can be motivated to participate in proving programs by re-enforcing that it will be a unique experience, assuring them about that no acute unmanageable symptoms are likely to develop.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=4;spage=230;epage=239;aulast=Taneja>

206. **Rao P P, Subramanian P, Sudhakar P, Reddy P R. Pharmacognostic standardization of Homoeopathic drug: *Juniperus virginiana* L. Indian J Res Homoeopathy 2015;9:102-8. doi: 10.4103/0974-7168.159539.**
Background: *Juniperus virginiana* L., commonly known as 'red cedar' in English is a well-known evergreen tree belonging to the family Cupressaceae. The leaves and young aerial shoots are used for preparation of medicine in Homoeopathy. Objective: Standardization is the quintessential aspect which ensures purity and quality of drugs. Hence, the pharmacognostic and physico-chemical studies are carried out to facilitate the use of authentic and correct species of raw drug

plant material with established parametric standards for manufacturing the drug. Materials and Methods: Pharmacognostic studies on leaves and young aerial parts of authentic samples of *J. virginiana* L. have been carried out; physico-chemical parameters of raw drug viz., extractive values, ash values, formulation, besides weight per mL, total solids, alcohol content along with High Performance Thin Layer Chromatography (HPTLC) and ultraviolet visible studies have been worked out for mother tincture. Results: The leaves are needles, narrow and sharp at tips; stems are round with greyish white to brown bark possessing small lenticels and covered by imbricate leaves. Epidermal cells in the surface have polygonal linear sides with pitted walls containing crystals and starch. Stomata exclusively occur on the adaxial surface in linear rows. Hypodermis of leaf in T.S. is marked with 1-2 layered lignified sclerenchyma. 2-4 secretory canals are present with one conspicuously beneath midvein bundle. The young terminal axis is sheathed by two closely surrounding leaves while the mature stem possess four leaf bases attached. Vascular tissue of stem possesses predominant xylem surrounded by phloem containing sphaeraphides, prismatic crystals and starch grains. Uniseriate rays occur in the xylem. Mature stem possess shrivelled cork, followed by the cortex. Physicochemical properties and HPTLC values of the drug are standardized and presented. Conclusion: The powder microscopic features and organoleptic characters along with anatomical and physicochemical studies are diagnostic to establish the standards for the drug.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2015;volume=9;issue=2;spage=102;epage=108;aulast=Rao>

207. **Rao P P, Subramanian P, Sudhakar P. Standardisation of homoeopathic drug: *Plectranthus fruticosus*. Indian J Res Homoeopathy 2014;8:194-9. doi: 10.4103/0974-7168.147314.**

Background: *Plectranthus fruticosus* (Benth.) Wight ex Hook. f, syn. *P. deccanicus* Brinq. is an under shrub belonging to the family Lamiaceae. Leaves and young stems of this plant are used as medicine in Homoeopathy. Objective: To carry out pharmacognostic and physico - chemical studies to use authentic and correct species as standard raw materials to ensure purity, quality and its usefulness. Materials and Methods: The leaves and young aerial parts of *Plectranthus fruticosus* were fixed in formaldehyde: acetic acid alcohol (F.A.A), processed for microtomy (paraffin method), sectioned, stained and permanent slides prepared following Johansen. The microtome sections in T.S. and longitudinal section (L.S.) were obtained at 6-8 um thickness on Leica RM 2155 microtome. The powder microscopy characters were studied by boiling the powdered drug in distilled water, stained in saffranin and mounted with glycerine. Photomicrography was done with Olympus BX 53 research trinocular microscope. Results: The leaves are large, ovate to cordate, thin, margins with rounded serrations, surface coarse with dense covering hair. Petiole is long and stem is quadrangular with nodes. Trichomes are predominantly uniseriate, macroform, conical besides few uniseriate filiform peltate and capitate hairs. Lamina is conspicuously thin. The hypodermal collenchyma is angularly thickened. Vascular bundles in

midvein are arranged in an 'arc'. Petiole is oblong to rounded, in transection (T.S.) and undulated. A ring of angular collenchyma is present. Cortical cells possess starch grains and crystals of calcium oxalate. A continuous vascular cylinder is present interrupted with 2-3 seriate medullary rays. The physicochemical properties and HPTLC fingerprints of this plant have been standardized. Conclusion: The powder microscopic features and organoleptic characters along with the anatomical and physico chemical studies including HPTLC fingerprints are diagnostic to establish the pharmacopoeial standards for the drug.

