

# Research into Homeopathy (2020)

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Globally, the practice of homeopathy is under threat. To take a few notable examples, in Australia it's been declared to be ineffective for any health condition by the Australian federal government's National Health and Medical Research Council, and private health insurers have ceased rebates for it. In the UK, National Health Service funding has been withdrawn from it. In the USA, the Food and Drug Administration has flagged new powers that allow it to ban commonly used homeopathic medicines. France's national health authority, HAS, has said that it will stop reimbursing patients for homeopathic treatment from 2021. In Belgium, the Federaal Kenniscentrum voor de Gezondheidszorg, the official health information service, has stated that there is no valid empirical evidence of homeopathy beyond the placebo effect, and Belgian private health insurers are withdrawing reimbursements for homeopathic treatment. In Germany, the head of the National Association of Statutory Health Insurance Physicians has called for the withdrawal of reimbursements for homeopathy because there is insufficient evidence for the efficacy of homeopathic procedures. In most of these and other instances where attempts are being made to restrict the practice of homeopathy, the reason given is that there's no good quality evidence for its effectiveness.

While it may be interesting to speculate on why the governments of these countries and the various critics of homeopathy can't appear to find any good evidence for it, but the simple fact is that that evidence does exist, it's easy to find, and it's abundant.

This article contains summaries of most of the peer-reviewed research on homeopathy that's been published up to February 2020. It contains 558 abstracts from human, animal, plant and in-vitro scientific studies published in peer-reviewed journals that attest to the reality that there is a wealth of well-constructed objective evidence that confirms a positive effect from interventions using homeopathy.

## Human studies

1. Albertini H, et al. **Homeopathic treatment of dental neuralgia by Arnica and Hypericum.** *Journal of the American Institute of Homeopathy*, 1985, 3, 126-129. Carried out at the Faculty of Medicine of Marseilles, this placebo controlled study was designed to determine the effectiveness of Arnica 7C and Hypericum 15C for people suffering from dental neuralgia. 60 people received either 4 pilules of Arnica alternated with 4 pilules of Hypericum every 4 hours or placebo administered in the same way. Pain levels were assessed over 3 days from the beginning of the trial. From this assessment it was found that 12 of the 30 people who received the placebo had a positive response to this intervention, and 23 of the 30 people given the homeopathic medicines responded positively to these.

2. Alibeu JP, Jobert J. **Aconite in Post-Operative Pain and Agitation in Children,** *Pediatric*, 1990, 45, 7-8, 465-6. In this double blind placebo controlled trial, 50 children suffering from post-operative pain and agitation were given either *Aconite* or placebo. The effects of *Aconite* were significantly better than placebo.

3. Ammerschlagel H, et al. **Treatment of inflammatory diseases of the upper respiratory tract - comparison of a homeopathic complex remedy with xylometazoline.** *Forsch Komplementarmed Klass Naturheilkd.* 2005, 12, 1, 24-31. In a multi-centre, controlled, cohort study, 739 people suffering from rhinitis or sinusitis were given either xylometazoline (a drug commonly used for nasal congestion,

sinusitis and hay fever) or a homeopathic combination. Both forms of therapy provided similarly effective results.

4. Baars EW, De Bruin A. **The effect of Gencydo injections on hayfever symptoms: a therapeutic causality report.** *J Altern Complement Med.* 2005 Oct, 11, 5, 863-9. In this study, 13 Dutch medical practitioners submitted patients (who between them had a mean history of hayfever of 9 years), for therapy involving injections of a combination homeopathic product. All but 1 patient were given the medication before the onset of the hayfever season and all were given it during the hayfever season. Of these 13, during the course of the trial 9 people found no increase in nasal and non-nasal hayfever symptoms when the hayfever season began or during it and only 1 of the 13 felt compelled to use conventional hayfever medication.

5. Baduluci S, et al. **Zinc: Immunoglobulin Relationship in Patients with Cirrhosis of the Liver Before and After treatment with Zincum metallicum 5C.** International Research Group on Very Low Dose and High Dilution Effects, 1993 Giri Meeting, *British Homoeopathic Journal*, April, 1994, 83, 84-100. 10 people suffering from Zinc deficiency as determined by atomic absorption spectrophotometry were treated with *Zincum metallicum* 5C. Analysis following this treatment showed a substantial improvement in zinc levels.

6. Banerjee A, et al. **Can Homeopathy bring additional benefits to Thalassaemic Patients on Hydroxyurea Therapy? Encouraging Results of a Preliminary Study.** *Evidence Based Complementary and Alternative Medicine*, 2010, 7, 1, 129–136. In this observational study, 38 people suffering from thalassaemia who were taking hydroxyurea, were allowed to continue their use of hydroxyurea but were given one of several homeopathic medicines. The effects of this additional treatment were compared to the outcomes of another 38 people suffering from thalassaemia who used hydroxyurea alone, assessed immediately before and at 3 months after starting the homeopathic treatment. Of a range of haematological and clinical parameters, those people using the combined treatment showed an increase in levels of foetal haemoglobin over those on hydroxyurea alone, along with a reduction in serum ferritin. Where splenomegaly was present, a significant reduction in this was noted in those on the combined therapy and this group also noted an improvement in general health with a longer period allowed between blood transfusions.

7. Barnes J., Resch K-L., Ernst E. **Homoeopathy for Post-Operative Ileus: A Meta-Analysis.** *Journal of Clinical Gastroenterology*, 1997, Dec, 25, 4, 628- 633. 7 separate trials examining the effects of homoeopathic treatment for post-operative ileus after abdominal or gynaecological surgery when compared with placebo, specifically, for the time to first flatus after surgery. Subsequent analysis showed that homoeopathy provided superior results to placebo.

8. Bell IR, et al. **Improved clinical status in fibromyalgia patients treated with individualized homeopathic remedies versus placebo.** *Rheumatology* (Oxford). 2004, 43, 5, 577-82. 53 people suffering from fibromyalgia took part in this trial, comparing individualised homoeopathic treatment to placebo. The levels of tender points and tender point pain as well as quality of life, mood and general health were assessed by the practitioners and subjects involved in the trial. 3 months after commencing treatment, all parameters were found to be improved by the use of homoeopathy when compared to placebo.

9. Belon P, et al. **Can administration of potentized homeopathic remedy, Arsenicum album, alter antinuclear antibody (ANA) titre in people living in high-risk arsenic contaminated areas? I. A correlation with certain hematological parameters.** *Evid Based Complement Alternat Med.* 2006, 3, 1, 99-107. To investigate whether or not potentised Arsenicum album has an effect on arsenic-induced

elevations of antinuclear antibody (ANA), selected inhabitants of arsenic affected villages in India's West Bengal were randomly assigned to receive either Arsenicum album or placebo. After 2 months of administration, it was found that not only did the remedy provide superior results in reducing the ANA titre, it also caused a correction of arsenic-induced haematological changes such as total count of red blood cells and white blood cells, packed cell volume, haemoglobin content, erythrocyte sedimentation rate and blood sugar level.

10. Belon P, et al. **Homeopathic remedy for arsenic toxicity? Evidence-based findings from a randomized placebo-controlled double blind human trial.** *Sci Total Environ.* 2007, 384, 1-3, 141-50. This was a pilot study carried out on 25 people from an Indian village where arsenic contamination was endemic and 18 people from another Indian village without arsenic contamination. These people were randomly assigned to receive either Arsenicum album 30C or a succussed placebo control. After 2 months on either active medicine or placebo, these people had their blood and urine assessed for arsenic as well as several widely accepted toxicity biomarkers and pathological parameters related to arsenic toxicity. The use of Arsenicum album 30C had a beneficial effect on these biomarkers. It was also found to improve the appetite and general health of those people who previously exhibited signs and symptoms of arsenic toxicity.

11. Berrebi A, et al. **Treatment of Pain due to Unwanted Lactation with a Homeopathic Preparation given in the Immediate Post-Partum Period.** *Gynecology, Obstetrics and Biological Reproduction*, 2001, 30, 4, 353-7. 71 post-parturient women who were unwilling or unable to breast feed were divided into 2 groups, one being given a placebo and the other group being given a mixture of Apis 9C and Bryonia 9C, to determine the effects of either on lactation pain. A significant improvement was noted in the group using the mixture, when compared to those in the placebo group.

12. Bignamini M, Saruggia M, Sansonetti G. **Homeopathic Treatment of Anal Fissures using Nitricum acidum** *Berlin Journal on Research in Homoeopathy*, 1991, 1, 4/5, 286-7. Patients using Nitricum acidum 9C once daily in a double blind placebo controlled trial found subjective relief with the medicine over the placebo.

13. Bornhoft G, et al. **Effectiveness, safety and cost-effectiveness of homeopathy in general practice - summarized health technology assessment.** *Forsch Komplementarmed.* 2006, 13 Suppl 2:19-29. This was an effectiveness and safety study on homeopathy carried out for the Swiss Federal Office for Public Health. Using Internet-based resources, manual search and contact with experts, and assessed according to internal and external validity criteria, investigators found that the trend was in favour of a therapeutic benefit from homeopathic intervention. In addition, it was stated by the authors of the study that, "...effectiveness of homeopathy can be supported by clinical evidence and professional and adequate application be regarded as safe. "

14. Brigo B, Serpelloni G, **Homoeopathic Treatment of Migraine** *Berlin Journal on Research in Homoeopathy*, 1991, 1, 2, 98-106. In this randomised, placebo controlled double blind study, 60 people suffering from migraine were treated using constitutional homoeopathy over a period of 4 months. Those patients in the control group experienced a reduction in migraine frequency from 9.9 attacks per month to 7.9 per month, while those in the treatment group reduced their monthly attack rate from 10 to between 1.8 and 3 per month.

15. Cairo J, et al. **Homeopathy in Cuban Epidemic Neuropathy: An Open Clinical Trial.** *British Homoeopathic Journal*, 2001, 90, 3, 154-7. In this uncontrolled trial, 15 people suffering from optic endemic neuropathy (group 1) and 16 people suffering from peripheral epidemic neuropathy (group 2) were given homeopathic Carbon sulph and homeopathic Tabacum for 30 days. The subjects were

assessed for improvement in neurologic and ophthalmologic tests on commencement and again at 90 days after commencement of the trial. Those in group 1 experienced an averaged improvement of 73% and group 2 of 12.5%.

16. Campistranous- Lavout JL, et al. **Hypertension Trial.** *Boletin Mexicano*, 1999, 32, 42- 47. 68 people suffering from mild to moderate hypertension were enrolled in a double-blind randomised clinical trial comparing individualised homeopathic therapy with placebo. Successful results were obtained with 82% of those using homeopathy compared with 57% of those using placebo.

17. Castellsague API, Sturza CM. **Retrospective Study in Asthma,** *Revista Homeopatica AMBH*, 1998, 37, 5-21. In this multi-centre retrospective (uncontrolled) analysis, 196 people were treated for asthma with homeopathy. Of the 196, 54 were claimed to have been cured and improvement was seen in a further 117.

18. Cavalcanti AM, et al. **Effects of homeopathic treatment on pruritus of haemodialysis patients: a randomised placebo-controlled double-blind trial.** *Homeopathy*. 2003, 92, 4, 177-81. Pruritis, commonly experienced by those undergoing haemodialysis, was treated in 20 subjects under double-blind placebo-controlled randomised trial conditions comparing individualised homeopathic treatment to placebo. Assessments were made at 15, 30, 45 and 60 days treatment, and after collating the results, researchers found that homeopathic management reduced pruritis by 49%. The majority of the reduction in pruritis had occurred by day 30.

19. Chapman EH, et al. **Homeopathic Treatment of Mild Traumatic Brain Injury.** *Journal of Head Trauma and Rehabilitation*, 1999, 14, 6, 521-42. In a randomised, double blind, placebo controlled trial involving 60 subjects and a 4 month follow-up period, homeopathy provided significant improvement in parameters using measures such as "Difficulty with Situations", "Symptoms Rating Scale" and a "Participation in Daily Activities" scale.

20. Chapman EH. **Homeopathic treatment of patients with persistent mild traumatic brain injury.** *British Homeopathic Journal*, 2000, 89, Suppl 1, S60. In a randomised, placebo-controlled trial, 50 people with persistent mild traumatic brain injury were treated either with their constitutional homeopathic remedy or placebo. The homeopathic treatment provided superior results to those from the placebo control.

21. Clark J, Percivall AA. **Preliminary Investigation into the Effectiveness of the Homeopathic Remedy, Ruta graveolens, in the Treatment of Pain in Plantar Fasciitis.** *British Journal of Podiatry*, 2000, 3, 3, 81- 85. In a randomised double-blind trial, 14 people suffering from plantar fasciitis were given Ruta graveolens 30C or placebo. Those using the Ruta reported a greater level of pain relief than those using placebo.

22. Clover A, Ratsey D. **Homeopathic Treatment of Hot Flushes.** *British Homeopathic Journal*, 2002, 91, 75-79. Researchers at the Tunbridge Wells Homeopathic Hospital in the UK enrolled 31 female outpatients who had complained of menopausal flushes in this trial. They were treated using individualised homeopathic management and after their initial consultation and at least one follow-up, patients completed their own self-assessment rating of the treatment. 79% of the women enrolled in the study reported a reduction in both the severity and frequency of hot flushes as a result of the treatment.

23. Colin P. **Homeopathy and respiratory allergies: a series of 147 cases.** *Homeopathy*, 2006, 95, 2, 68-72. In this case series, 147 consecutive patients suffering from respiratory allergy who attended a private homeopathic clinic were assessed for their response to constitutional homeopathic treatment.

Of these patients, 105 were sufferers of ear, nose and throat allergies. Only 2 of these patients failed to respond to treatment and none experienced an exacerbation of symptoms. The other 42 patients were sufferers of pulmonary allergies, all except 5 of whom experienced relief, with 2 of these experiencing an exacerbation of symptoms.

24. Davidson JRT, et al. **Homeopathic Treatment of Depression and Anxiety.** *Alternative Therapies*, 1997, 3, 1, 46-49. In this trial, 12 subjects suffering from major depression, social phobia or panic disorder, were treated for 7 to 80 weeks with individually prescribed homeopathic remedies and assessed on a clinical global improvement scale (CGIS) or self-rated SCL-90 scale and the Social Phobia Scale (SPS). Subjects were given homeopathic treatment either because they asked for it directly or because conventional treatment had been unsuccessful. The overall response rates for homeopathy were 58% on the CGIS and 50% on the SCL-90 and SPS.

25. Derasse M, Klein P, Weiser M. **The effects of a complex homeopathic medicine compared with acetaminophen in the symptomatic treatment of acute febrile infections in children: an observational study.** *Explore (NY)*. 2005, 1, 1, 33-9. In this non-randomised observational study carried out in 38 Belgian clinics, 198 children suffering from acute febrile infections were assessed for their response to either acetaminophen or a combination of homeopathic medicines. The children had their infection symptoms, which included fever, cramps, disturbed sleep, crying, and difficulties eating or drinking, assessed and graded for a response to their respective medicines. After taking the results from all variables into account, it was found that the homeopathic combination was as effective as acetaminophen. The tolerance to medicines was also assessed as part of this trial and in this respect it was found that the homeopathic combination was superior to the acetaminophen.

26. Dorfman P, Lassere NM, Tetau M. **Homeopathic Medicines in Pregnancy and Labor,** *Cahiers de Biotherapie*, 1987, 94, April, 77-81. In this randomised double blind trial involving 93 women, a combination of homeopathic *Caulophyllum*, *Actea racemosa*, *Arnica*, *Pulsatilla* and *Gelsemium*, all in 5C potency, was used to determine its effect on the length of labour and complication rates. The medicine was used from the beginning of the ninth month of pregnancy, and reduced the average time of labour to 5.1 hours, in comparison to the placebo, the use of which was associated with an average labour time of 8.5 hours. The rate of complications for those using the homeopathic combination was 11.3% while the complication rate under placebo was 40%.

27. Eid P, Felisi E, Sideri M. **Applicability of Homeopathic *Caulophyllum thalictroides* during labour.** *British Homeopathic Journal*, 1993, October, 82, 245-248. 22 women experiencing their first pregnancies were given homeopathic *Caulophyllum* and their post-treatment deliveries compared to 34 labours retrospectively selected on the criteria used to select the test subjects. On analysis it was found that the women who were given the homeopathic remedy had a reduction of the duration of labour by an average of 90 minutes.

28. Ernst E, Saradeth T, Resch KL. **Complementary Treatment of Varicose Veins.** *Phlebology*, 1990, 5, 157-163. Over a period of 24 days, the effects of a homeopathic complex preparation and placebo on varicose veins were tested in a double-blind trial of 61 people suffering from this condition. The homeopathic complex produced an averaged 44% improvement in the condition while those given the placebo experienced an averaged worsening of the disorder.

29. Ferley JP, et al. **A Controlled Evaluation of a Homeopathic Preparation in the Treatment of Influenza-like Syndrome.** *Br J Clin Pharmacol*, 1989, 27, 3, 329-335. 487 people suffering from influenza were assigned to either *Oscillococcinum* (*Anas barb.*) 200CK or placebo, twice daily for 5 days. Significant results were achieved with the medicine over the placebo in all areas measured. This

trial was repeated in 1998 (Papp R, Schuback G, Beck E, Burkard G, Bengel J, Lehl S, Belon P. Oscillococcinum in Patients with Influenza-like Syndromes. *British Homeopathic Journal*, April 1998, 87, pp69-76) with 372 people with the same results.

30. Fisher P, et al. **Effect of Homoeopathic Treatment on Fibrositis.** *British Medical Journal*, 1989, 299, 365-366. Patients using *Rhus tox* 6C three times daily in a double blind placebo controlled crossover trial found significant relief with the medicine over the placebo.

31. Fisher P. **An Experimental Double-blind Clinical Trial method in Homoeopathy- Use of a Limited Range of Remedies to Treat Fibrositis.** *British Homoeopathic Journal*, 1986, 75, 3, 142-7. 24 subjects suffering from fibrositis were treated for the condition for 3 months with Arnica, Bryonia or *Rhus tox*, depending upon the similarity between the individuals' symptoms and the clinical picture for the remedy. Using scores for pain, number of tender spots, and sleep quality to determine the response to the therapy, these remedies produced a statistically significant improvement, but only when the remedy was well indicated.