Source: <http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=4;spage=194;epage=199;aulast=Rao>

208. **Taneja D, Nyamathi A, Khurana A, Srikanth N, Nayak C, Padhi M M, Padmanabhan M, Singhal R. Effectiveness of train the trainer module in delivery of HIV prevention messages for Homoeopathy and Ayurveda practitioners. Indian J Res Homoeopathy 2014;8:136-46. doi: 10.4103/0974-7168.141734.** Introduction: A 2-day training program was developed to train Homoeopathy and Ayurveda practitioners to impart HIV/AIDS prevention messages to their clients. The purpose of the study was to evaluate the effectiveness of this training program based on train the trainer modality. Materials and Methods: Ten primary participants were enrolled in each one day and two day training program. Both the groups were instructed to impart further training to 10 participants each. The knowledge of and attitudes toward HIV/AIDS

were measured in primary participants before and immediately after training and at the end of 3 months and in secondary participants before and immediately after training by a 21-item questionnaire. Results: In 1-day group, the pre-training and post-training assessments were completed by all the 10 participants, where as the 3 month assessment was completed by only seven participants. In this group, mean overall knowledge score was 15.9 which increased to 17 post training and reduced to 16.7, 3 months post training. In 2-day group, the pre-training and post training assessments were completed by 10 participants, where as the 3 month assessment was completed by nine participants. In this group, the pre-training score of 17.4 increased to 19.8 immediately after training and decreased to 18.4, 3 months after training. From the 1-day group and two day group, seven and nine participants respectively, conducted secondary trainings. In case of secondary trainees, the cognitive knowledge scores showed a statistically significant difference before and after trainings in both the groups. Conclusion: The training module on HIV/AIDS was useful in enhancing the knowledge of physicians of Homoeopathy and Ayurveda on cognitive and transmission related aspects of the disease and on its ethical, social and legal implications. With such training programs the homoeopathic and ayurvedic practitioners can play a vital role in prevention of HIV infection by undertaking appropriate patient education and counselling.

Source:<http://www.ijrh.org/article.asp?issn=>

0974-7168;year=2014;volume=8;issue=3;spage=136;epage=146;aulast=Tanej a

209. **Singh S, Kumar R, Karwasra R, Kalra P, Rani S, Nayak D, Gupta Y K. Evaluation of safety profile of homoeopathic mother tinctures. Indian J Res Homoeopathy 2014;8:81-6. doi: 10.4103/0974-7168.135640.**

Background: Mother tinctures are commonly prescribed in day to day practice as therapeutic agents by homoeopathic practitioners. However, being the base preparation of medicines, safety of mother tinctures still remains a challenge because of the high variability of chemical components involved. The present study investigated the acute and sub-acute oral toxicity of different homoeopathic mother tinctures (*Bellis perennis*, *Curcuma longa*, *Rauwolfia serpentina*, *Ricinnus communis*, *Tribulus terrestris* and *Terminalia arjuna*) in experimental models. Methods: Toxicity studies were conducted to assess the level to which substances are toxic for humans and animals. In acute oral toxicity study, different homoeopathic mother tinctures were administered orally (a single dose of 4 ml/kg) and animals were observed for toxic symptoms till 14 days as per OECD (Organisation for Economic Co-operation and Development) - 423 guidelines. For sub-acute toxicity study, 28 day oral toxicity of mother tinctures (4 ml/kg daily) was carried out according to the OECD guidelines for testing of chemicals - 407. At the end of 28 days, the animals were sacrificed and toxicity was assessed on parameters such as blood, biochemistry and histopathology.