32. Frass M, et al. **Adjunctive homeopathic treatment in patients with severe sepsis: a randomized, double-blind, placebo-controlled trial in an intensive care unit.** *Homeopathy*, 2005, 94, 2, 75-80. In this study, 70 people admitted to an intensive care unit suffering from severe sepsis were treated either with individualised homeopathic treatment or placebo. On reviewing the signs of sepsis, organ failures, need for mechanical ventilation and other parameters at 180 days after beginning treatment, 76% of the patients using homeopathy met survival criteria versus 50% of those on placebo.

33. Frass M, et al. **Influence of potassium dichromate on tracheal secretions in critically ill patients.** *Chest*. 2005, 127, 3, 936-41. Stringy tracheal secretions often complicate or even prevent extubation of people breathing with continuous positive airway pressure. This issue provoked the development of a study involving 50 people breathing spontaneously with continuous positive airway pressure who were randomly assigned to receive either 5 globules twice daily of Kali bic 30C or the same dose and frequency of placebo globules. The study results were assessed using the amount of tracheal secretions from day 2 of the study, the amount of time spent by the subjects in the ICU in which they were staying and the time until successful extubation. After the results were assessed, it was found that those who'd been given the Kali bic produced less tracheal secretions than those on placebo, their stay in the ICU was shorter than those on placebo as was their time to successful extubation.

34. Frei H, Thurneysen A. **Treatment for Hyperactive Children: Homeopathy and Methylphenidate Compared in a Family Setting.** *British Homoeopathic Journal*, 2001, 90, 183-188. 114 children attending a paediatric practice where conventional and homeopathic medicines were used, and who were previously diagnosed with ADHD, were given individualised homoeopathic medicines (increasing potencies of the most similar LM remedy). On a parent assessed basis (confirmed by the clinician), if a minimum 50% improvement was not noted within a certain period of time they were placed on Methylphenidate. 75% of the children responded to homoeopathy and 22% required Methylphenidate. 3% of patients did not respond to either regime.

35. Frei H, Thurneysen A. **Homeopathy in Acute Otitis Media in Children: Treatment Effect or Spontaneous Resolution?** *British Homoeopathic Journal*, 2001, 90, 4, 180-2. In a study involving 230 children with acute otitis media, homoeopathic treatment was compared with placebo to determine whether homoeopathic treatment provided a faster resolution of symptoms than placebo. After 12

hours, 72% of those using homeopathy experienced significant relief of symptoms, which was 2.4 times faster than the response to placebo.

36. Frei 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*, 2005c, 164, 12, 758-67. 83 children diagnosed as suffering from ADHD using DSMIV criteria were treated with individually prescribed homeopathic medicines. Using the Connor's Global Index scale it was determined that 63 of these children responded to treatment. These children were then randomised to receive either placebo or homeopathic medicines for 6 weeks and at this point were crossed over to receive placebo if they'd been using the homeopathics or vice versa. At the end of this period it was found that homeopathic therapy provided significantly better results than placebo.

37. Frenkel M, Hermoni D. **Effects of Homeopathic Intervention on Medication Consumption in Atopic and Allergic Disorders.** *Alternative Therapies in Health and Medicine*, 2002, 8, 1, 76-9. In a study carried out at the Technion-Israel Institute in Haifa, Israel, 48 patients were treated for allergic disorders with both homeopathic and conventional medicines, and monitored for their level of use of the conventional medicines. Over the 3 month monitoring period, 56% of patients reduced their conventional medication use by an average of 60%.

38. Friese KH, et al. **The Homeopathic Treatment of Otitis Media in Children.** *International Journal of Clinical Pharmacology and Therapeutics*, 1997, 35, 7, 96-301. In this trial, 131 children suffering from medically diagnosed otitis media were split into two groups. 28 were treated by a team of four ear, nose and throat practitioners using singly or in combination, nasal drops, antibiotics, secretolytics or antipyretics (Group B). 103 children were treated by one homeopath using single homeopathic remedies (Group A). The average duration of pain for Group A was 2 days, as opposed to 3 days for Group B. 70.7% of the Group A children were free of recurrences within the first year of treatment and 29% had a maximum of 3 recurrences while in Group B, 56.5% were free of recurrences within the first year of treatment and 43.5% had a maximum of 6 recurrences.

39. Friese KH, Zabalotnyi DI. **Homeopathy in acute rhinosinusitis : A double-blind, placebo controlled study shows the efficiency and tolerability of a homeopathic combination remedy.** *HNO (Organ of the Deutsche Gesellschaft der Hals-, Nasen- und Ohrenärzte)* 2007, 55, 271-7. Using a randomized, double-blind study method, 144 people with acute rhinosinusitis were treated with either a combination of homeopathic remedies (Group A) or placebo (Group B) and assessed at days 0, 7, 14 and 21 of treatment using a 5 point sinusitis symptom score (the worst score being 20). After analysing the results it was found that those in Group A experienced a drop in symptom scores from 12.1+/-1.6 to 5.9+/-2.0 points after 7 days. Those in Group B found a decrease from 11.7+/-1.6 to 11.0+/-2.9 points ( $p < 0.0001$ ). The final results showed that the homeopathic combination resulted in freedom from complaints in 90.3% of the patients and improvement in a further 8.3%, whereas in the placebo group, the complaints remained unchanged or became worse in 88.9% of the patients.

40. Gassinger CA, Wunstel G, Netter PA. **Controlled Clinical Trial for Testing the Efficacy of the Homeopathic Drug, Eupatorium perfoliatum, D2 in the Treatment of Common Cold.** *Arznei Forsch*, 1981, 31, 4, 732-736. Patients were randomly assigned to receive either Aspirin or Eupatorium perfoliatum 2X. The latter was found to be as effective as Aspirin in reducing the duration and severity of symptoms.

41. Gerhard I, Wallis E. **Individualised Homeopathic Therapy for Male Infertility,** *Homeopathy*, 2002, 91, 3, 133-144. An observational pilot study investigated the effect of individualised homeopathic therapy for 45 sub-fertile males, with specific reference to sperm count and quality, hormone levels and

the general level of health. Sperm count and sperm motility were improved by homeopathy and the improvement was comparable with conventional treatment.

42. Gibson RG, et al. **Salicylates and Homoeopathy in Rheumatoid Arthritis.** *British Journal of Clinical Pharmacology*, 1978, 6, 5, 391-395. In this study, carried out at the Glasgow Homeopathic Hospital, 41 people suffering from rheumatoid arthritis were treated with enteric coated aspirin and 54 people suffering from the same condition were treated with individualised homeopathic treatment. The results of the two forms of therapy were compared at the end of the trial and it was found that those on homeopathic treatment did considerably better than those on aspirin. In addition, 16 of the 41 people taking aspirin during the trial experienced side effects while those taking homeopathics experienced no side effects.

43. Gibson RG, Gibson SL. **Homoeopathic Therapy in Rheumatoid Arthritis: Evaluation by Double Blind Clinical Therapeutic Trial.** *Br J. Clin. Pharmac*, 1980, 9, 453-459. 46 patients using a number of different homoeopathic medicines, prescribed according to homoeopathic principles, were given this medicine or a placebo with their normal anti-arthritic drug. The trial was carried out blind and significant results were achieved with the homeopathic medicine over the placebo in all areas measured.

44. Gimeno LQ. **Homoeopathic Treatment of Human Papilloma Virus infections previously treated by Other Methods.** *British Homoeopathic Journal*, 1996, October, 85, 194-197. In this study, 14 people suffering from recurrent HPV, previously unresponsive to microsurgical procedures, were treated with individualised homeopathy and assessed via cytology prior to treatment, during, and 1 year after commencing treatment. At the final 1 year assessment, 11 of the 14 subjects were declared to be cured.

45. Gmnunder R, Kissling R. **The Efficacy of homeopathy in the treatment of chronic low back pain compared to standardized physiotherapy.** *Zeitschrift für Orthopädie und ihre Grenzgebiete*, 2002, 140, 5, 503-8. In this controlled, randomised, prospective study, 43 people suffering from chronic low back pain were treated for two months either by homeopathy or by standardised physiotherapy. Assessment based on the initial and final clinical investigations, an Oswestry questionnaire, and visual analogue scale, found that the most successful method of treatment was homeopathy.

46. Goldstein MS, Glik D. **Use of and satisfaction with homeopathy in a patient population.** *Altern Ther Health Med*, 1998, 4, 2, 60-5. Carried out in 9 homeopathic clinics in the Los Angeles area, this study was done to determine the success or otherwise of constitutional homeopathic practice as assessed by the people who'd undergone this therapy. The study also looked at the characteristics of the people involved in the study. Information was provided by 77 clients. At 4 months after treatment, 71% of clients reported improvement in their health status. This is contrasted with the fact that 80% of all clients enrolled in this survey had had previous orthodox medical treatment for their condition which they had found unsuccessful. The most common presenting complaints involved the respiratory, gastrointestinal and female reproductive systems and most clients were highly educated but had little knowledge of homeopathy prior to their treatment with it.

47. Guthlin C., Lange O., Walach H. **Measuring the Effects of Acupuncture and Homeopathy in General Practice: An Uncontrolled Prospective Documentation Approach.** *Biomed Central Public Health*, 2004, 4, 1, 6. 5000 people were treated for various ailments using acupuncture, and 900 people were treated using individualised homeopathy, by medical practitioners in a number of clinics throughout Germany. Most of these people had previously been treated using conventional drugs. After treatment, of those being treated using acupuncture, 36% stated that they felt "very much better" and

49% felt, "somewhat better". Of those being treated using homeopathy, 39% stated that they felt "very much better" and 38% felt, "somewhat better".

48. Haidvogel M, Riley DS, Heger M. **Homeopathic and conventional treatment for acute respiratory and ear complaints: a comparative study on outcome in the primary care setting.** *BMC Complement Altern Med*, 2007, 7:7 doi:10.1186/1472-6882-7-7. The aim of the authors of this study was to compare the effectiveness of homeopathic treatment for acute respiratory and ear complaints with orthodox medical treatment for the same conditions. 1577 clients from 57 clinics from Austria, Germany, The Netherlands, Russia, Spain, Ukraine, the United Kingdom and the USA were enrolled in the study. They were asked to rate their response to either therapy at 14 days after beginning treatment. 86.9% of those given homeopathic medicines declared that they had had either a complete recovery or major improvement in their symptoms. 86% of those given orthodox medical treatment reported the same thing. Subgroup analysis found that 88.5% of children given homeopathics reported a complete recovery or major improvement in symptoms whereas 84.5% of those given orthodox medical treatment reported similar success. In addition, the onset of improvement within the first 7 days after treatment was significantly faster in those with homeopathic treatment, both in children and adults.

49. Haila S, Koskinen A, Tenovuori J. **Effects of homeopathic treatment on salivary flow rate and subjective symptoms in patients with oral dryness: a randomized trial.** *Homeopathy*, 2005, 94, 3, 175-81. In this blind, placebo-controlled study, 28 people diagnosed with xerostomia (dryness of the mouth) were randomly assigned to receive either placebo or individually prescribed homeopathic medicines. Assessed using un-stimulated and wax-stimulated salivary flow rates and visual analogue scales at the end of the trial, 26 of those people using homeopathic treatment and none using placebo were found to have had significant relief. Following the assessment of these results those on placebo were switched to homeopathic therapy, after which all experienced relief from their xerostomia.

50. Harrison RE, Burge TS, et al. **Homeopathic Treatment of Burn Scars.** *British Homeopathic Journal*, 1993, October, 82, 252-254. 4 people suffering from hypertrophic scarring subsequent to burns were treated with homeopathic Graphites for 3 months. All 4 subjects were relieved of these symptoms. No controls were used for comparison.

51. Hill N, et al. **A Placebo Controlled Clinical Trial investigating the efficacy of a Homeopathic After-Bite Gel for Reducing Mosquito bite induced Erythema.** *Eur J Pharmacol*, 1995, 49, 103-108. 68 people were bitten at least 3 times by mosquitoes. One of the bites was treated with an after-bite gel containing homeopathic ingredients, another of the bites was treated with a placebo gel, and the third bite remained untreated. Erythema associated with the bites was measured before and regularly after treatment at all of the bite sites and the subjects rated the degree of pruritis experienced at the sites. The active gel provided results that were significantly superior to the placebo or no treatment.

52. Hitzberger G, et al. **Controlled randomised Double Blind study for the Comparison of the Treatment of Patients with Essential Hypertension with Homeopathic and Pharmacologically Effective Drugs.** *Weinere Klinische Wochenschrift (Klinische Wochenschrift)*, 1982, 94, 24, 665-670. In this randomized double-blind cross-over trial, 10 people suffering from essential hypertension were treated either with standard pharmaceutical products or homeopathic medicines. Pharmaceuticals were found to provide superior blood pressure reducing effects but homeopathic were found to be the better choice for the management of the subjective symptoms of hypertension.

53. Issing W., Klein P., Weiser M. **The homeopathic preparation Vertigoheel versus *Ginkgo biloba* in the treatment of vertigo in an elderly population: a double-blinded, randomized, controlled**

**clinical trial.** *Journal of Alternative and Complementary Medicine*, 2005, 11, 1, 155-60. Over a 6 week period, 170 people with an age range of 60- 80 years with atherosclerosis related vertigo were treated for this condition using either a homeopathic combination or herbal *gingko biloba*. Using a patient-assessed dizziness questionnaire and practitioner assessment via line walking and other tests as methods of measurement, participants found that the homeopathic combination provided outcomes as good as those with *gingko*.

54. Itamura R, Hosoya R. **Homeopathic Treatment of Japanese patients with intractable Atopic Dermatitis.** *Homeopathy*, 2003, 92, 2, 108-114. In this uncontrolled study, 17 people suffering from intractable atopic dermatitis undertook individualised homeopathic treatment for the condition in conjunction with their existing pharmaceutical therapy, for a period of up to 2 years and 7 months. On an objective assessment and the patient's own assessment, all patients experienced in excess of 50% improvement by the end of the trial.

55. Itamura R. **Effect of homeopathic treatment of 60 Japanese patients with chronic skin disease.** *Complement Ther Med*, 2007, 15, 2, 115-20. 60 people were enrolled in this uncontrolled trial which was carried out in Obitsu Sankei Hospital in Kawagoe which was designed to determine the effect of individualised homeopathic medicines on several common skin disorders. These disorders included atopic dermatitis, eczema, acne, urticaria, psoriasis and alopecia universalis. Treatment occurred over a period of 3 months to 2 years and 7 months and subjects were permitted to use conventional dermatological treatments while taking part in the trial. Using the trial participants' own assessment, improvement or otherwise was assessed using a nine-point scale similar to the Glasgow Homeopathic Hospital Outcome Scale. On this basis, 6 people reported a complete recovery, 23 reported a 75% improvement, 24 found a 50% improvement and 7 had a 25% improvement). In all, 88.3% of patients reported over 50% improvement.

56. Jacobs J, et al. **Treatment of Acute Childhood Diarrhoea with Homeopathic Medicine.** *Paediatrics*, 1994, 93, 5, 719-725. In a randomised, placebo controlled trial with 81 children suffering from acute diarrhoea, individually prescribed homeopathic medicines were found to be superior to placebo.

57. Jacobs J, et al. **Acute Childhood Diarrhoea- A Replication.** *Journal of Alternative and Complementary Medicine*, 6, 2000, 131-139. In a replication of a previous trial carried out by Jacobs and others, 116 Nepalese children aged 6 months to 5 years suffering from diarrhoea were given an individualised homeopathic medicine or placebo over a 5 day period. Results assessed at the end of this period showed homeopathy to be superior to placebo as a means of relieving diarrhoea.

58. Jacobs J, et al. **Homeopathic treatment of acute otitis media in children: a preliminary randomized placebo-controlled trial.** *Pediatr Infect Dis J*, 2001, 20, 2, 177-83. 75 children suffering from acute otitis media were given homeopathic treatment or were given treatment with placebo. On assessment it was found that homeopathy provided an improved outcome from this condition.

59. Jacobs J, et al, **Homeopathy for childhood diarrhoea: combined results and meta-analysis from three randomized, controlled clinical trials.** *Pediatr Infect Dis J*, 2003, 22, 3, 229-34. In this meta-analysis (an analysis carried out to determine overall trends in a group of similar studies) three double blind clinical trials of diarrhoea in 242 children aged 6 months to 5 years were analysed as one group. The children received either an individualised homeopathic medicine or a placebo, for 5 days after each unformed stool. Records were kept by parents and the duration of diarrhoea was defined as the time until there were less than 3 unformed stools per day for 2 consecutive days. Diarrhoea ceased in those taking homeopathic medicines after 3.3 days and after 4.1 days in those using placebo.

60. Jacobs J, et al. **Homeopathy for menopausal symptoms in breast cancer survivors: a preliminary randomized controlled trial.** *Journal of Alternative and Complementary Medicine*, 2005, 11, 1, 21-7. This study compared the effects of an individualised homeopathic prescription with a homeopathic combination and placebo in 55 women suffering from menopausal symptoms for a period of 1 year. Both the individualised and combination homeopathic therapy provided an improvement in symptoms over placebo, with the individualised homeopathy showing the best outcomes over the first 3 months of the assessment period.

61. Jeffrey SL, Belcher HJ. **Use of Arnica to Relieve Pain after Carpal Tunnel Release Surgery.** *Alternative Therapies in Health and Medicine*, 2002, 8, 2, 66-8. 37 patients who had undergone carpal tunnel release surgery were given a combination of Arnica tablets and Arnica ointment or placebo. After 2 weeks of therapy, the group using Arnica reported a significant reduction in pain.

62. Karow JH, et al. **Efficacy of Arnica montana D4 for Healing of Wounds after Hallux valgus Surgery compared to Diclofenac.** *J Altern Complement Med*, 2008, 14, 1, 17-25. In this randomised, double-blinded, parallel group study, 88 people who were recovering from foot surgery were randomly assigned to receive either Arnica 4X at a rate of 10 pilules 3 times daily or Diclofenac 50mg 3 times daily. Both therapies were used for 4 days following the surgery. At day 4, subjects were assessed for their postoperative irritation, mobility, pain level, and their use of analgesics. Analysis of the results at this point showed that Arnica and Diclofenac provided the same level of reduction in wound irritation (including swelling) and mobility. Subjective assessment by patients rated Arnica as superior to Diclofenac for mobility. Diclofenac was superior to Arnica for pain reduction and there was no significant difference in analgesic use during the 4 days following surgery. It was also noted in the study that Arnica was 60% cheaper than Diclofenac.

63. Kassab S, et al. **Homeopathic Medicines for Adverse effects of Cancer Treatments.** *Cochrane Database Systematic Review*, 2009 Apr 15;(2):CD004845. Cochrane Reviews investigate the effects of interventions for prevention, or treatment of illness, or rehabilitation from illness, in a healthcare setting. Most Cochrane Reviews are based on overviews of randomized controlled trials and other forms of evidence that are deemed to be appropriate. This review was conducted to determine what, if any, evidence (in the opinion of the Cochrane reviewers) exists for the treatment by homeopathy of the effects of conventional cancer therapies. A search through numerous databases revealed 8 controlled trials involved in this area of study, 7 of which were placebo controlled and 1 of which was against an active treatment. In total, the trials covered the outcomes of 664 people who'd been variously suffering from the adverse effects of radiotherapy, chemotherapy or breast cancer treatment. Of the 8, 2 trials exhibited beneficial effects from homeopathy. One of these involved a comparison between the effects of a topical corticosteroid and a homeopathic mother tincture of calendula for the prevention of dermatitis from radiotherapy where the calendula proved to be superior to the drug. The other involved the successful use of a homeopathic complex for stomatitis caused by chemotherapy.

64. Kayne S. **A Pilot Trial to Study the Perceived Effectiveness of Homoeopathic remedies bought Over The Counter (OTC) in British Pharmacies.** *Journal of the Royal London Homoeopathic Hospital NHS Trust*, 1997, January 23-24, 90-94. 1000 questionnaires were sent to 8 UK pharmacies, requesting them to pass the questionnaires to customers. These, questionnaires asked the customers whether or not they found OTC homoeopathic medicines effective for the conditions for which they were purchased. A total of 257 users responded, and the accumulated results showed that 83% of respondents felt better after taking the product.

65. Keil T, et al. **Homoeopathic versus Conventional Treatment of Children with Eczema: A comparative Cohort Study.** *Complementary Therapies in Medicine*, 2008 16, 1, 15—21. This was a prospective, multi-centre, parallel-group, comparative cohort study was conducted in urban and mixed urban—rural regions of Germany. 118 children suffering from clinically defined eczema seen at 54 homeopathic practices and 64 conventional medical practices were treated for the condition with the respective therapeutic protocols normally used in these clinics, i.e. individualised homeopathic or conventional medical therapy. Treatment occurred over a period of 12 months and the outcomes of the 2 different methods of therapy were assessed at 6 months and 12 months by the children or their parents on the basis of eczema signs and symptoms and the quality of life. Overall, on the basis of clinical symptoms and quality of life, there was little difference in the response rates of both groups to their respective therapies although at 12 months after starting treatment, those children who were treated homeopathically had a greater level of recovery from symptoms than those treated with conventional medicine. No adverse reactions were reported for either group

66. Kim LS, et al. **Treatment of seasonal allergic rhinitis using homeopathic preparation of common allergens in the Southwest Region of the US: A randomized, controlled clinical trial.** *Annals of Pharmacotherapy*, 2005, 39, 4, 617-24. In this double-blind trial, 34 people diagnosed with moderate to severe seasonal allergic rhinitis were randomly assigned to receive either placebo or a combination of potentised allergens (made from the pollens of trees, grasses or weeds identified as allergens). After the 4 week treatment period using 2 sprays 3 times a day of either the potentised allergen mix or placebo, the trial subjects were assessed on the basis of their allergy specific symptoms using 3 separate questionnaire formats (RQLQ, MOS SF-36 and the WPAI). The potentised allergen mix showed significant positive changes compared to placebo.

67. Klopp R, Niemer W, Weiser M. **Microcirculatory effects of a homeopathic preparation in patients with mild vertigo: an intravital microscopic study.** *Microvasc Res*, 2005, 69, 1-2,10-6. The aim of this non-randomized, open study was to test the effectiveness of a homeopathic combination product on variables related to microcirculation in 16 people suffering from vestibular vertigo, compared to a control group of 16 untreated people also suffering from vestibular vertigo. Measurements were carried out in two areas (defined by selecting 60 blood-cell perfused nodal points of arterioles, venules, and capillaries with a mean diameter  $\geq$  40 microns): the cuticulum/subcuticulum of the inside left lower arm and an area 5 mm behind the left earlobe. After 12 weeks of treatment, those people receiving the homeopathic preparation exhibited an increased number of nodal points, increased flow rates of erythrocytes in both arterioles and venules, increased vasomotion, and a slight reduction in haematocrit vs. baseline. None of these changes were observed in the control group. Measurements were also made of partial oxygen pressure and the numbers of cell-wall adhering leucocytes, both of which were significantly increased in the test group compared to the control group. All of these parameters were associated with a reduction in the severity of the vertigo symptoms, both on patient as well as practitioner assessment.

68. Kneusel O, Weber M, Suter A. **Arnica montana Gel in Osteoarthritis of the Knee: an open, multicenter clinical trial.** *Advanced Therapies*, 2002, 19, 5, 209-18. In this uncontrolled study, 79 people suffering from mild to moderate osteoarthritis of the knee were given a gel containing Arnica and asked to apply it twice daily. They were assessed at 3 and 6 weeks for pain, stiffness and functional ability of the knee. Both assessments showed a significant reduction in pain and stiffness, and a significant improvement in the functional ability of the knee.

69. Kulkarni A, Nagarkar BM, Burde GS. **Radiation protection by use of homoeopathic medicines.** *Proceedings from the 8<sup>th</sup> Conference of Radiation Oncologists of India*, Bombay, December 1986, reported in *Hahnemann Homoeopath Sand*, 1988, 12, 1, 20-3. 82 patients receiving radiotherapy were

randomly assigned to receive placebo, Cobaltum 30C or Causticum 30C as a means of assessing the effects of these against dermatological reactions to the radiotherapy. The homeopathic medicines provided a significant reduction in the degree of radiation reactions when compared to placebo

70. Lamont J. **Homoeopathic Treatment of Attention Deficit Hyperactivity Disorder (ADHD)**. *British Homoeopathic Journal*, 1997, 86, 4, 196-200. 43 children with ADHD were given either a placebo or an individualised homeopathic medicine, in accordance with a double blind partial crossover dose regime. When the results were compared at the end of the trial, it was found that the homeopathic treatment for ADHD was superior to that using placebo.

71. Launso L, et al. **An exploratory retrospective study of people suffering from hypersensitivity illnesses who attend medical or classical homeopathic treatment**. *Homeopathy*, 2006, 95, 2, 73-80. This study reports the results of orthodox medical treatment compared to the homeopathic treatment of various hypersensitivity illnesses in 88 people. 34 of these people were treated using orthodox medical means and 54 using constitutional homeopathy. 24% of those treated medically experienced an improvement in their condition while 57% of those treated with homeopathy experienced similar relief.

72. Ludke R, Weisenauer M. **A Meta-analysis of Homeopathic Treatment of Pollinosis with Galphimia glauca**. *Wiener Medizinische Wochenschrift*, 1997, 147, 14, 323-7. In this analysis, 7 randomised double-blind placebo controlled trials and 4 trials without placebo controls were examined to determine the therapeutic benefits of Galphimia glauca in pollinosis. In all studies except for one, Galphimia showed significant benefit over placebo where placebo controls were used, or showed significant clinical benefit where the remedy was not compared to placebo. The recovery rates for Galphimia were comparable with those seen with conventional anti-histamines, but without the same side effects.

73. Maas HPJA. **Ulcerative Colitis treated with Homoeopathy**. *British Homoeopathic Journal*, 1993, July, 82, 179-185. In this retrospective case analysis, 24 people suffering from ulcerative colitis were treated in an Argentinean clinic using constitutional homoeopathy over periods of up to 19 years. Of these 24, 16 patients were assessed as having good outcomes.

74. Manchanda RK, et al. **Double Blind Placebo Controlled Clinical Trials of Homoeopathic Medicines in Warts and Molluscum contagiosum**. *CCRH Quarterly Bulletin*, 1997, 19, 25-29. This trial was reported in two parts, one to evaluate the efficacy of homoeopathy for warts (remedies included Ruta graveolens, Nitricum acidum, Dulcamara, Causticum and Thuja) the other to evaluate the homoeopathic remedy, Calcarea carbonica, for Molluscum contagiosum. Placebo controlled studies involving a total of 147 subjects using single remedies in 30C potencies three times daily, 200C twice daily and 1M daily, for 15 days, showed that homoeopathy was superior to placebo. Thuja was the most successful of the remedies used for warts.

75. Marian F, et al. **Patient Satisfaction and Side Effects in Primary Care: An observational study comparing Homeopathy and Conventional Medicine**. *BMC Complement Altern Med*, 2008, 18, 8, 1, 52. This was a study carried out by the Swiss Federal Office of Public Health designed to determine levels of patient satisfaction and the perception of side effects following the use of homeopathic medicine. It was part of a national program designed to evaluate complementary and alternative medicine use in Switzerland. The bulk of the data used in the study came from questionnaires filled in over a specific 4 day period supplied by physicians using conventional medicine, physicians using homeopathic medicine, and from patients who'd filled in questionnaires mailed to them 1 month after treatment. 170 practitioners were involved in the study. A total of 3126 questionnaires were received by

the researchers and analysis of these revealed the following. 21% of those treated with homeopathy reported "complete resolution" of the presenting complaint versus 28% of those on conventional therapy and 53% reported "complete satisfaction" with homeopathic treatment versus 40% of those given conventional therapy. The rate of side effects reported by those using homeopathy was less than those given conventional medicine.

76. Maronna U, Weiser M, Klein P. **Comparison of the Efficacy and Tolerance of Zeel comp. and Diclofenac for the Oral Treatment of Gonarthrosis.** *Biological Medicine*, 2000, 29, 3, 157-158. Diclofenac, a non-steroidal inflammatory drug, is a commonly prescribed medicine for rheumatic diseases. The effects of this drug were compared to those of Zeel, a homeopathic complex preparation, with 121 people suffering from gonarthrosis. The trial was designed as a randomised, double-blind, actively controlled parallel study. Assessments for pain, stiffness and functional ability were carried out at 2, 4, 6 and 10 weeks after commencing treatments and by the end of the 10 week period, there were no statistical differences observed in the outcomes of both treatment regimes. The homeopathic complex product and the drug were equally effective in the management of gonarthrosis.

77. Mathie RT, Farrer S. **Outcomes from homeopathic prescribing in dental practice: a prospective, research-targeted, pilot study.** *Homeopathy*, 2007, 96, 2, 74-81. This paper presented the results of a study into the effectiveness of individualised homeopathic medicines for the management of common dental complaints and the effectiveness of a specific protocol used to collect such data. 14 dentists who routinely practice homeopathy contributed data to the study and data from the observations of and by 726 individual patients were collected. Of the 496 patients who were able to be followed up, 90.1% reported a positive outcome, 1.8% experienced a deterioration of the condition and 7.9% of patients reported no change.

78. Matusiewicz R. **The effect of a homeopathic preparation on the clinical condition of patients with corticosteroid dependant bronchial asthma.** *Biomedical Therapy*, 1997, 15, 3, 70-74. In this double-blind, randomised, placebo-controlled study, 40 people suffering from corticosteroid- dependant bronchial asthma were given either placebo or a combination homeopathic formula, every 5 to 7 days by subcutaneous injection. Using standard spirometry and granulocyte function to measure the response, researchers found that the combination product provided superior results to placebo.

79. McCutcheon LE. **Treatment of anxiety with a homeopathic remedy** *Journal of Applied Nutrition*, 1996, 48, 1& 2, 2-6. 72 people with above-average levels of anxiety were enrolled in this double-blind, placebo-controlled trial and assigned to either a test or control (placebo) group to assess the relative benefits of a combination homeopathic product designed to relieve anxiety. Using sleep loss as a measure of anxiety, the combination product produced results that were better than those from placebo.

80. Milewska G, Trzebiatowska-Trzeciak O. **Homeopathic Treatment of Alcohol Withdrawal** *British Homeopathic Journal*, 1993. October, 82, 249-251. Alcohol withdrawal and delirium tremens experienced by 30 alcoholics was the focus of this uncontrolled study carried out in a Polish medical clinic. Patients were treated with individualised homeopathy and their progress followed for 2 months. The treatment resulted in a reduced duration of alcohol withdrawal time and delirium tremens in all patients.

81. Mohan GR, et al, **Cervical Spondylosis- a Clinical Study**, *British Homeopathic Journal*, July 1996, 85, 3, 131-133. In this uncontrolled study, 154 people suffering from cervical spondylosis were prescribed either homeopathic Calcium fluoride, or a remedy selected via repertorisation of their mental and physical general symptoms, and their progress monitored for 1 year. Of those given Calc

fluor, clinical improvement was seen in 60% of cases. 48% of those given the remedy arrived at by repertorisation reported clinical improvement.

82. Mohan GR, Anandhi KS. **Efficacy of homeopathic drugs in dermatitis of atopic diathesis.** *Homeopathic Links*, 2003, Winter, 16, 4, 257-260. The authors treated 31 people suffering from either atopic skin and respiratory symptoms, or atopic skin symptoms alone. Both groups were treated with individualised homeopathic therapy over a period of 5 years. During a 6 month assessment period following this treatment, the authors determined that 41% of the group with skin and respiratory symptoms achieved not less than a 76% improvement in symptoms and 58% of the group with skin symptoms alone achieved this outcome.

83. Mohan GR. **Efficacy of Homeopathy in Childhood Asthmas.** *Homeopathic Links*, Summer 2007, Vol 20, 104-107. This paper reports of work done in India by homeopath, GR Mohan, looking at the results of the homeopathic treatment of 81 children suffering from clinically defined asthma who had previously been treated unsuccessfully with conventional medicine. This open study involved the use of individually prescribed homeopathic medicines for a period of 2 years as a means of reducing the recurrence of asthma attacks. Results were assessed according to the 12 point Modified Borg Scale, a subjective scale used to assess the severity of dyspnoea. At the end of the allotted 2 year period, the results were analysed and it was found that asthma had become controlled in 60.5% of children who'd been treated with homeopathy, and some control was achieved in a further 21%. 12.3% of the group failed to respond to the treatment. The medicines used most frequently in this study were *Arsenicum album*, *Merc solubilis*, *Hepar sulph*, *Arsenicum iod*, *Antimony tart*, *Pulsatilla* and *Calc carb*.

84. Mojaver YN, et al. **Individualized homeopathic treatment of trigeminal neuralgia: an observational study.** *Homeopath*, 2007, 96, 2, 82-6. This uncontrolled study, carried out in the Department of Oral Medicine at Iran's Rafsanjan University of Medical Sciences, was designed to discover if individually prescribed homeopathic medicines could provide relief from medically diagnosed trigeminal neuralgia. 15 people suffering from the condition were enrolled in the study and after receiving their individual prescriptions they were assessed monthly using a Visual Analogue Scale to gauge the severity of their symptoms. After the results were assessed at 4 months it was found that individualised homeopathic treatment was associated with an average reduction in pain intensity of more than 60%.

85. Müller-Krampe B, et al. **Effects of Spascupreel versus hyoscine butylbromide for gastrointestinal cramps in children.** *Pediatr Int*, 2007, 49, 3, 328-34. In this observational cohort study, 204 children under 12 years of age suffering from gastrointestinal spasms and cramps were given either hyoscine butylbromide, a drug commonly prescribed for these conditions, or Spascupreel, a homeopathic complex. After a 1 week period of treatment, the results from these interventions were assessed by a practitioner reviewing reports from the child's parent or carer using severity of spasms, pain or cramps, sleep disturbances, eating or drinking difficulties, and the frequency of crying, to measure outcomes according to a 4 point scale. Analysis of the results showed that both medicines provided similar levels of benefit.

86. Muscari-Tomaioli G, et al. **Observational Study of Quality of Life in patients with Headache, receiving Homeopathic Treatment.** *British Homeopathic Journal*, 2001, 90, 4, 189-197. In this study, 53 people suffering from headaches were treated by the individual study authors using constitutionally prescribed homeopathic medicines, completing SF-36 health-related quality of life questionnaires before and 4-6 months after beginning the treatment. More than 60% of the subjects experienced an improvement in the condition.

87. Oberbaum M, et al. **Homeopathic Treatment in Emergency Medicine, a case series.** *Homeopathy*, 2003, 92, 1, 44-47. In this study, 15 people suffering from orthopaedic trauma were treated in a medical centre with homeopathy, in addition to standard medical treatment. Treatment was commenced 24 hours after admission. All patients initially received homeopathic Arnica 200C and anxiety was treated with Aconite, Opium, Ignatia or Arsenicum album, all in 200C potency. 24 hours following this treatment, the majority of patients reported a reduction in pain and anxiety. 48 hours after admission, patients were treated with individualised homeopathic remedies. At discharge, 67% of patients rated the homeopathic treatment as successful.

88. Oberbaum M, et al. **The effect of the homeopathic remedies Arnica montana and Bellis perennis on mild postpartum bleeding--a randomized, double-blind, placebo-controlled study: preliminary results.** *Complement Ther Med*, 2005, 13, 2, 87-90. Forty women experiencing post-partum bleeding were randomly assigned to receive a mixture of Arnica 30C and Bellis 30C, Arnica 6C and Bellis 6C, or placebo. Mean haemoglobin values were measured at 72 hours post-partum, at which point it was found that those women given homeopathic therapy experienced significantly less change in haemoglobin values than those given placebo.

89. Pai PN. **Thiosinaminum in the Treatment of Plantar Fasciitis with Calcaneal Spurs.** *British Homoeopathic Journal*, 1992, October, 81, 173-175. In this uncontrolled study, 43 people suffering from plantar fasciitis and calcaneal spurs were treated with homeopathic Thiosinimum, Thiosinimum and Merc cor, or Thiosinimum and Merc biniod. Thiosinimum alone proved to be the therapy most likely to be helpful in resolving recently developed cases.