Results: Results indicate that there were no toxic symptoms observed in tested animals. Results of sub-acute toxicity study did not show any change in body weight, haematological and biochemical parameters as compared to control. The histopathological examination of kidney and liver also did not reveal any organ toxicities.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=2;spage=81;epage=86;aulast=Singh>

210. **Gupta N, Saxena R K, Sharma B, Sharma S, Agrawal A K, Jassal M, Manchanda RK. Leaching of plastic polymers by plastic vials used for storing homoeopathic medicines: A preliminary study. Indian J Res Homoeopathy 2014;8:95-9. doi: 10.4103/0974-7168.135642.**

Background: In Homoeopathy, plastic containers/vials are used for the storing/dispensing of ethanol-based medicines instead of glass. Various studies have suggested that plastic components that leach out in stored substances tend to cause contamination and may produce adverse effects in living systems. The present study was aimed to find out chemical composition and leaching behaviour of commonly used plastic vials (PVs) if any during the storage of ethanol-based homoeopathic medicines in optimal environment. Material and Methods: The experiments were conducted on two sample sets of PVs. Chemical properties of PV were assessed by Fourier Transform Infrared Attenuated Total Reflectance (FTIR-ATR) spectroscopy. PV were cut separately [sample-1 (S-1) and sample-2 (S-2)] and immersed in

Homoeopathic Grade Ethanol (HGE) in conical flask and stored for 7 days at ambient temperature ($25^{\circ} \pm 5^{\circ}\text{C}$) with constant rotary shaking. After 7 days, S-1 and S-2 of PV in Homoeopathic Grade Ethanol (HGE) were decanted and filtered. Aliquots (A1 and A2) were analysed by proton nuclear magnetic resonance spectroscopy (^1H NMR). The spectral graph obtained by FTIR-ATR spectroscopy for PV compositions and spectral graph obtained by ^1H NMR spectroscopy for PV ethanol aliquots were examined for PVs material and PV leaching effect in HGE. Results: FTIR-ATR spectra showed that PV are made up of two types of polyolefin's compounds i.e. Low Density Polyethylene (LDPE) and Linear Low Density Polyethylene (LLDPE). Aliquots of PV in HGE showed the presence benzophenone and its methyl derivative, heat and light stabiliser (2, 2, 6, 6-tetramethylpiperidine and amino derivative), antioxidant (4, 4'-thiobis and 2-tertbutyl-5-methylphenol) and plasticizer bis 2-Diethylhexyl phthalate (DEHP) or Dioctyl phthalate (DOP). Results of study suggest that PVs leach out plastic polymers in HGE. Conclusion: This preliminary experiment suggests that it is not safe to use LDPE/LLDPE plastic for storing/dispensing ethanol based homoeopathic medicines. Further study with other grades of plastic is desirable.

Source:<http://www.ijrh.org/article.asp?issn=0974-7168;year=2014;volume=8;issue=2;spage=95;epage=99;aulast=Gupta>

211. **Christian Doutremepuich, Omar Aguejouf, Vanessa Desplat, and Francisco X. Eizayaga. Paradoxical Effect of Aspirin. Thrombosis**

Volume 2012, Article ID 676237, 4 pages.
doi:10.1155/2012/676237

Low-dose aspirin is an important therapeutic option in the secondary prevention of myocardial infarction (MI) and ischemic stroke, based on its unique cost-effectiveness and widespread availability. In addition, based on the results of a number of large studies, aspirin is also widely used in the primary prevention of MI. This paper provides an update of the available data to offer greater clarity regarding the risks of aspirin with respect to hemorrhagic stroke. In the secondary prevention of cardiovascular, cerebrovascular, and ischemic events, the evidence supports that the benefits of aspirin treatment significantly outweigh the risk of a major hemorrhage. When considering whether aspirin is appropriate, the absolute therapeutic cardiovascular benefits of aspirin must be balanced with the possible risks associated with its use, being hemorrhagic stroke. Regarding these clinical facts, normal, COX 1 $-/-$, and COX 2 $-/-$ mice were treated with a wide range of doses of aspirin and studied by induced hemorrhagic time. The results outlined three major conclusions: high doses of aspirin induce hemorrhage, while low doses of aspirin do not. In the absence of COX 1, ultra low doses of aspirin produce an antihemorrhagic effect not observed with intermediate doses. The absence of COX 2 induced a hemorrhagic effect that needs further research, probably originated in compensatory phenomena.

212. **Omar Aguejoui, PhD, Francisco Eizayaga, MD, PhD, Vanessa Desplat, PhD, Philippe Belon, MD, PhD, Christian Doutremepuich, MD, PhD. Prothrombotic and Hemorrhagic Effects of Aspirin. CLIN APPL THROMB HEMOST July 3, 2008 as doi:10.1177/1076029608319945.**

Aspirin remains the most widely used drug for prevention of vascular events. Recent observational epidemiological evidence has raised the concern that aspirin withdrawal for treatment noncompliance, surgery, or side effects can carry an increased thrombotic risk. The delay to the thrombotic event was between 7 to 30 days in most reports and most frequently 7 to 10 days. The mechanism underlying this effect remains poorly understood. Using an in vivo model of laser-induced thrombosis, aspirin injected in 1 single dose of 100 mg/kg body weight has also shown a prothrombotic activity in the rat 8 to 10 days after injection in the normal rat. The hypothesis was made that minimal concentrations of aspirin or ultra-low dose aspirin (ULDA) could induce this effect. ULDA showed prothrombotic properties in the same model of induced thrombosis that were very similar to those described after aspirin withdrawal, but the effect was observed only 1 hour after aspirin administration. This prothrombotic effect of ULDA is very similar to the effect observed after COX 2 selective inhibition with NS 398. The administration of both the selective COX 2 inhibitor and ULDA did not produce further changes. In conclusion, the prothrombotic effects described in recent observational studies are likely produced by a direct effect of aspirin, whose putative mechanism involving COX 2 inhibition remains poorly understood.

213. **Christian Doutremepuich, Omar Aguejoui, Francisco X. Eizayaga, Vanessa Desplat. Reverse Effect of Aspirin: Is the Prothrombotic Effect after Aspirin Discontinuation Mediated by Cyclooxygenase 2 Inhibition? Pathophysiol Haemost Thromb 2007–08;36:40–44. DOI: 10.1159/000112638**

Background: While aspirin is the drug most

often used to prevent cardiovascular complications, its discontinuation induces an increased risk of acute coronary syndrome and ischemic stroke in some patients. Objectives: We hypothesized that infinitesimal concentrations of aspirin could persist in plasma after its discontinuation, thereby inducing a prothrombotic effect that could be due to a modification in the mechanism of action of aspirin via the cyclooxygenase 1 (COX-1) and COX-2 pathways. Methods and Results: We studied the effects of ultra-low-dose aspirin (ULDA) as well as those of sc-560 and ns-398, specific COX-1 and COX-2 inhibitors, on induced hemorrhagic time and in a model of laser-induced thrombosis in rats. In the laser-induced thrombosis model, ULDA treatment increased the number of emboli and the duration of embolization, thereby confirming its prothrombotic effect described in previous publications. This effect was also observed in rats pretreated with sc-560 but not in those pretreated with ns-398. Conclusions: We demonstrated that ULDA induced a prothrombotic effect in the rats studied. This strongly suggests that a very small amount of aspirin could remain in the patient's blood after aspirin therapy, leading to cardiovascular complications. This effect may be mediated by the COX-2 pathway.