90. Pai PN. **Nephrotic Syndrome.** *British Homoeopathic Journal*, 1969, 58, 2, 94-101. In a case series, 23 children suffering from clinically diagnosed nephrotic syndrome were treated using individualised homeopathic medicines for periods varying from 1 month to 7 years. Subjects received acute and/or chronic treatment for the condition and in several acute episodes, corticosteroid therapy was used, in addition to homeopathic management. For the majority of the children treated either with homeopathic or a combination of homeopathic and corticosteroid therapy, the severity of the symptoms they had previously experienced was reduced. The main homeopathic remedies used in the cases mentioned in this study included homeopathic Apis mellifica, Arsenicum album, Natrum muriaticum and Silica.

91. Pomposelli R, et al. **Observational study of Homeopathic and Conventional therapies in patients with Diabetic Polyneuropathy.** *Homeopathy*, 2009, 98, 1, 17-25. Researchers at the University of Verona in Italy designed this observational study to compare the effects of homeopathic therapy with conventional drug therapy for diabetic neuropathy. Over a 12 month period, 32 patients treated with homeopathy and 29 patients given conventional drug therapy were assessed for clinical symptoms and quality of life at baseline, 6 months and 12 months after beginning treatment. Improvement from baseline polyneuropathy symptoms was noted in both groups but only those treated homeopathically reached outcomes that were statistically significant. Both groups experienced improvements in blood pressure and body weight as well as levels of fasting blood glucose and glycated haemoglobin. In addition, only those in the homeopathy group noted an improvement in quality of life scores over the period of the study. It was also noted that homeopathic treatment was more economical than the conventional drug alternative.

92. Popov AV. **Homoeopathy in the Treatment of Patients with Fibromyoma of the Uterus.** *British Homoeopathic Journal*, 1992, October, 81, 164-167. In this study, 84 women suffering from various forms of uterine fibromyoma were prescribed individualised homeopathic medicines over a period of 1 to 3 years. Assessments at the end of the treatment period found that pain was improved in 79% of the

subjects, abnormal bleeding was improved in 75% of subjects and in the majority of subjects the treatment resulted in a reduction of fibromyoma volume.

93. Rabe A, Weiser M, Klein P. **Effectiveness and tolerability of a homeopathic remedy compared with conventional therapy for mild viral infections.** *International Journal of Clinical Practice*, 2004, 58, 9, 827-32. In this observational cohort study, 485 people with symptoms of mild viral infection (fever, headache, myalgia, cough or sore throat), were treated either via conventional medical means or with a homeopathic combination product. On a practitioner evaluation basis, at the end of the treatment period, the homeopathic combination provided a successful outcome in 78% of cases and conventional treatment in 52% of cases.

94. Rai Y. **Treatment of Drug Dependents with Homeopathy.** *CCRH Quarterly Bulletin*, 1994, 16, 3&4, 25-28. 261 people suffering from symptoms related to the withdrawal from drugs of dependence were treated with individualised homeopathy. Remedies were given at 8 to 12 hours after ceasing use of the drug. 209 (80%) of the subjects found the treatment to be effective.

95. Rastogi DP, et al. **Homeopathy in HIV infection.** *British Homeopathic Journal*, 1999, 88, 2, 49-57. In a randomised, double-blind placebo controlled trial, 50 people with asymptomatic HIV infection and 50 people with symptomatic (persistent generalised lymphadenopathy) HIV infection and were given either placebo or an individualised homeopathic medicine. Using numbers of pre and post treatment CD4<sup>+</sup>ve T-lymphocytes as a measure, it was found that homeopathic treatment was successful for symptomatic HIV sufferers, but not for asymptomatic sufferers.

96. Reilly R, et al. **Is Homeopathy a Placebo Response?** *Lancet*, Oct 18, 1986, 881- 885. 144 people suffering from hayfever were enrolled in a randomised, placebo controlled trial. The use of 30C mixed grass pollens provided better clinical outcomes than placebo.

97. Riley D, et al. **Homeopathy and Conventional Medicine: An Outcomes Study Comparing Effectiveness in a Primary Care Setting.** *Journal of Alternative and Complementary Medicine*, 2001, 7, 2, 149-59. In this study, carried out by 30 investigators, at 6 clinics in 4 countries, 456 patients suffering from upper respiratory allergies, lower respiratory allergies or ear disorders were assigned to one of two groups- those prescribed homeopathic medicines (group A) or those prescribed standard medical treatment (Group B). The outcome measure was the response to treatment after 14 days, as well as the speed of recovery, rate of side effects, level of general satisfaction and length of consultation. The response to treatment within 14 days was 82.6% in Group A and 68% in Group B. For recovery speed, 67% of Group A recovered within 3 days and 57% of Group A recovered at this speed. The side effect rate for Group A was 8% compared to 22% for Group B. Those claiming to be very satisfied with their respective treatments were 79% of Group A and 65% of Group B. The majority (60%) of both groups received consultations that lasted for between 5 and 15 minutes.

98. Riveron-Garrote M, et al. **Clinical Trial of Asthma.** *Boletin Mexicano*, 1998, 31, 2, 54-61. In this double-blind, randomised, placebo-controlled trial, 63 asthma sufferers were treated for 4 months with either specific homeopathic remedies or placebo. Assessed using peak flow rates, 97% of those taking homeopathic medicines and 12% of those taking placebo experienced an improvement.

99. Robertson A, Suryanarayanan R, Banerjee A. **Homeopathic Arnica montana for post-tonsillectomy analgesia: a randomised placebo control trial.** *Homeopath*, 2007, 96, 1, 17-21. In this trial, 190 people undergoing tonsillectomy were randomly assigned to receive Arnica 30C or a placebo at a dose rate of 2 tablets 6 times in the first post-operative day and then 2 tablets twice a day for the next 7 days. On a patient-assessed 14 days post-operative visual analogue scale for pain, those

given the Arnica 30C were found to have a statistically significant decrease in pain scores compared to placebo.

100. Robinson T. **Responses to homeopathic treatment in National Health Service general practice.** *Homeopathy*, 2006, 95, 1, 9-14. This study was designed to determine the level of effectiveness of homeopathy as used in a general practice clinic where the standard 10 minute consultation time applies. To do this, 5,331 patient files, taken from one 12 month period in one general practice clinic, were examined and those files that described a consultation where a homeopathic medicine was given were separated out for analysis. This produced a total of 489 consultations that resulted in a homeopathic medicine prescription. Of these, 78% of patients had a positive response to their treatment with homeopathy, 19% had no response, and 3% had a negative response.

101. Sanchez-Resendiz J, Guzman-Gomez F. **Polycystic Ovary Syndrome.** *Boletin Mexicano de Homeopatia*, 1997, 30, 11-15. 36 women suffering from Polycystic Ovary Syndrome (PCOS), and fitting the mental picture of the homeopathic remedy Pulsatilla, were given Pulsatilla 6C, 4 hourly throughout the day for 2 weeks after the end of menstruation, and this was repeated for 4 consecutive cycles. At the end of the trial 30 of the 36 women had complete disappearance of the symptoms of PCOS and the production of normal ovulating follicles and a further 4 of the 36 became asymptomatic

102. Saruggia M, Corghi E. **Effects of homeopathic dilutions of China rubra on intradialytic symptomatology in patients treated with haemodialysis.** *British Homeopathic Journal*, 1992, 81, 2, 86-88. Using a double-blind, randomised, crossover, placebo- controlled trial design, 35 people with end-stage renal failure on regular haemodialysis were assessed to determine their response to either placebo or China rubra 9C. Those people using the China experienced statistically significant relief from asthenia, headache and lethargy.

103. Schlappack O. **Homeopathic treatment of radiation induced itching in breast cancer patients. A prospective observational study.** *Homeopathy*, 2004, 93, 4, 210-215. 25 women suffering from post-radiotherapy induced itching were treated at the University of Vienna's Department of Radiotherapy and Radiobiology using individualised homeopathic medicines. After assessment (1-27 days after beginning the treatment) it was found that homeopathic treatment had been successful in 21 of the women enrolled in the study.

104. Schmidt CA. **Double Blind, Placebo-Controlled Trial: Arnica montana Applied Topically to Subcutaneous Mechanical Injuries.** *Journal of the American Institute of Homeopathy*, 1996, 89, 4, 186- 193. In this trial 141 runners were asked to use topical preparations containing placebo, Arnica 1X or Arnica 6C, and to rate the effectiveness of the preparations at relieving post-exercise muscle soreness. The preparation containing Arnica provided superior results to placebo and preparation containing Arnica 1X was reported to be superior to that containing Arnica 6C.

105. Schmiedel V, Klein P. **A complex homeopathic preparation for the symptomatic treatment of upper respiratory infections associated with the common cold: An observational study.** *Explore (NY)*, 2006, 2, 2, 109-14. 379 people suffering from upper respiratory infections were given either conventional medical treatment (antihistamines, anti-tussives, or no steroidal anti-inflammatory drugs) or a combination homeopathic product. Using variables such as fatigue, sensation of illness, chill/tremor, aching joints, overall severity of illness, sum of all clinical variables, and temperature to assess the effects of either form of therapy, the researchers found that both approaches were effective, although the homeopathic combination provided faster relief from symptoms (77% were improved within 3 days compared to 62%).

106. Schneider C, et al. **A homeopathic ointment preparation compared with 1% diclofenac gel for acute symptomatic treatment of tendinopathy.** *Explore (NY)*, 2005, 1, 6, 446-52. In this non-randomised, observational study carried out in 95 German homeopathic and conventional medical clinics, 357 people with various forms of tendinopathy were given either an ointment containing a mixture of homeopathic remedies, or Diclofenac (a popular non-steroidal anti-inflammatory agent), for up to 28 days. Using a four-degree scale on pain-related variables related to motility, and on overall treatment outcome, the ointment containing the mixture of homeopathic remedies provided a therapeutic outcome that was superior to Diclofenac.

107. Schneider C, et al. **The role of a homeopathic preparation compared with conventional therapy in the treatment of injuries: an observational cohort study.** *Complement Ther Med*, 2008, 16, 1, 22-7. The researchers in this study set out to compare the effectiveness of a homeopathic combination product (Traumeel) with conventional medical treatment, for injuries. 125 people suffering from various musculoskeletal injuries were treated either with the homeopathic combination or conventional medicine and were assessed for resolution of the complaint at the end of the trial period. At this point, the 59.4% of the group receiving the homeopathic combination had complete resolution compared with 57.8% of the group treated with conventional medicine. 6.3% of the latter group experienced adverse reactions to the treatment and none of those on the homeopathic combination experienced side effects.

108. Schroder D, Weiser M, Klein P. **Efficacy of a Homeopathic Crataegus preparation compared with usual therapy for Mild Cardiac Insufficiency: Results of an Observational Cohort Study.** *European Journal of Heart Failure*, 2003, 5, 3, 319-26. In a non-randomised cohort study, 212 people suffering from mild cardiac insufficiency were given Cralonin, a homeopathic combination product, or a combination of an ACE inhibitor and diuretic (a combination medical therapy normally prescribed for this condition). Both products were similarly effective in controlling the condition.

109. Seeley BM, et al. **Effect of homeopathic Arnica montana on bruising in face-lifts: results of a randomized, double-blind, placebo-controlled clinical trial.** *Arch Facial Plast Surg*, 2006, 8, 1, 54-9. In this trial, 29 people who were undergoing facelifts were randomised to receive either perioperative homeopathic arnica, or placebo. They were examined post-operatively for bruising at days 1, 5, 7 and 10. Assessment done at days 1 and 7 showed a significant reduction in bruising when compared to placebo.

110. Sevar R. **Audit of outcome in 829 consecutive patients treated with homeopathic medicines.** *British Homeopathic Journal*, 2000, 89, 4, 178- 187. In this study, consecutive patient files in a single homeopathic clinic were examined to determine the success or otherwise of this form of treatment. Of the 829 patients surveyed, 61% had a sustained improvement from their constitutional homeopathic treatment.

111. Sevar R. **Audit of outcome in 455 consecutive patients treated with homeopathic medicines.** *Homeopathy*, 2005, 94, 4, 215-21. This study examined the effect of individualised homeopathic treatment of 455 consecutive patients in a homeopathic medical clinic who'd previously had unsuccessful orthodox medical treatment or were considered to be unsuitable for orthodox medical treatment. Of these, 67% derived benefit from homeopathic therapy, and 33% were able to stop or maintain a substantial reduction in their pharmaceutical drug therapy.

112. Shackleton MF, et al. **The Effect of Homeopathic Coca on High Altitude Mountain Sickness.** *Complementary Health Practice Review*, 2000, 6, 1, 45- 55. 11 members of the 1998 Everest Challenge Expedition were given either placebo or Coca 200C daily. Assessed on the primary

symptoms of altitude sickness as well as oxygen saturation, those using the homeopathic medicine showed significantly less signs and symptoms of altitude sickness.

113. Shealy CN, et al. **Osteoarthritis Pain: A Comparison of Homeopathy and Acetaminophen.** *American Journal of Pain Management*, 1998, 8, 3, 89-91. In this trial, 65 sufferers of osteoarthritis (OA) were split into 2 groups, and through a double blinding process were given either a homeopathic medicine or Acetaminophen, a commonly prescribed drug for pain relief in OA. Researchers found that homeopathy provided a level of pain relief that was superior to Acetaminophen, and produced no adverse reactions.

114. Smith SA, Baker AE, Williams JH. **Effective Treatment of Seborrhaic Dermatitis using a Low Dose Oral Homeopathic Medication.** *Alternative Medicine Reviews*, 2002, 7, 1, 59-67. 41 patients with seborrhaic dermatitis received either placebo or a homeopathic combination product for 10 weeks. Significant improvement was seen in the test group when compared to those using placebo.

115. Spence DS, Thompson EA, Barron SJ. **Homeopathic treatment for chronic disease: a 6-year, university-hospital outpatient observational study.** *J Altern Complement Med*, 2005, 11, 5, 793-8. This study looked at the effectiveness of individualised homeopathic therapy over a 6 year period in a UK homeopathic hospital outpatient department. The results from 6544 consecutive patients were examined, and when compared to baseline observations it was found that of these patients, 70% reported an improvement in their conditions.

116. Stanton HE. **Test and Anxiety- A Five Drop Solution.** *Education News*, 1981, 17, 6, 12-15. In this trial, 40 students suffering from test-induced anxiety were given either homeopathic Argentinum nitricum 12X or placebo. The level of test-induced anxiety was significantly reduced from the homeopathic medicine when compared to the placebo and this effect appeared to persist over time.

117. Steinsbekk A, Ludtke R. **Patients' assessments of the effectiveness of homeopathic care in Norway: a prospective observational multicentre outcome study.** *Homeopathy*, 2005, 94, 1, 10-6. In this prospective uncontrolled observational multi-centre outcome study, 654 people who'd visited 80 Norwegian homeopaths were asked to assess, via a Visual Analogue Scale (VAS) the effectiveness of this form of treatment comparing the VAS score at their first consultation with the VAS score 6 months later. After the results were collated it was found that 70% of those people visiting a Norwegian homeopath reported a meaningful improvement in their main complaint 6 months after the initial consultation.

118. Strauss LC. **The Efficacy of a Homeopathic Preparation in the Management of Attention Deficit Hyperactivity Disorder.** *Biomedical Therapy*, 2000, 18, 2, 197-201. 20 children suffering from ADHD, were given either placebo or a homeopathic combination (Heel Selenium-Homaccord) and were assessed in accordance with pre and post test conduct and psychosomatic problems, impulsivity and anxiety. The homeopathic combination provided superior results to those of placebo.

119. Taylor MA, Reilly D, et al. **Randomised Controlled Trial of Homeopathy versus Placebo in Perennial Allergic Rhinitis with Overview of Four Trial Series.** *British Medical Journal*, 2000, 19 August, 321, 471-476. 51 people suffering from allergic rhinitis were randomly assigned either homeopathically potentised allergens or placebo. Those given the medicine experienced significant relief over those assigned the placebo.

120. Trichard M, Chaufferin G, Nicoloyannis N. **Pharmaco-economic comparison between homeopathic and antibiotic treatment strategies in recurrent acute rhinopharyngitis in children.**

*Homeopathy*, 2005, 94, 1, 3-9. In this 6 month prospective study involving 499 children suffering from acute rhinopharyngitis, the effectiveness, quality of life and cost of treatment with homeopathic (Group A) versus antibiotic (Group B) medicines, as prescribed by French medical practitioners, were assessed. Effectiveness, as measured by the numbers of episodes occurring subsequent to treatment, was 2.71 for Group A and 3.97 for Group B and quality of life as measured by the ParEnt-QoL scale was 21 for Group A versus 30 for Group B, which indicates a higher quality of life for those in Group A. In regard to costs, average direct medical costs were 88 Euros for Group A and 99 for Group B. Parental sick-leave affected 9.5% of the parents from Group A and 30% for Group B.

121. Tuten C, McLung J. **Reducing Muscle Soreness with Arnica Montana.** *Alternative and Complementary Therapies*, December 1999, 5, 6, 369- 372. 23 people were given either placebo or Arnica 6X for the management of delayed onset muscle soreness after exercise. Outcomes were assessed subjectively by the participants themselves, and by creatinine kinase (CK) assays. CK levels are indicative of muscle or connective tissue damage. While there was only a small subjective difference between the 2 groups, the people using *Arnica* 6X produced less CK than those using placebo, which tends to indicate that those using Arnica experienced less tissue damage on exertion.

122. Tveiten D, et al. **Arnica and Muscle Soreness.** *Focus on Alternative and Complementary Medicine (FACT)*, 1998, 3, 4, 155-156. 46 competitors in the 3 day 1995 Oslo marathon were randomly assigned either homeopathic Arnica or placebo twice daily and assessed for muscle soreness after the event. Those using Arnica found significant relief with the medicine over the placebo.

123. Tveiten D, Brusset S. **Effect of Arnica D30 in marathon runners. Pooled results from two double-blind placebo controlled studies.** *Homeopathy*, 2003, 92, 4, 187-9. In this study combining the effects of two clinical trials on homeopathic Arnica D30 (30X), the homeopathic remedy was compared to placebo in 82 Oslo marathon runners for muscle enzymes, electrolytes and creatinine (indicating cell damage) and the subjective control of muscular soreness. Those runners taking Arnica experienced less muscle soreness when compared to placebo, but there was no difference between both groups for muscle enzymes, electrolytes and creatinine.