214. **Eizayaga FX, Aguejof O, Desplat V, Belon P, Doutremepuich C. Modifications produced by selective inhibitors of cyclooxygenase and ultra low dose aspirin on platelet activity in portal hypertension. World J Gastroenterol 2007; 13(38): 5065-5070**

AIM: To study the mechanism involved in the potentially beneficial effect of ultra low dose aspirin (ULDA) in prehepatic portal hypertension, rats were pretreated with

selective COX 1 or 2 inhibitors (SC-560 or NS-398 respectively), and subsequently injected with ULDA or placebo.

METHODS: Portal hypertension was induced by portal vein ligation. Platelet activity was investigated with an in-vivo model of laser induced thrombus production in mesenteric circulation and induced hemorrhagic time (IHT). Platelet aggregation induced by ADP and dosing of prostanoid products 6-keto-PGF1 α , TXB2, PGE2 and LTB4 were also performed.

RESULTS: The portal hypertensive group receiving a placebo showed a decreased in vivo platelet activity with prolonged IHT, an effect that was normalized by ULDA. SC-560 induced a mild antithrombotic effect in the normal rats, and an unmodified effect of ULDA. NS-398 had a mild prothrombotic action in portal hypertensive rats, similar to ULDA, but inhibited a further effect when ULDA was added. An increased 6-keto-PGF1 α was observed in portal hypertensive group that was normalised after ULDA administration. TXA2 level after ULDA, remained unchanged.

CONCLUSION: These results suggest that the effect of ULDA on platelet activity in portal hypertensive rats, could act through a COX 2 pathway more than the COX 1, predominant for aspirin at higher doses.

215. **Christian Doutremepuich*, Omar Aguejof, Vanessa Desplat and Francisco X. Eizayaga Paradoxical Thrombotic Effects of Aspirin: Experimental Study on 1000 Animals. Cardiovascular & Haematological Disorders-Drug Targets, 2010, 10, 103-110.**

Abstract: Aspirin administration decreases the risk of vascular ischemic problems. However, aspirin withdrawal may temporarily increase this risk. Previous studies reported that high dilutions of aspirin might cause a pro-thrombotic effect.

This paper studies the effect of the lower end of the aspirin dose-response curve, its possible mechanism and clinical implications. Protocol: Wistar rats were distributed into 100 groups of 10 rats each. Aspirin was injected at 100 mg/kg, 1 mg/kg and at several different aspirin dilutions along with cyclooxygenase (COX) 1 (SC-560), COX 2 (NS-398) or both selective inhibitors simultaneously using a laser-induced thrombosis model. Results: The higher doses of aspirin decreased thrombosis. An opposite trend was observed with the lowest doses. SC-560 produced an anti-thrombotic effect antagonized by the highest aspirin dilutions. NS-398 created a pro-thrombotic effect that was antagonized by aspirin at higher doses. Simultaneous inhibition of COX 1 and 2 produced changes similar to COX 1 inhibition. Conclusion: COX 2 inhibition induced a pro-thrombotic effect that was antagonized by aspirin at 1 mg/kg or 100 mg/kg. The administration of the lowest aspirin doses induced a pro-thrombotic effect stronger than the antithrombotic effect of COX 1 selective inhibition. The mechanism of this last pro-thrombotic effect is induced by residual aspirin and is independent of COX 1 inhibition. This study may explain the cause of the paradoxical thrombo-embolic complications observed after aspirin discontinuation, an effect of residual aspirin rather than a rebound effect, and highlights the importance of low doses of substances as a barely studied source of side-effects.