124. Van Erp VM, Brands M. **Homoeopathic Treatment of Malaria in Ghana.** *British Homoeopathic Journal*, 1996, 85, 2, 66-70. In a randomised double blind trial with limited numbers of subjects, homoeopathic treatment was compared to treatment by Chloroquine. The group using homoeopathic medicines experienced an 83.3% improvement, while the group using Chloroquine experienced a 72% improvement within the same time period.

125. Van Haselen RA, Fisher PA. **A randomized controlled trial comparing topical piroxicam gel with a homeopathic gel in osteoarthritis of the knee.** *Rheumatology*, 2000, 39, 7, 714-9. In this controlled double-blind trial, 172 people with radiographically confirmed symptomatic osteoarthritis of the knee were randomly assigned to receive treatment with either piroxicam gel (a commonly prescribed non-steroidal anti-inflammatory gel) or a gel containing 3 homeopathic ingredients (*Symphytum*, *Rhus tox* and *Ledum*). At the conclusion of the trial it was found that the gel containing the homeopathic ingredients was at least as effective as the piroxicam gel.

126. Van Wasserhoven M, Ives G. **An Observational Study of Patients receiving Homeopathic Treatment.** *Homeopathy*, 2004, 93, 1, 3-11. 782 people suffering from a wide range of diseases who had visited 80 general medical practices in Belgium were treated with individualised homeopathic medicines over an average period of 9 years and 2 months. Most of these people had previously been treated using conventional drugs. The outcomes from this treatment were assessed both by the patients and the practitioners via questionnaires. 13% of the patients assessed in the study expressed

satisfaction with previous conventional treatment and 89% of patients expressed satisfaction with their homeopathic treatment.

127. Von Gasssinger CA, Wunstel G, Netter P. **A Controlled Clinical Trial for Testing the Efficacy of the Homoeopathic Drug Eupatorium perfoliatum D2 in the Treatment of Common Cold.**

*Arzneimittel Forschung*, 1981, 31, 4, 732-736. In this trial, 53 people suffering from the common cold were given either acetylsalicylic acid or Eupatorium perfoliatum 2X. Eupatorium was shown to be as effective as the acetylsalicylic acid in its ability to provide benefit to those suffering from the common cold.

128. Walach H, et al. **Homeopathic Pathogenetic Trials produce More Specific than Non-Specific Symptoms: Results from Two Double-Blind Placebo Controlled Trials.** *J Psychopharmacol*, 2008, 22, 5, 543-52. Researchers set up 2 studies, both of which were carried out in blinded conditions. The first of these compared the symptoms seen in a controlled proving of homeopathically prepared Ozone with the effects of a placebo used in the same way. The second test compared the symptoms seen in a controlled proving of homeopathically prepared Ozone and Iridium, used individually, with the symptoms seen from the use of placebo. On analysis, the results showed that both Ozone and Iridium, when used under proving conditions, produced a statistically significant level of symptoms specific to the original provings for the homeopathic preparation.

129. Waldschütz R, Klein P. **The homeopathic preparation Neurexan Vs. Valerian for the Treatment of Insomnia: An observational study.** *Scientific World Journal*, 2008, 20, 8, 411-20. This German study, conducted across 89 clinics, compared the effects of a homeopathic combination preparation to valerian on sleep latency (the time take to fall asleep), sleep duration, the quality of sleep, and daytime fatigue, over a period of 28 days. 409 people were enrolled in the study and analysis of the results found an improvement from both medicines with a reduction in latency time (37.3 minutes for the combination versus 38.2 minutes for valerian) and increase in sleep duration (2.2 hours for the combination versus 2 hours for valerian). The primary difference between the 2 interventions appeared to be that the homeopathic combination resulted in less daytime fatigue than valerian- 49% versus 32%.

130. Weatherley-Jones E, et al. **A randomised, controlled, triple-blind trial of the efficacy of homeopathic treatment for chronic fatigue syndrome.** *Journal of Psychosomatic Research*, 2004, 56, 2, 189-97. In this well-controlled trial, where the practitioners, trial subjects and data analysts were all blinded to the group assignments until the end of the data collection period, individualised homeopathic prescriptions were compared to placebo in 79 people suffering from chronic fatigue syndrome (as determined by the Oxford criteria for CFS). The trial was carried out over a 6 month period with monthly observations used to determine clinical progress according to the Multidimensional Fatigue Inventory (MFI) as a primary measure and the Fatigue Impact Scale and Functional Limitations Profile as secondary measures. On the primary MFI measure, those using the individualised homeopathy had significant improvement over placebo.

131. Weiser M, Clasen BPE. **Controlled Double Blind study of a Homoeopathic Sinusitis Medication.** *Biological Therapy*, 1995, 13, 1, 4- 11. In a randomised double-blind placebo controlled trial, 155 people suffering from sinusitis were given either a placebo or a homoeopathic combination (Heel Euphorbium compositum). Subjective responses showed a greater improvement in those using the homoeopathic combination than those given placebo.

132. Weisser M, Strosser W, Klein P. **Homeopathic vs Conventional Treatment of Vertigo.** *Arch Otolaryngol Head Neck Surg*, 1998, 124, 8, 879-885. A study group of 119 people suffering from

vertigo were treated either with betahistine hydrochloride (acting as an active control, commonly prescribed by medical authorities for this condition) or a homeopathic complex. Both of the interventions were equally successful in relieving vertigo.

133. Weiser M, Gegenheimer LH, Klein P. **A Randomised Equivalence Trial Comparing the Efficacy and Safety of Luffa comp.-Heel Nasal Spray with Cromolyn Sodium Spray in the Treatment of Seasonal Allergic Rhinitis.** *Forschende Komplementarmedizin*, 1999, 6, 3, 142-148. In this trial, 146 people suffering from hay fever were treated with either Luffa comp.-Heel Nasal Spray (a homeopathic combination product) or with Cromolyn Sodium Spray (a pharmaceutical drug commonly prescribed for hay fever). The treatment outcomes were measured according to a quality of life scale and both medicines provided the same level of remission of the condition, which was rapid and persistent.

134. Widrig R, et al. **Choosing between NSAID and arnica for topical treatment of hand osteoarthritis in a randomised, double-blind study.** *Rheumatol Int*, 2007, 27, 6, 585-91. Using a double-blind protocol, 204 people suffering from radiologically confirmed and symptomatically active osteoarthritis were randomly assigned to receive either topical arnica or topical ibuprofen to be applied to the area where the condition was active. The success or failure of the treatments was assessed according to functional ability of the affected part and pain intensity in this area after 21 days of continuous treatment. Assessment of the results at the end of this period found that topical arnica was as successful as topical ibuprofen for the management of osteoarthritis.

135. Wiesenauer M, Haussler S, Gaus W. **Pollinosis therapy with Galphimia glauca.** *Fortschritte der Medizin*, 1983, 101, 17, 811-814. Using a randomised, placebo-controlled, double-blind, multi-centre design in this trial, 86 people suffering from hay fever were treated for 5 and a half weeks with either homeopathic Galphimia glauca 4X or placebo. Therapeutic success was seen in 83% of those using the Galphimia and 47% of those using placebo.

136. Wiesenauer M, Gaus W, Haussler S. **Treatment of Pollinosis with Galphimia glauca.** *Allergologie*, 1990, 13, 359-363. 54 practitioners treated 201 people suffering from hay fever either with placebo or homeopathic Galphimia glauca. Assessment at the end of the 5 week treatment period found that nasal symptoms were cured or significantly improved in 77% of subjects using Galphimia versus 46% of those using placebo and eye symptoms were cured or significantly improved in 77% of subjects using Galphimia versus 51% of those using placebo.

137. Wiesenauer M, Gaus W. **Proof of the Effectiveness of a Homeopathic Preparation in Chronic Polyarthrits.** *Erzten Akt Rheumatol*, 1991, 16, 1-9. In this randomised, double-blind clinical trial, 111 people being treated by 6 general practitioners for rheumatoid arthritis were given either placebo or a combination of homeopathic Berberis, Bryonia, Ledum, Nux vomica and Ledum. Using pain, stiffness, inflammatory signs, fatigue and a functional index to determine clinical outcomes, at the end of the 12 week treatment period it was found that the homeopathic combination provided superior results to those of placebo.

138. Witt CM, et al. **Homeopathic medical practice: long-term results of a cohort study with 3981 patients.** *BMC Public Health*, 2005, 3, 5, 115. In this study, 3981 patients being treated in private homeopathic medical clinics in Germany and Switzerland were assessed for the effectiveness of their homeopathic treatment over a 2 year period. When compared to baseline assessments taken immediately before treatment had begun, the adults in the study experienced a reduction in disease severity of 52% and children by 64%.

139. Witt C, et al. **Outcome and costs of homeopathic and conventional treatment strategies: a comparative cohort study in patients with chronic disorders.** *Complement Ther Med*, 2005, 13, 2, 79-86. This cohort study, carried out in Germany, examined the outcomes of homeopathic treatment compared to the orthodox medical treatment of 493 people suffering from a range of chronic illnesses including headache, lower back pain, insomnia, depression, bronchial asthma, atopic dermatitis and allergic rhinitis. The patients' assessments, taken at 6 months and 12 months from the beginning of the treatment, found that homeopathy provided a greater level of improvement in their illnesses than orthodox medical intervention. This difference appeared to be more pronounced in children than in adults. In regard to the cost of each type of therapy, this study showed these costs to be similar to each other.

140. Witt CM, et al. **How healthy are Chronically Ill Patients after Eight years of Homeopathic Treatment? - Results from a long term observational study.** *BMC Public Health*, 2008, 8, 413, doi: 10.1186/1471-2458-8-413. German academic and researcher Professor Claudia Witt has been responsible for a number of excellent papers on homeopathy and in this, she and co-workers drew data from 103 Swiss and German homeopathic medicine clinics in an effort to determine the level of change to the health status of patients over periods of 2 and 8 years, as a result of homeopathic intervention, over these times. Data was collected from 3709 patients who were asked to assess the level of change to the severity of their medical complaints and quality of life, at the time of first consultation, at 2 years, and at 8 years from that point. The data from adults and children were assessed separately and the former experienced an average reduction in disease severity from 6.2 at baseline to 2.9 at 2 years to 2.2 at 8 years. For children, a reduction from a baseline disease severity of 6.1 to 2.1 at 2 years was noted and then to 1.7 at 8 years. Physical and mental quality of life scores for both groups increased significantly over the study period and interestingly, researchers found that, within the confines of this study, the younger the patient and the more severe the medical condition, the better the potential for the therapeutic success of homeopathy.

141. Wolf M, et al. **Efficacy of Arnica in varicose vein surgery: results of a randomized, double-blind, placebo-controlled pilot study.** *Forsch Komplementarmed Klass Naturheilkd*, 2003, 10, 5, 242-7. In this trial homeopathic Arnica D12 (12X) was compared to placebo, to determine its effect on the size and pain of bruising after surgery. Arnica was used once prior to surgery and then 3 times a day for 2 weeks after surgery. 60 people participated in the trial and on completion it was found that Arnica reduced the size of the bruising by 76% compared to 72% for placebo and pain was reduced by 43% from arnica and by 28% from the placebo.

142. Yakir M, Kreittler S, et al. **Homoeopathic Treatment of Premenstrual Syndrome.** *British Homoeopathic Journal*, 1995, July, 84, 182-183. In a double blind randomised placebo controlled trial carried out in an Israeli hospital, 19 women suffering from clinically diagnosed PMS were treated with individualised homoeopathy or placebo. The homoeopathic treatment provided significant improvement over placebo.

143. Yakir M, et al. **Effects of Homeopathic Treatment in Women with Premenstrual Syndrome: a Pilot Study.** *British Homoeopathic Journal*, 2001, 90, 3, 148-153. 20 women suffering from PMS were enrolled into this randomised, controlled, double-blind trial to receive one of 5 symptomatically selected homeopathic remedies, or placebo. Using daily menstrual distress scores before and at the end of the trial, improvement greater than 30% was experienced by 90% of those using the homeopathic medicine and 37.5% of those using the placebo.

144. Zambrano OC. **The Effects of a Complex Homoeopathic Preparation on Aerobic Resistance, Aerobic Capacity, Strength and Flexibility.** *Biomedical Therapy*, 2000, 18, 1, 172- 175. 25 people

were assessed before and after exercise for the effects of a homeopathic combination (Rendimax) on their cellular oxygenation rate, lactate accumulation, and recovery time after exercise. These were compared with the same parameters for 25 people who had undergone the same exercise regime without the use of this medication. Those using the homeopathic combination exhibited improvement in all parameters measured.

145. Zell J, et al. **Treatment of Acute Sprains of the Ankle.** *Biological Therapy*, 7, 1, 1989, 106. Under double blind placebo controlled trial conditions, patients using an ointment containing homeopathic ingredients for soft tissue injury found significant relief with the medicine when compared to the effects of placebo.

146. Naudé DF, Stephanie Couchman IM, Maharaj A. **Chronic primary insomnia: efficacy of homeopathic simillimum.** *Homeopathy*, 2010, 99, 1, 63-8. This study was done by a team from the Department of Homeopathy at South Africa's Durban University of Technology, and was focused on determining the effects of constitutional homeopathic treatment for insomnia, when compared to a placebo control. 30 people diagnosed with primary insomnia were randomly selected to receive either prescribed homeopathic therapy for 6 weeks or a placebo "prescribed" using the same process. The subjects were assessed at each of the 3 consultations conducted through the treatment process with reference to a sleep diary and sleep impairment index. An analysis of the outcomes showed that sleep duration, sleep quality and all of the associated parameters measured improved significantly under homeopathic treatment, when compared to that using the placebo control.

147. Bracho G, et al. **Large-scale application of highly-diluted bacteria for Leptospirosis epidemic control.** *Homeopathy*, 2010, 99, 3, 156-66. The use of homeopathically prepared materials as an alternative to conventional vaccination has attracted intense criticism and this Cuban study went some way towards addressing these criticisms. It was conducted in three provinces in Cuba where leptospirosis is endemic and active. As a means of attempting to control outbreaks, 2.3 million people were inoculated with a homeopathically prepared version of 4 of the strains of causative organisms endemic to the areas at that time, potentised to 200C. The data from post-inoculation surveillance were used to measure the impact of the intervention by comparing these outcomes with historical trend, forecast models for the regions and data from non-intervention areas. An analysis of these data showed that the use of the homeopathically prepared organisms was associated with a large reduction of disease incidence and relative control of the epidemic.

148. Bell IR, et al. **Effects of homeopathic medicines on polysomnographic sleep of young adults with histories of coffee-related insomnia.** *Sleep Med*, 2011, 12, 5, 505-11. Iris Bell and colleagues from the University of Arizona College of Medicine performed this trial to determine the effects of homeopathically prepared Coffea cruda 30C or Nux vomica 30C on insomnia. 54 subjects with a history of either cynical hostility or anxiety sensitivity (but not both) and a history of coffee-induced insomnia were given either of these two medicines (administered double blind) or a placebo (administered single blind) and monitored via polysomnography, self-assessed sleep diaries, sleep quality index scales and mood state scales, for a period of 1 month. An analysis of the results showed an association between the test substances and a significant improvement in several key areas of measurement, when compared to the control.

149. Goossens M, et al. **Evaluation of the quality of life after individualized homeopathic treatment for seasonal allergic rhinitis. A prospective, open, non-comparative study.** *Homeopathy*, 2009, 98, 1, 11-6. This uncontrolled study from the Katholieke Universiteit Leuven in Belgium builds on previous in-vitro and in vivo work to determine the effects of homeopathically potentised substances on seasonal allergic rhinitis (SAR), and more specifically in this case, quality of

life. 46 people suffering with medically diagnosed SAR were treated by homeopathic physicians with constitutional homeopathy. The subjects completed a rhinoconjunctivitis quality of life (RQLQ) form at baseline and at three and four weeks from this point. An assessment of all of the outcomes showed a reduction in the RQLQ of 3.4 at baseline to 1.97 at 3 weeks and 1.6 at 4 weeks, indicating an improvement in quality of life as it relates to their SAR symptoms.

150. Glatthaar-Saalmüller B. **In-vitro evaluation of the antiviral effects of the homeopathic preparation Gripp-Heel on selected respiratory viruses.** *Can J Physiol Pharmacol*, 2007, 85, 11, 1084-90. This Austrian study was carried out at the University of Veterinary Medicine in Vienna and sought to determine the in-vitro effects of a combination of homeopathically prepared substances on a panel of viruses commonly associated with human illness. The effects of the combination were compared to several positive controls (acyclovir, ribavirin and amantadine hydrochloride) and assessment of the effects was done by standard viral viability tests (plaque reduction assay, cytopathogenic assays, virus titrations, analysis of the viral proteins in virus-specific enzyme immunoassays, and haemagglutination tests). On analysis of the results a significant association was shown between the homeopathic combination and a reduction in the activity or viability of Human herpes virus 1, Human adenovirus C serotype 5, Influenza A virus, Human respiratory syncytial virus, Human parainfluenza virus 3, Human rhinovirus B serotype 14, and Human coxsackievirus serotype A9.

151. Berings-Bueno A, et al. **Mercury Intoxication: High Dilution as Mercury's Chelating Agent.** *Int J High Dilution Research*, 2006, 5, 16, 3-6. In this study, carried out at Brazil's Instituto de Saude, researchers set out to evaluate the effect of homeopathically prepared mercury on mercury elimination in humans. 52 people suffering from mercury intoxication were randomly assigned to receive the homeopathically prepared mercury (Merc sol) or a placebo. Quality of life, assessments of mercury in blood, urine and hair were made at 30 and 60 days. These compared to assessments from the same sources made at the beginning of the study. When compared to controls, after analysing the results it was found that those people received the Merc sol had significant decreases in mercury in hair.

152. Teut M, et al. **Homeopathic treatment of elderly patients - a prospective observational study with follow-up over a two year period.** *BMC Geriatrics*, 2010, 22, 10, 10. This was a cohort study performed to determine the benefit or otherwise of homeopathic interventions for a range of medical complaints experienced by people over the age of 70 years consulting homeopathic medicine physicians in clinics in Germany and Switzerland. A total of 3981 people were enrolled in the study and of these, 83 people took part in a subgroup analysis and nearly all of them were being treated for a chronic illness with an average duration of 11.5 years. Assessments were done using the severity of the complaint, the amount of medication used for the condition, the quality of life (QPOL) as noted by the patient and severity as noted by the physician, at baseline and over 3, 12 and 24 months. A significant reduction in severity of the complaint was noted by both patients and physicians as a result of homeopathic therapy interventions.

153. Möllinger H, et al. **A double-blind, randomized, homeopathic pathogenetic trial with healthy persons: comparing two high potencies.** *Forsch Komplementarmed Klass Naturheilkd*, 2004, 11, 5, 274-80. Scientists at the Sokrates Health Centre in Switzerland performed this blinded trial to determine the pathogenetic effects of 2 homeopathically prepared remedies and a placebo in an effort to determine the similarity between the pathogenetic effects seen for the remedies in this trial and the generally accepted proving symptoms for these remedies. A group of 21 healthy homeopathic medicine practitioners were randomly assigned to one of 3 groups to receive homeopathically potentised *Calendula officinalis*, *Ferrum muriaticum* or a placebo and their symptoms recorded daily. Both

remedy groups exhibited more symptoms than the placebo group and the majority of the symptoms exhibited were consistent with the traditionally accepted proving symptoms for Calendula.

154. Möllinger H, Schneider R, Walach H. **Homeopathic pathogenetic trials produce specific symptoms different from placebo.** *Forsch Komplementmed*, 2009, 16, 2, 105-10. This study, carried out at the University of Osnabrück in Germany, builds on previous work done in the area of pathogenetic trials conducted on homeopathically prepared substances. In this work, researchers compared the pathogenetic effects with Natrum muriaticum 30C and Arsenicum album 30C with placebo. Several other groups doing similar work have then gone on to contrast the pathogenetic symptoms produced by the test substances with those generally accepted as the traditional proving symptoms for these homeopathic remedies, but this was not the objective in this case. On analysis of the results in this instance, it was found that the active substances were associated with remedy-specific symptoms that differed significantly overall and differed from those associated with the placebo.

155. Witt CM, et al. **Homeopathic treatment of patients with chronic low back pain: A prospective observational study with 2 years' follow-up.** *Clin J Pain*, 2009, 25, 4, 334-9. Claudia Witt has done some excellent work in the area of homeopathic research and this adds to an already impressive tally. In this study, Witt and colleagues from the Charité University Medical Center in Berlin, Germany, evaluated what effects, if any, constitutionally prescribed homeopathy had on the health outcomes for people suffering from chronic low back pain. 129 adults suffering from medically diagnosed chronic low back pain for an average duration of 9.6 years were treated by homeopathic physicians who prescribed medicines according to their individual symptoms. Their progress was followed for 2 years and over this time an average of 6.8 different medicines were prescribed. On analysis of the symptom severity and quality of life changes over the period of observation, it was shown that the treatment was associated with marked and sustained improvement in both parameters. In addition, the use of homeopathic therapy was associated with a significant decline in the use of conventional treatment and health services.

156. Witt CM, Lüdtkke R, Willich SN. **Homeopathic treatment of patients with dysmenorrhea: a prospective observational study with 2 years follow-up.** *Arch Gynecol Obstet*, 2009, 280, 4, 603-11. In more good work from the Charité University Medical Center in Berlin, Germany, Claudia Witt and colleagues conducted a multi-centre observational study to determine what effects, if any, constitutional homeopathic prescribing had on women suffering from dysmenorrhoea. 128 women who'd been medically diagnosed with dysmenorrhoea and had had this condition for an average of 11.6 years, were treated by 57 separate physicians with an average of 7.5 different prescriptions. Using complaint severity and quality of life as outcome measures, this treatment was associated with significant improvements in both areas. In addition, the use of other health services was reduced, but there was little impact on the use of conventional medications.

157. Relton C, Weatherley-Jones E. **Homeopathy service in a National Health Service community menopause clinic: audit of clinical outcomes.** *J Br Menopause Soc*, 2005, 11, 2, 72-3. In this study, an audit was performed to determine the outcomes of individualised homeopathic treatment for menopause in a National Health Service community menopause clinic in Sheffield in the UK. Patient-assessed outcomes from 2001 to 2003 were evaluated and were found to be consistent with the notion that this service was associated with an overall improvement in the condition. In particular, an improvement in headaches, flushing, fatigue and emotional and psychological symptoms were noted.

158. Pinto S, Rao AV, Rao A. **Lipid peroxidation, erythrocyte antioxidants and plasma antioxidants in osteoarthritis before and after homeopathic treatment.** *Homeopathy*, 2008, 97, 4,

185-9. In this study, carried out at the Muller Medical College, in South Karnataka, India, scientists attempted to evaluate the effects of constitutional homeopathic treatment on oxidative stress responses in 47 people suffering from osteoarthritis. Measurements before and after treatment were made of erythrocyte lipid peroxidation, erythrocyte antioxidants glutathione, glutathione reductase, superoxide dismutase, catalase and plasma antioxidants ceruloplasmin, glutathione-S-transferase, vitamin C and total antioxidant activity. After comparing the levels of these parameters from baseline with those taken after homeopathic treatment, and contrasting these values taken from normal controls, an association between the homeopathic therapy and a reduction but not complete normalisation of the oxidative stress associated with osteoarthritis was found.

159. Relton C, et al. **Healthcare provided by a homeopath as an adjunct to usual care for Fibromyalgia (FMS): results of a pilot randomised controlled trial.** *Homeopathy*, 2009, 98, 2, 77-82. This University of Leeds study was designed to answer two questions; whether homeopathic plus conventional care versus conventional care alone for Fibromyalgia syndrome could be assessed using a Randomised Controlled Trial (RCT) design, and whether homeopathic care as an adjunct to conventional care provided any extra benefit. Using a pragmatic parallel group RCT design and the total score from the Fibromyalgia Impact Questionnaire (FIQ) at 22 weeks from baseline as the primary measure, the outcomes of 20 people receiving constitutional homeopathic plus conventional care for their Fibromyalgia were compared with 16 people receiving conventional care alone. When assessed against conventional care, homeopathic plus conventional care was associated with significantly greater mean reduction in the FIQ score.

160. Malicka M, Zakrzewska A, Gryczyńska D. **Homeopathic therapy in recurrent respiratory diseases in childhood.** *Borgis-New Medicine*, 2006, 9, 3, 74-78. This Polish study was carried out to determine what effect, if any, a combination of homeopathically potentised ingredients had on children suffering from recurrent respiratory infections, in comparison with the outcomes in children given conventional treatment for these conditions (controls). Using a parent-assessed monitoring protocol to measure the incidence of recurrent respiratory disease over a 3 month period, it was shown that the use of the homeopathic combination product was associated with an overall reduction in the recurrence of respiratory infection compared to both baseline and controls.

161. Mousavi F, et al. **Homeopathic treatment of minor aphthous ulcer: a randomized, placebo-controlled clinical trial.** *Homeopathy*, 2009, 98, 3, 137-41. Scientists at Iran's Tehran University of Medical Sciences investigated the notion that constitutional homeopathy provided a positive outcome in sufferers of minor aphthous ulceration. 100 people suffering from this condition were randomly assigned to receive either placebo, or two doses of a 6C homeopathic medicine as determined by traditional homeopathic repertorisation, separated by a 12 hour period. Their progress was then monitored for 6 days, with data taken at days 4 and 6. Using an assessment based on pain intensity and ulcer size, measurements taken at both data points confirmed the notion that constitutionally prescribed homeopathic therapy was associated with a statistically significant reduction in both of the parameters measured

162. Waisse-Priven S, et al. **Individualized homeopathic treatment of dermatological complaints in a public outpatient clinic.** *Homeopathy*, 2009, 98, 3, 149-53. Brazilian researchers carried out this work to investigate the outcomes associated with the use of constitutional homeopathy in people suffering from dermatological diseases such as atopic dermatitis, psoriasis and chronic urticaria. The homeopathic medicines were prescribed by a team of trained homeopathic physicians who followed the progress of the participants for at least 3 months. 33 people completed the study and on conclusion it was found that 59% of the study participants had a positive outcome (this consisting of a cure or a significant level of relief), 37% of the original cohort dropped out and 4% experienced no relief.

163. Witt CM, Ludtke R. **Homeopathic treatment of patients with chronic sinusitis: A prospective observational study with 8 years follow-up.** *BMC Ear, Nose and Throat Disorders*, 2009, Jul 27;9:7. In yet more work carried out by Claudia Witt and colleagues from the Charité University Medical Center in Berlin, Germany, this multi-centre observational study was done to evaluate the outcomes provided by homeopathic treatment for 134 people suffering from sinusitis. The average duration for sinusitis suffered by this cohort was 10 years and most of these people had had prior treatment for the condition with conventional medicine. The trial participants were monitored for complaint severity and quality of life every 3 months for 2 years from baseline, and again at 8 years. On analysis of these observations it was apparent that the homeopathic treatment was associated with improvements in quality of life and a reduction in the complaint severity of sinusitis, and these improvements persisted for at least 8 years.

164. Heilmann A. **A Combination Injection Preparation as a Prophylactic for Flu and Common Colds.** *Biological Therapy*, 1994, 7, 4, 249-253. In this German study, 120 healthy individuals were injected with saline or a proprietary combination of homeopathically prepared ingredients, and their propensity to develop a cold or flu monitored twice weekly for a period of 8 weeks. They were also monitored for symptom severity and various hematological parameters relevant to viral infections. After the results had been compiled and assessed, it was found that, when compared to the saline control, the use of the homeopathic combination product was associated with a reduced duration of illness and a reduction in 11 of the 16 disease characteristics nominated for assessment.

165. Harkin C. **Effect of Homeopathic calcium on Bone Density.** *Homeopathic Links*, Spring, 2008, 21, 44-49. This was an uncontrolled pilot study carried out to determine the effects of 3 different homeopathically prepared calcium remedies in people suffering from osteoporosis. 15 people with medically diagnosed osteoporosis were prescribed Calc carb 30C, or Calc fluor 30C or Calc phos 30C, based on the similarity of the patients' symptoms with the symptoms seen in the homeopathic proving of the remedies. Bone density was assessed by ultrasonometry at baseline and after 12 months treatment. An analysis of the results showed that 11 of the 15 participants experienced an increase in bone density.

166. Gundimeda RM. **Herniated Lumbar Disc.** *Homeopathic Links*, Winter, 2008, 21, 217-220. In this study, 20 people diagnosed via MRI with disc herniation were advised to undergo surgery by a neurosurgeon. Instead, these people chose to pursue constitutional homeopathic management. The process and outcomes are described and show that after 4 years of treatment and patient assessment according to a symptom-based visual analogue scale, the use of prescribed homeopathic medicine was associated with 76-99% relief for 7 people, 51-75% relief for 2 people, 26-50% relief for 10 people and 0-25% relief for 1 person.

167. Goossens M, et al. **Evaluation of the quality of life after individualized homeopathic treatment for seasonal allergic rhinitis. A prospective, open, non-comparative study.** *Homeopathy*, 2009, 98, 1, 11-6. This Belgian study was conducted to determine the effectiveness or otherwise of constitutional homeopathic intervention for seasonal allergic rhinitis. 46 people suffering from this condition were prescribed homeopathic treatment by one of seven homeopathic physicians based on their individual symptoms and assessed using the Rhino-conjunctivitis Quality of Life Questionnaire at baseline and again 3 and 4 weeks later. A physicians' assessment was also carried out at 4 weeks. On analysis of the results it was found that the average patient-assessed level of symptom severity had fallen significantly and the physician's assessment showed that 4% of patients were cured, 44% were much better, 25% were better, 4% a little better, 9% unchanged and 4% were worse.

168. Cardigno P. **Homeopathy for the treatment of menstrual irregularities: a case series.** *Homeopathy*, 2009, 98, 2, 97-106. In this Italian study, results from women treated with individualised homeopathy for amenorrhoea and oligo-amenorrhoea were compiled to determine whether or not this form of intervention could be shown to provide any benefits. Data from 18 consecutive patients with these conditions over an average treatment period of 21 months were collected. From this it was found that constitutional homeopathic treatment was associated with an increase in the average frequency of spontaneous menstrual cycles per year from 4.32 before treatment to 9.6 cycles per year by the end of treatment period.

169. Witt CM, Lüdtke R, Willich SN. **Homeopathic treatment of patients with psoriasis--a prospective observational study with 2 years follow-up.** *J Eur Acad Dermatol Venereol*, 2009, 23, 5, 538-43. From Claudia Witt and colleagues of the Charité University Medical Center in Germany comes another observational study of the use of constitutionally prescribed homeopathic therapy, this time aimed at the sufferers of psoriasis. 82 people diagnosed with psoriasis, of an average duration of 14.7 years, were treated by 45 individual homeopathic physicians, using an average of 6 different homeopathic prescriptions. Using symptom severity and quality of life to assess their progress, patients were monitored over 2 years and on analysis of the results recorded a statistically significant association was found between the use of individualised homeopathy and a marked improvement in the parameters measured.

170. Bordet MF, et al. **Treating hot flushes in menopausal women with homeopathic treatment--results of an observational study.** *Homeopathy*, 2008, 97, 1, 10-5. In this large multi-national observational study funded by homeopathic medicine manufacturer Boiron, researchers set out to document and analyse the effect of constitutionally prescribed homeopathy on menopausal hot flushes. Data was assembled from 438 women suffering from this complaint who were treated by 99 different homeopathic physicians across 8 countries. On analysis, 90% of the women who were treated in this manner reported a complete amelioration or significant reduction in their symptoms, and of these, the majority experienced this change within 15 days of beginning the treatment

171. Schneider C, et al. **The role of a homeopathic preparation compared with conventional therapy in the treatment of injuries: an observational cohort study.** *Complement Ther Med*, 2008, 16, 1, 22-7. This work was carried out to compare the effects of a proprietary mixture of homeopathically potentised materials with conventional therapy for a range of injuries, predominantly acute injuries such as muscular sprains, strains and bruising. 69 people suffering from these types of complaints were treated with the homeopathic mixture and 64 people with similar injuries were treated using conventional therapy. Data from both groups were assessed according to the numbers of people who experienced complete resolution of the principal complaint by the end of the trial period. This was achieved by 41 people (59.4%) who'd been given the homeopathic mixture and 37 people (57.8) from the group receiving conventional treatment.

172. Rostock M, et al. **Classical homeopathy in the treatment of cancer patients--a prospective observational study of two independent cohorts.** *BMC Cancer*, 2011, Jan 17, 11, 19. This observational study carried out at the Albert Ludwig's University in Freiburg, Germany, was designed to assess the potential inherent in constitutional homeopathy for the treatment of cancer, with particular reference to quality of life. People receiving conventional care for cancer were matched for demography, tumour type and previous therapies, to people receiving homeopathic care, and monitored for 12 months. Measurements were made at 3 and 12 months for quality of life, fatigue, anxiety and depression. 639 people were originally enrolled in the study and while the numbers of fully matched pairs that made it to the end of the study were probably insufficient to be statistically reliable,

there was a significant trend towards an improvement in the quality of life at both 3 and 12 months in the group receiving homeopathic compared to conventional treatment but little difference between the two groups in perceived fatigue, anxiety or depression.

173. Nayak C, et al. **A multi-centric open clinical trial to evaluate the usefulness of 13 predefined homeopathic medicines in the management of acute rhinitis in children.** *Int J High Dilution Res*, 2010, 9, 30. 30-42. This uncontrolled trial was carried out under the auspices of India's Central Council for Research in Homoeopathy and was done to confirm the utility of homeopathic management for acute rhinitis. 638 six month to fifteen year old children suffering from clinically confirmed acute rhinitis were given one of thirteen homeopathic medicines that had been nosologically selected on the basis of the particular symptoms for the condition. The medicines were prescribed in 6C potency, repeated as required, the medicine changed when warranted, and the response monitored for 7 days. The medicines most frequently prescribed were Nux vomica, Mercurius sol. and Belladonna. On analysis of the results a significant change in the score from the baseline ( $p < 0.05$ ) was observed.

174. Bell IR, et al. **Short-term effects of repeated olfactory administration of homeopathic Sulphur or Pulsatilla on electroencephalographic alpha power in healthy young adults.** *Homeopathy*, 2011, 100, 4, 203-11. Iris Bell and colleagues from the University of Arizona explored encephalograms as a means of registering a remedy and potency specific response to homeopathic medicines. To do this they enrolled college psychology course student volunteers who'd been screened for their homeopathic constitutional type (via the Homeopathic Constitutional Type Questionnaire or CTQ) and gave them 4 different succussion levels of 6c, 12c, and 30c potencies of the indicated remedy (in this case either Sulphur or Pulsatilla), one potency per week, or one of two controls, in a randomly assigned order. Remedies were given by inhalation via a double blinded protocol for three weeks and the subjects were assessed using relative EEG power (alpha 1 8-10 Hz; alpha 2 10-12 Hz) averaged over 19 electrode sites. An analysis of the results revealed significant main effects for remedy type (Sulphur > Pulsatilla) in both alpha bands, controlling for gender, baseline resting EEG alpha, and control responses. Additional analyses showed significant nonlinear interactions between dilution and time (weekly session) in alpha 2 for both remedies and alpha 1 for Sulphur.

175. Gründling C, Schimetta W, Frass M. **Real-life effect of classical homeopathy in the treatment of allergies: A multicenter prospective observational study.** *Wien Klin Wochenschr*, 2012, 124, 1-2, 11-7. This Austrian study builds on previous work seeking to determine the outcomes of individualised homeopathic therapy, and in this case, therapy for people suffering from allergic conjunctivitis, allergic rhinitis, bronchial asthma or neurodermatitis. 40 people suffering from this illness were treated using individualised homeopathy in one of nine separate Austrian clinics by general practitioners trained in homeopathy. An assessment of the condition was done at baseline and after treatment by a visual analogue scale. On analysis a statistically significant association was shown between the homeopathic intervention and a discontinuance of conventional medicine in 62% of participants and a dose reduction in at least one conventional medicine in 38% of participants. No side effects were reported during treatment.