216. **Francisco X. Eizayaga, Omar Aguejof, Philippe Belon, Christian Doutremepuich. Platelet Aggregation in Portal Hypertension and Its Modification by Ultra-Low Doses of Aspirin. Pathophysiol Haemost Thromb 2005;34:29–34 DOI: 10.1159/000088545**

Aspirin (ASA) is widely accepted as antithrombotic drug, but several reports point out that its use in ultra-low doses (ULD) has

prothrombotic properties. In this study, we evaluate the effect of portal hypertension in rats on platelet aggregation in an in vivo arterial thrombosis model induced by a laser beam. Portal hypertension was produced by calibrated stenosis of the portal vein. ASA in ULD was injected to both control and portal hypertensive groups. Platelet aggregation induced by ADP, prothrombin time, activated partial thromboplastin time, fibrinogen and induced hemorrhagic time test were also performed. Portal hypertensive rats showed a diminished number of emboli and duration of embolization in the laser procedure and an increase in induced hemorrhagic time. These changes were reverted by one injection of ASA at ULD. This observation could be of importance for primary prevention or the treatment of recurrence in upper digestive tract hemorrhage in portal hypertensive patients.

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DEFINITIONS

Health definition:

WHO definition of Health: „Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”

Coming from Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.

ORGANON definition of health 6th Edition: „ § 9 In the healthy condition of man, the spiritual vital force (autocracy), the dynamis that animates the material body (organism), rules with unbounded sway, and retains all the parts of the organism in admirable, harmonious, vital operation, as regards both sensations and functions, so that our indwelling, reason-gifted mind can freely employ this living, healthy instrument for the higher purpose of our existence.”

Homeopathic remedy (see www.lmhi.org):

"A homeopathic remedy is prepared from a stock/raw material described in a homeopathic monograph/source, following a homeopathic method and administered to a living being according to the principle of "similia similibus curentur". It has a potential to support changes in the state of health of this living being. When such changes indeed happen and lead to an improvement in the state of health/full healing of a disease with recovery of the state of health, homeopathic medicines act as remedies."

Homeopathy (See Thesaurus ECH):

A therapeutic method of treating patients using preparations of substances whose effect on healthy subjects is similar to the manifestation of the disorder in these patients.

The European pharmaceutical homeopathic medicinal product definition is:

"Any medicinal product prepared from substances called homeopathic stocks in accordance with a homeopathic manufacturing procedure described by the European Pharmacopoeia or, in the absence thereof, by the pharmacopoeias currently used officially in the Member States. A homeopathic medicinal product may contain a number of principles."

The Indian pharmaceutical homeopathic medicinal product definition is:

"Homeopathic medicines include any drug which is recorded in Homeopathic provings or therapeutic efficacy of which has been established through long clinical experience as recorded in authoritative Homeopathic literature of India and abroad and which is prepared according to the techniques of Homeopathic pharmacy and covers combination of ingredients of such Homeopathic medicines but does not include a medicine which is administered by parenteral route"

The Indian Homeopathic Pharmacopoeia defined homeopathic medicines as:

"Homoeopathic medicines include any substance which is recorded in the standard books on Homoeopathic Materia Medica from Hahnemann down to the present day authorities with symptoms gathered from proving on healthy human beings; or symptoms, not found during provings but observed to have been actually cured (and verified by sufficient number of observations) by the substances during their administration to sick persons; or symptoms observed either accidentally or by controlled experiments; or observed as toxicological effects on human beings or animals and which after being prepared according to the principle and technique peculiar to homoeopathic pharmacy and are administered to a sick person according to the law of similars".

Indian definition of proving:

“Controlled experiments made upon relatively healthy human volunteers with substances prepared according to pharmaceutical technique peculiar to Homeopathy, in varying doses, produce “provings” which constitute the basis of Homoeopathic Materia Medica

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Pharmacopoeias:

Homöopathisches Arzneibuch, see: www.oxalis-acetosella.com/glossar/homoeopathisches_arzneibuch.html The Homoeopathic Pharmacopoeia of the United States; see: www.hpus.com/overview.php

EUROPEAN PHARMACOPOEIA 7TH EDITION, see: www.edqm.eu/site/European-Pharmacopoeia-1401.html WHO INDEX of PHARMACOPOEIAS, see: www.who.int/medicines/publications/pharmacopoeia/en/pharmacop_index.pdf

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