176. Nayak C, et al. **Homeopathy in chronic sinusitis: a prospective multi-centric observational study.** *Homeopathy*, 2012, 101, 2, 84-91. This study was conducted under the auspices of India's Central Council for Research in Homoeopathy and sought to assess the benefit or otherwise in chronic sinusitis of 13 predefined homeopathically prepared materials. 550 people with radiologically confirmed chronic sinusitis were given one of thirteen homeopathically prepared materials based on their individual symptoms and monitored at baseline, 3 months and 6 months. Assessment was by radiology and the chronic sinusitis assessment score. On analysis a statistically significant association was found between the homeopathic therapy and a reduction in both the radiological evidence of the condition

and the chronic sinusitis assessment score. The most frequently prescribed homeopathically prepared materials were Silica, Calc carb, Lycopodium, Phosphorous and Kali iod.

177. Kundu T, et al. **Homeopathic medicines substantially reduce the need for clotting factor concentrates in haemophilia patients: results of a blinded placebo controlled cross over trial.** *Homeopathy*, 2012, 101, 1, 38-43. This Indian study looked at the effects of individualised homeopathic management for people suffering from haemophilia. 28 people suffering from this condition were treated with either conventional protocols and placebo control, or conventional protocols and individualised homeopathy, for 12 months, after which the interventions were switched between the two groups. An analysis of the results was done by independent experts who were blinded to the interventions. The analysis was based on the frequency of bleeding, extent of bleeding, blood products consumed, pain scores and general wellbeing. When compared to controls a strong association was seen between the homeopathic intervention and improvements in all of these parameters. Interestingly, plasma levels of clotting factors did not change. Arnica, Ledum palustre, Magnesium phosphorica and Hypericum were found most useful for pain while Arnica, Hamamelis, Millefolium, were useful in acute bleeding. Calcarea fluorica was found to be of greatest help with haemophilic synovitis. Millefolium was effective for epistaxis. Most patients had haemophilic arthritis of one or more joints. Constitutional remedies like Causticum, Calcarea carbonica and Hepar sulphuris and Lachesis were found useful.

178. Eizayaga JE, Eizayaga JI. **Prospective observational study of 42 patients with atopic dermatitis treated with homeopathic medicines.** *Homeopathy*, 2012, 101, 1, 21-7. Researchers at the Universidad Maimónides in Argentina set about evaluating the effectiveness of individualised homeopathic treatment for atopic dermatitis in the University outpatient clinic and the clinic of the treating physician. Patients with medically diagnosed atopic dermatitis were assessed for Rajka and Langeland's score and a set of four Visual Analogue Scales, these evaluating disease severity, itch, general and psychological wellbeing as well as quality of sleep. 26 people with the condition completed the study and after the results were compared with the baseline measurements, it was shown that individualised homeopathic therapy was associated with a statistically significant reduction in these parameters. Sulphur accounted for 60% of cases with good treatment response but aggravations were recorded after nearly 30% of prescriptions.

179. Sinha MN, et al. **Randomized controlled pilot study to compare Homeopathy and Conventional therapy in Acute Otitis Media.** *Homeopathy*, 2012, 101, 1, 5-12. This study, carried out by workers from the Regional Research Institute of Homeopathy in Jaipur, India, sought to contrast the comparative benefits of homeopathy and conventional therapy for acute otitis media. 80 children suffering from this condition were randomly assigned to receive either homeopathic therapy using one of a number of clinically indicated remedies in fifty millesimal potency, or conventional therapy consisting of analgesics, antipyretics and anti-inflammatory drugs. The clinical progress outcomes were monitored over 21 days using the Acute Otitis Media-Severity of Symptoms (AOM-SOS) Scale and Tympanic Membrane Examination. On analysis, there were no significant differences between groups for the main outcome. Symptomatic improvement was quicker in the group given homeopathic therapy, and there was a large difference in antibiotic requirements, favouring homeopathy. The most commonly prescribed homeopathic medicines were Pulsatilla nigricans, Mercurius solubilis, Silicea, Chamomilla, Lycopodium clavatum & Sulphur. These medicines were useful in treatment of (n = 36) 85% of patients.

180. Nayak C, et al. **Management of distress during climacteric years by homeopathic therapy.** *J Altern Complement Med*, 2011, 17, 11, 1037-42. Researchers from India's Central Council for Research in Homoeopathy (CCRH) carried out this study to investigate the effects of individualised homeopathic therapy on the FSH levels, blood lipid profile, signs and symptoms experienced by

women suffering from menopause. Patients were enrolled from 6 CCRH outpatient clinics and received one dose of an individualised homeopathic medicine from homeopathic medical specialists in accordance with their experience of 15 predetermined menopause symptoms. These as well as their FSH and blood lipid profiles were assessed at baseline and again at 12 months from this point. An assessment of the results was made through statistical analysis using the Wilcoxon signed rank test on Statistical Package for Social Sciences (SPSS), the result of which was a significant association between the therapeutic invention and relief from the menopausal symptoms that were assessed. A significant association was also found between the homeopathic therapy and improvements in the blood cholesterol, triglycerides and VLDL profiles of the study subjects. The medicines found to be most frequently indicated and useful were Sepia, Lachesis, Calcarea carb, Lycopodium, and Sulphur.

181. Alecu A, Gafitanu D, Alecu M. **Homeopathic dilutions of TNF-alfa in psoriasis and rheumatoid arthritis.** *Int J High Dilution Res*, 2012, 11, 40, 204-205. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). A Romanian team tested the hypothesis that Tumor Necrosis Factor (TNF) alpha, a pro-inflammatory cytokine, would, when homeopathically potentiated, exert an anti-inflammatory effect. To do this, 10 people diagnosed with either active psoriasis or rheumatoid arthritis, were given daily doses of TNF alpha 9C for 3 months and assessed at the beginning and end of the treatment period. After analyzing the results it was shown that all patients experienced an amelioration of symptoms, with 2 of the 6 people suffering from psoriasis experiencing complete remission of their symptoms.

182. Harrison CC, Solomon EM, Pellow J. **The effect of a homeopathic complex on psychophysiological onset insomnia in males: a randomized pilot study.** *Altern Ther Health Med*, 2013, 19, 5, 38-43. In a randomized, double-blind, placebo-controlled, 4-wk pilot study, using matched pairs, researchers from the Homeopathy Health Clinic at the University of Johannesburg in South Africa enrolled 28 males aged between 18 and 40 years diagnosed with chronic psychophysiological onset insomnia (POI). 14 were given a homeopathic combination and 14 were given a placebo. The results were assessed using the Pre-sleep Arousal Scale (PSAS) and the Sleep Diary (SD), which assessed sleep-onset latency. On analysis of the results it was found that the group receiving the homeopathic combination showed a statistically significant improvement in pre-sleep arousal as well as sleep onset latency over the 4 wks of the study. Intergroup analysis showed through both the PSAS and the SD that the homeopathic combination group had outperformed the placebo group by day 28 of the study.

183. Ganguly S, et al. **Homeopathic treatment of vitiligo: an open observational pilot study.** *Int J High Dilution Res*, 2013, 12, 45, 168-177. This Indian research was carried out to evaluate the effects of homeopathic treatment for people suffering from vitiligo. 27 participants were recruited for a prospective open-label pilot study and treated with individualized homeopathic medicines for 6 months. Efficacy was assessed after 3 months and 6 months using Vitiligo Area Scoring Index (VASI) score, Vitiligo European Task Force (VETF) score, and Dermatological Life Quality Index (DLQI) score, which are validated outcome measures evaluating the area, intensity, spread of depigmentation of vitiligo lesions, and quality of life (QoL). After 6 months of treatment, the median VASI total score improved significantly. Similarly, the VETF median score improved and the total DLQI median score exhibited significant improvement.

184. von Ammon K, et al. **Long-term effects of homeopathic treatment in children suffering from attention deficit disorder with and without hyperactivity.** *Int J High Dilution Res*, 2013, 12, 44, 119-120. Proceedings of the XXVII GIRI Symposium; 2013 Sep 03-04; Bern (Switzerland), 119. 56 children diagnosed with ADHD in accordance with the criteria set out in the DSM-IV were treated with individualised homeopathy using a randomized, double blind, placebo controlled trial (RCT), embedded

in a prospective observational study design. After diagnostic screening and a primary run-in phase of homeopathic treatment, crossover RCT was followed by open-label long term follow-up and cost-effectiveness evaluation. At diagnosis, beginning of, and after each crossover period, and at yearly intervals over 10 years, parents reported Conners' Global Index (CGI, 10 items, rated 0-3 points each; primary variable) by questionnaire or telephone interview. By the end of the study, 62% of the children were without any homeopathic (HOM) or medical treatment. In the remaining children, successful results were achieved in 6 with HOM, 9 with methylphenidate (MPH) and 3 with both HOM and MPH. During cross-over RCT, CGI values detected clinically and statistically significant differences between verum and placebo phase, respectively. Cost-effectiveness evaluation demonstrated non-inferiority of homeopathic treatment compared to MPH treatment.

185. 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, 4, 254-61. This open-label observational study was designed to examine the effects of a homeopathic combination product on anxiety and the quantitative changes in the sleep pattern of the subjects included in the study. 71 people suffering from mild to moderate anxiety were assessed for anxiety and sleep habits at baseline and again after 30 days of use of the combination. At both visits, subjects were administered the State-Trait Anxiety Inventory (STAI)-Y questionnaire (consisting of trait and state subscales) to assess their level of anxiety. Sleep quality was assessed based on the subjects' self-reported number of hours slept and number of night-time awakenings, before and after treatment. When compared to baseline, the average (STAI)-state score at visit 2 decreased by more than 6 points, while the STAI-trait score decreased by more than 3 points. The average number of hours slept per night increased significantly at visit 2 compared to baseline, and a 42% decrease in the average number of night-time awakenings was also observed.

186. Adler UC, et al. **Homeopathic potencies of *Opium* in alcohol dependence: exploratory open-label study.** *Int J High Dilution Res*, 2012, 11, 38, 19-24. A Brazilian research team investigated the possibility of using homeopathically prepared *Opium* to treat people suffering from alcoholism. To do this, 12 people diagnosed with this complaint were given *Opium* 50M and assessed via the Short Alcohol Dependence Data questionnaire and voluntary alcohol consumption. The test intervention was associated with a significant reduction in the average daily alcohol consumption (-29.37 units of alcohol/day; 95% CI=10.63; 48.11) and in the severity of alcohol dependence, measured by the mean score of the Short Alcohol Dependence Data questionnaire (-10.17; 95% CI= 4.12; 16.22).

187. Oberai P, et al. **Homoeopathic management of attention deficit hyperactivity disorder: A randomised placebo-controlled pilot trial.** *Ind J Res Hom*, 2013, 7, 4, 158-167. This work was designed to compare the effects of individualised homeopathy with placebo, in 6-15 year old children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). 54 children were randomly assigned to receive either placebo or homeopathic treatment using LM potency medicines for 12 months, and monitored using Conner's Parent Rating Scale-Revised: Short, the Clinical Global Impression-Severity Scale (CGI-SS), Clinical Global Impression-Improvement Scale (CGI-IS) and academic performance. When compared to the assessment at baseline, after 12 months of treatment, the homeopathic intervention was associated with a statistically significant improvement in all areas.

188. Oberai P, et al. **Homoeopathic management in depressive episodes: A prospective, unicentric, non-comparative, open-label observational study.** *Ind J Res Hom*, 2013, 7, 3, 116-125. This Indian research looked at the effects of individualised homeopathic prescriptions for depression. 67 people suffering from clinically confirmed depression were treated for a period of 12 months, with assessment made at baseline, during and at the end of the treatment period using the Hamilton Depression Rating Scale, Beck Depression Inventory and the Clinical Global Impression scale for the

purpose of assessment. Data analysis was done as per the intention-to-treat (ITT) principle using SPSS statistics package version 20. All measures showed statistically significant improvements in depression from the baseline assessment to the end of treatment.

189. Saha S, et al. **Individualized homeopathy versus placebo in essential hypertension: A double-blind randomized controlled trial.** *Ind J Res Hom*, 2013, 7, 2, 62-71. The Indian government's Central Council for Research in Homeopathy coordinated this study on hypertension and whether or not homeopathic treatment could produce any improvement in it. To do this, the research team devised a double-blind, randomised, placebo-controlled, parallel-arm trial design enrolling 132 people with clinically confirmed hypertension. These people were assigned to receive either placebo or individually prescribed homeopathy for 6 months and assessed at baseline, 3 and 6 months. On analysis at 6 months it was shown that the mean systolic blood pressure reduction was 26.6 mm Hg (95% CI 21.5, 31.7) in the homeopathy group and this increased by 3.6 mm Hg (95% CI -8.7, 1.5) in the placebo group. It was also shown that the mean diastolic blood pressure in the homeopathy group reduced by 11.8 mm Hg (95% CI 9.2, 14.4) and increased by 1.6 mm Hg (95% CI -3.6, 0.4) in the placebo group.

190. Chakraborty PS, et al. **Effect of homeopathic LM potencies in acute attacks of haemorrhoidal disease: A multicentric randomized single-blind placebo-controlled trial.** *Ind J Res Hom*, 2013, 7, 2, 72-80. This Indian report records the results of individualised homeopathic intervention for people suffering from haemorrhoids. Six different clinics overseen by the Indian Central Council for Homeopathic Research enrolled 278 people suffering from the symptoms of haemorrhoids to receive either homeopathic therapy or placebo, for a period of 90 days. During this period they were monitored for bleeding, pain, heaviness, itching and quality of life. On analysis of the results it was shown that, compared to placebo, the use of homeopathy was associated in a statistically significant reduction in all of the parameters measured and a significant improvement in quality of life.

191. Chakraborty PS, et al. **Effect of individualized homeopathic treatment in influenza like illness: A multicenter, single blind, randomized, placebo controlled study.** *Ind J Res Hom*, 2013, 7, 1, 22-30. In more Indian research, a team coordinated by the Indian Central Council for Homeopathic Research looked into the possible benefits for influenza sufferers of individualised homeopathy. They looked at the rate of development to post-influenza complications and compared the effects of LM to centesimal (C) homeopathic potencies in the relief of influenza. Nine clinical centres were involved in the trial and 447 people clinically diagnosed with influenza were randomly assigned to receive placebo, or individualised homeopathic prescriptions in C or LM potencies for 10 days. In response, there was a significant difference in temperature from 2<sup>nd</sup> day onwards in the LM and C groups. The significant improvement was observed in headache and myalgia on the 1<sup>st</sup> day in both the treatment groups. Likewise, significant improvement was noted in malaise on 2<sup>nd</sup> day in both the groups; sore throat on 1<sup>st</sup> day in LM and 2<sup>nd</sup> day in C group; fatigue on 2<sup>nd</sup> day in LM and on 3<sup>rd</sup> day in C group; nasal complaints on 2<sup>nd</sup> day in LM and 1<sup>st</sup> day in C group; chill on 3<sup>rd</sup> day in LM group and 1<sup>st</sup> day in C group and in sweat on 1<sup>st</sup> day in both treatment groups. Cough improved significantly from 3<sup>rd</sup> day in both the groups. No statistical improvement was seen in the placebo group.

192. Roll S, 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. doi: 10.1371/journal.pone.0054973. Epub 2013 Jan 31. German scientists using a prospective multi-centre, comparative, observational, non-randomized, rater-blinded study design, looked at the effects of either individualised homeopathic or conventional therapy for 135 children diagnosed with mild to moderate atopic eczema. The main outcome was via the SCORAD (SCORing Atopic Dermatitis) rating system at 36 months and was performed by a blinded rater. A multilevel

ANCOVA was used, with physician as random effect and the following fixed effects: age, gender, baseline value, severity score, social class and parents' expectation. The concluding assessment showed no statistical differences between the clinical outcomes achieved for both groups. It was also shown that homeopathic treatment was more expensive than conventional therapy.

193. Govekar JP, et al. **Clinical evaluation of homeopathic medicines in sinusitis.** *Ind J Res Hom*, 2008, 2, 1, 26-37. This was an open, multi-centric, prospective, observational study coordinated by an Indian government research team and looked at the effect of individualised homeopathy on sinusitis. 394 people diagnosed with acute or chronic sinusitis were enrolled in the study. Homeopathic medicines in different potencies (Q, 6, 30, 200 & 1M) were administered according to their prescribing indications and the treatment period ranged from 1 month to 6 years depending upon the nature of the disease condition. Then results showed that 138 patients had a complete remission of symptoms after a follow up period of one year. Varying degrees of improvement were seen in the rest of the cohort. Marked improvement was seen in 80 patients, moderate improvement in 91 patients, and mild improvement was seen in a further 66 patients. 4 patients experienced an aggravation of their condition and 15 patients showed no improvement.

194. Garg KL. **A Study to clinically evaluate the Efficacy of Homeopathic preparations of Cinnamomum Q, Erigeron Q, Ficus Religiosa Q, Geranium Maculatum Q, Thlaspi Bursa Pastoris Q, Ledum pal 30, 200, Trillium Pendulum Q in Menorrhagia.** *Ind J Res Hom*, 2007, 1, 1, 9-12. This Indian government study looked at the potential effectiveness of a number of predefined homeopathically prepared substances in the management of menorrhagia. To do this, the researchers enrolled 174 women diagnosed by a gynaecologist with menorrhagia. They were given one of the predefined homeopathic medicines based on their presenting signs and symptoms and assessed over 30 days according to predefined criteria. An analysis of the results found that of the 174 women enrolled, 81 showed a marked improvement, 69 experienced a moderate improvement, 13 had a mild improvement and 11 were unresponsive to treatment.

195. Sunil S, et al. **An open clinical observational study on the usefulness of pre-defined homeopathic medicines in the management of chronic sinusitis.** *Ind J Res Hom*, 2009, 3, 1, 34-40. This study, conducted under the control of the Indian Central Council for Research in Homeopathy, sought to determine what improvements, if any, homeopathy could provide for people suffering from clinically diagnosed chronic sinusitis. To do this, one of 17 predefined homeopathic medicines in centesimal scale of potencies (30C, 200C and 1M), were prescribed on the basis of the presenting signs and symptoms. 51 people completed the treatment and follow-up period of 6 months and were assessed using the Chronic Sinusitis Symptom Score (CSSS). At the end of the 6 month period, it was shown that 88% of the subjects experienced improvement in varying degrees. Marked improvement was seen in 31(61%), moderate improvement in 10 (20%) and mild improvement in 4 (8%) of the subjects.

196. Reddy GRC. **Treating Benign Prostatic Hyperplasia in elderly Men with Homeopathy – a series of eleven cases.** *Ind J Res Hom*, 2009. 3, 4, 37-40. In this case series from the Indian government's Clinical Research Unit (Homeopathy) in Andhra Pradesh, individualised homeopathy was prescribed for 11 men suffering from clinically diagnosed benign prostatic hyperplasia. They were followed up for one year and assessed via the American Urological Association Symptom Index (AUASI) to quantify the severity of illness. Of the 11 men treated, 7 were relieved of their urinary symptoms with the homeopathic medicine Pulsatilla nigricans and 4 with Thuja. In all the cases, reduction in AUASI score was found. In 6 cases prostate volume was reduced; in 3 cases prostate size and volume increased, while in 2 cases prostate volume remained unchanged.

197. Bindra SK, et al. **Usefulness of homoeopathic therapy in Distress During Climacteric Years.** *Ind J Res Hom*, 2010, 4, 1. 21-28. In this open trial carried out by workers from the Indian government's Clinical Research Unit (Homeopathy) in Jharkhand, individualised homeopathy was prescribed for 35 women diagnosed with menopausal symptoms, for 12 months. An analysis of the results at this point indicated that averaged level of change in symptoms severity across all presenting menopause symptoms was a 68% reduction. Some symptoms, such as hot flushes and night sweats, were reduced in severity by an average of 90%.

198. Nayak C, et al. **A Prospective Multicenter Observational Study to evolve the usefulness of the nine predefined homoeopathic medicines in Furunculosis.** *Homoeopathic Links*; Spring 2010; 23: 60-3. This observational study was conducted through 9 different government clinical research institutes across India and was coordinated by the Indian Central Council for Research in Homoeopathy (CCRH). It was designed to determine which of 9 predefined homeopathically prepared materials could be useful for the treatment of furunculosis. 397 people who were clinically diagnosed with this disorder formed the study cohort and they were treated for 3 years using a Furunculosis Symptom Score developed by the CCRH. At the beginning of the study, the results indicated an average FSS of 5.61 and this fell to an average of 1.14 by the end of the study. 85% of the patient population responded to one of the following four trial medicines: Hepar sulphuris, Antimonium crudum, Sulphur or Calcarea carbonica.

199. Nayak C, et al. **A multicentric open clinical trial to evaluate the usefulness of 13 predefined homoeopathic medicines in the management of acute rhinitis in children.** *Ind J Res Hom*, 2010, 4, 2, 23-27. In research conducted across India and coordinated by the Indian Central Council for Research in Homoeopathy, a team of scientists and clinicians sought to determine what effects, if any, homeopathic treatment had on the clinical outcomes for children suffering from acute rhinitis. 638 children suffering from clinically diagnosed acute rhinitis were given one of twelve predefined homeopathic medicines in 6C homeopathic potency and their progress followed for 7 days. They were assessed using an acute rhinitis symptom score (ARSS) at baseline and at the end of the treatment period. Over this time there was a statistically significant improvement in all of the signs and symptoms observed. The most frequently prescribed medicines were Nux vomica, Merc sol and Belladonna.

200. Goda C, et al. **Role of homoeopathic treatment in scabies infection in adivasi children attending ashram shalas (resident schools).** *Ind J Res Hom*, 2010, 4, 2, 33-40. Using a prospective, randomized controlled, single blind study design, a group of Indian researchers investigated the capacity of homeopathic therapy to relieve a cohort of 300 Indian schoolchildren of scabies. The children were divided into three treatment groups i.e. constitutional group, acute / sector group and placebo group. Scabies infection was diagnosed by a dermatologist and graded according to the severity of infection and children were observed for 2 years. All treatment groups were subjected to standard hygienic measures during the course of the study. Results were analysed at the end of each year and by the end of the study period it was found that 90% of the children from the constitutional group improved at the end of the 1st year whereas 27% from the acute and 4% from the placebo group improved. At the end of the second year, the rate of improvement of the constitutional group rose to 98% whereas 48% from the acute and 12% from placebo group improved. The prevalence of scabies in the school dropped from 52% to 17% at a time when the prevalence of scabies in the residential schools in the area did not show any reduction.

201. Zanasi A, et al. **Homeopathic medicine for acute cough in upper respiratory tract infections and acute bronchitis: a randomized, double-blind, placebo-controlled trial.** *Pul Pharmacol Ther*, 2014, 27, 1, 102-8. Using a randomized, double blind, placebo controlled clinical trial design, the authors of this study tested the efficacy of a homeopathic syrup in treating cough arising from Upper

Respiratory Tract Infections (URTI). 80 people with an URTI-related cough were treated with either the homeopathic syrup or a placebo for a week, and recorded cough severity in a diary by means of a verbal category-descriptive score for two weeks. Sputum viscosity was assessed with a viscosimeter before and after 4 days of treatment and patients were asked to provide a subjective evaluation of viscosity. On analysis of the results it was shown that 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 group. Sputum was collected from 53 patients: in both groups, viscosity significantly decreased after 4 days of treatment and viscosity was significantly lower in the homeopathic group than in the placebo group.

202. Gupta G, et al. **Evidence based clinical study to assess the usefulness of homeopathic medicines in patients of Benign Prostatic Hyperplasia.** *Ind J Res Hom*, 2010, 4, 2, 49-56. In a collaborative observational study between the Indian Central Council for Research in Homoeopathy and the Lucknow Homoeopathic Research Foundation, 43 men diagnosed with benign prostatic hyperplasia were given one of 20 predefined homeopathic medicines and monitored for 12 months. Assessment was done before and after treatment via the International Prostate Symptom Score (IPSS), ultrasonography, uroflowmetry and Prostate Specific Antigen (PSA). After comparing pre and post treatment results, the difference in mean values of IPSS, Prostate weight, PSA and average flow rates were found to be statistically significant. Maximum Flow Rate and Post Void Residual Urine (PVRU) were improved but statistically not significant. The most frequently prescribed medicines were Lycopodium, Pulsatilla, Sulphur and Calcarea carb.

203. Chand KS, et al. **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. In the face of a global increase in the number of cases of human multiple drug resistant tuberculosis (MDRTB), this research was conducted to determine if individualised homeopathy, in addition to standard care, could improve the prognosis for people suffering from this disease. A randomized, double blind, placebo controlled study was conducted with 120 people diagnosed with MDRTB over 5 years. They were randomised to receive standard regimen + individualised homeopathic medicine (SR + H) or standard regimen + identical placebo (SR + P). The outcome measures were sputum conversion, changes in chest X-ray (CXR), haemoglobin, erythrocyte sedimentation rate (ESR), weight gain, and clinical improvement. An analysis of the results showed an improvement in most of the outcome measures associated with the use of homeopathy, in particular, weight gain, ESR and mean haemoglobin and CXR.. In addition, the cure rate was 11.4% more in SR + H group as compared to placebo group.

204. Rossi E, et al. **Homeopathic Therapy in Pediatric Atopic Diseases: Short- and Long-Term Results.** *Homeopathy*, 2016, 105, 3, 217-224. An Italian team studied the outcomes of atopic diseases (atopic dermatitis, atopic rhinitis and asthma) in 857 children treated with homeopathy at the Homeopathic Clinic of Lucca (Italy) and related long-term results after approximately an 8-year period. The results showed that 75.8% of atopic children had moderate or major improvement (67.1% with asthma as the primary disease; 84.2% rhinitis; 84.2% dermatitis). At re-evaluation after 5-10 years, complete remission of atopic symptoms was obtained in 70.1% of the children: 84.2% in dermatitis; 48.1% in allergic rhinitis; 71.4% in asthma. Children with two or three atopic diseases at the first visit were completely cured in 40% of cases.

205. Peckham EJ, et al. **Interim Results of a Randomised Controlled Trial of Homeopathic Treatment for Irritable Bowel Syndrome.** *Homeopathy*, 2014, 103, 3, 172-177. A UK research team randomly assigned 94 people diagnosed with irritable bowel syndrome (IBS) to receive one of three interventions- usual care, individualised homeopathic treatment provided by two professional

homeopaths plus usual medical care, and supportive listening plus usual medical care. The treatment persisted for 26 weeks and patients were assessed via a change in irritable bowel symptom severity. An interim assessment of the results 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 medical care arm), achieved a clinically relevant change in irritable bowel symptom severity score.

206. Miglani A, Manchanda RK. **Observational Study of Arctium Lappa in the Treatment of Acne Vulgaris.** *Homeopathy*, 2014, 103, 203-207. This uncontrolled observational study, conducted through India's Central Council for Research in Homeopathy, sought to scientifically validate the management of acne, with homeopathically prepared Arctium, which is a relatively common prescription for this problem. 32 people diagnosed with acne vulgaris who met the study's inclusion criteria were given 6C to 1M homeopathic potencies of Arctium over a period of 6 months. Assessment was done by observing the 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). The results displayed statistically significant improvement in all of the parameters measured.

207. Frass M, et al. **Influence of Adjunctive Classical Homeopathy on Global Health Status and Subjective Wellbeing in Cancer Patients - A Pragmatic Randomized Controlled Trial.** *Complement Ther Med*, 2015, 23, 3, 309-317. The Medical University of Vienna was the setting for this randomised, controlled work that looked at whether homeopathy has the capacity to influence global health status and subjective wellbeing, when used as an adjunct to conventional cancer therapy. 410 people diagnosed with cancer were treated either with standard anti-neoplastic or individualised homeopathic adjunctive therapy in addition to standard therapy. 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. The improvement of global health status between visits 1 and 3 was significantly stronger in the homeopathy group ( $p=0.005$ ) when compared with the control group. A significant group difference was also observed with respect to subjective wellbeing by ( $p<0.001$ ) in favour 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.

208. Macias-Cortes EC, et al, **Individualised 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 Mar 13;10(3):e0118440. Researchers working in a public hospital in Mexico City assessed the efficacy and safety of individualised homeopathic treatment versus placebo and fluoxetine versus placebo in peri- and postmenopausal women with moderate to severe depression. The research model used was a randomized, placebo-controlled, double-blind, double-dummy, superiority, three-arm trial with a 6 week follow-up. 133 peri- and postmenopausal hospital outpatients diagnosed with major depression according to DSM-IV (moderate to severe intensity) were included in the study. 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 analysed in the intention-to-treat population (ANOVA with Bonferroni post-hoc test). Fluoxetine acted as a positive control. After 6 weeks of treatment, it was shown that homeopathy and fluoxetine are effective and safe antidepressants for climacteric women. Homeopathy and fluoxetine were significantly different from placebo in response definition only. Homeopathy, but not fluoxetine, improved menopausal symptoms scored by Greene Climacteric Scale.

209. Saha S, et al, **Documentation Of Prescriptions And Clinical Outcomes In A Homeopathic Hospital Setting In West Bengal, India.** *J Evid Based Complement Altern Med*, 2015, 20, 3, 180-185. This work was designed to assess prescriptions and clinical outcomes in routine homeopathic practice. 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, haemorrhoids, cough, dysfunctional uterine bleeding, chronic suppurative otitis media, and conjunctivitis.

210. Brule D, et al. **An Open-Label Pilot Study Of Homeopathic Treatment Of Attention Deficit Hyperactivity Disorder In Children And Youth.** *Forsch Komplementmed*, 2014, 21, 5. 302-309. Researchers attempted to determine the effects of individualised homeopathic therapy for attention deficit hyperactivity disorder (ADHD). Participants (aged 6-16) were recruited through community advertisement and outreach. Participants completed 1 screening and 9 individualised homeopathic follow-up consultations. 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 and no serious adverse events related to the therapy were reported.

211. Malapane E, Solomon EM, Pellow J. **Efficacy Of A Homeopathic Complex On Acute Viral Tonsillitis.** *J Altern Complement Med*, 2014, 20, 11, 868-873. This study aimed to determine the efficacy of a homeopathic complex on the symptoms of acute viral tonsillitis in children in South Africa using a randomised, double-blind, placebo-controlled design. Thirty children aged 6 to 12 years and diagnosed with acute viral tonsillitis were recruited from a primary school in Gauteng, South Africa. Participants took two tablets containing a homeopathic combination four times daily for 6 days. The treatment group received lactose tablets medicated with the homeopathic combination (Atropa belladonna 4X, Calcarea phosphoricum 4X, Hepar sulphuris 4X, Kalium bichromat 4X, Kalium muriaticum 4X, Mercurius protoiodid 10X, and Mercurius biniodid 10X). The placebo consisted of unmedicated lactose tablets. Symptoms were assessed using the Wong-Baker FACES Pain Rating Scale measured pain intensity, and a Symptom Grading Scale. The results showed that 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.

212. Mourao LC, et al. **Additional Effects Of Homeopathy On Chronic Periodontitis: A 1-year Follow-Up Randomized Clinical Trial.** *Complement Ther Clin Pract*, 2014, 20, 3, 141-146. Periodontology experts from Brazil tested the hypothesis that homeopathy (H) enhances the effects of scaling and root planing (SRP) in patients with chronic periodontitis (CP). To do this, 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. After analysing the results it was found that both groups displayed significant improvements, however, using clinical attachment gain and reductions in HDL, LDL and total cholesterol, triglycerides, glucose and uric acid, from baseline to 1 year, as criteria for treatment success, H-G performed significantly better than C-G.

213. Naidoo P, Pellow J. **A Randomized Placebo-Controlled Pilot Study of Cat Saliva 9cH and Histaminum 9cH in Cat Allergic Adults.** *Homeopathy*, 2013, 102, 123-129. A team from the University of Johannesburg conducted a study designed to determine the effect of Cat saliva 9C and Histaminum 9C (combined) on cat allergic adults. 30 participants with a positive test result for a cat allergy skin prick test (SPT) were recruited to a double-blind, randomised, placebo controlled clinical trial. Participants took two tablets twice daily for 4 weeks of either a placebo, or a combination of the Cat saliva and Histaminum, and attended a follow-up consultation at the end of weeks 2 and 4. The measurement tool used was the SPT, conducted at the beginning and at the end of the study. The active medicine produced a statistically significant reduction in the wheal diameter of the cat allergen SPT at the end of week 4. The placebo group showed no statistically significant change.

214. Rossi E, et al. **Long-Term Results in Children with Atopic Dermatitis.** *Homeopathy*, 2012, 101, 13-20. Researchers from Tuscany in Italy studied the socio-demographic features and the results of homeopathic treatment for atopic diseases in children. This was an observational longitudinal study carried out on 213 children with atopic diseases out of 551 children consecutively examined from September 1998 to December 2008. The team used the Glasgow Homeopathic Hospital Outcome Score to evaluate the results that were classified on the basis of a Likert scale. Eighty-three (39%) children were affected by asthma, 51 (24%) by allergic rhinoconjunctivitis, 76 (36%) by atopic dermatitis (AD) and 3 (1%) by food intolerance. 104 children were available for follow-up and 65 (62.5%) of them reported a major improvement or resolution. The parents of paediatric patients suffering from AD, who had started homeopathic treatment at <4.9 years of age were invited to follow-up assessment 8 years later and 40 children (mean age 12.9) were examined; 28/40 (70%) had a complete disappearance of AD, 12/40 children (30.0%) were still affected by AD; 8/40 (20%) had asthma and 8/40 patients had, or developed, allergic rhinitis.

215. Bell IR, et al, **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. Iris Bell and a team of researchers from the University of Arizona investigated homeopathic medicine related sleep stage alterations in human subjects by testing the feasibility of using two different nonlinear dynamical systems (NDS) analytic approaches to assess remedy effects on human slow wave sleep EEG. To do this, 54 young adult male and female college students with a history of coffee-related insomnia participated in a 4-week study of the polysomnographic effects of homeopathic medicines on home-based all-night sleep recordings. Subjects took one bedtime dose of a homeopathic remedy (*Coffea cruda* 30C or *Nux vomica* 30C). The team computed multiscale entropy (MSE) and the correlation dimension (Mekler-D2) for stages 3 and 4 slow wave sleep EEG sampled in artefact-free 2-min segments during the first two rapid-eye-movement (REM) cycles for remedy and post-remedy nights, controlling for placebo and post-placebo night effects. MSE results indicated significant, remedy-specific directional effects, especially later in the night (REM cycle 2) Overall, the results showed that the homeopathic medicines *Coffea cruda* and *Nux vomica* in 30c potencies altered short-term nonlinear dynamic parameters of slow wave sleep EEG in healthy young adults.

216. Shafei HF, Abdel Dayem SM, Mohamed NH. **Individualised Homeopathy in a Group of Egyptian Asthmatic Children.** *Homeopathy*, 2012, 101, 224-230. Using a prospective observational longitudinal study design, workers from the, National Research Center in Cairo evaluated individualised homeopathy as an adjunctive treatment for bronchial asthma in children. The effects of homeopathic medicines were assessed in 30 children with asthma as an adjunct to conventional treatment. The main outcome measures were frequency of attacks, use of medication, night awakening and spirometry at baseline and at follow-up till 6 months. An analysis of the results showed clinically relevant and statistically significant changes in asthma severity, indicating relative improvements after 3 months and absolute improvements after 6 months of treatment by homeopathic medicines, providing evidence that homeopathic medicines, as prescribed by experienced homeopathic practitioners, improve severity of asthma in children. The most frequently indicated medicines were Hepar sulph, Ant tart, Calc carb and Nat mur.

217. Hati AK, et al. **Constitutional, Organopathic and Combined Homeopathic Treatment of Benign Prostatic Hypertrophy: a Clinical Trial.** *Homeopathy*, 2012, 101, 217-223. A team of Indian scientists compared homeopathic treatment strategies using constitutional medicines (CM) or organopathic medicines (OM) alone or in combination (BCOM) in patients suffering from benign prostatic hypertrophy (BPH). 220 men aged 30-90 years were recruited in Odisha, India. Patients presenting with symptoms of prostatism, with or without evidence of bladder outflow obstruction, were included in the study. Patients with serum prostate specific antigen (PSA) > 4 nmol/mL, malignancy, complete urine retention, stone formation and gross bilateral hydronephrosis were excluded. Patients were sequentially allocated to OM, CM or BCOM. The main outcome measure was the International Prostate Symptom Score (IPSS). 73, 70 and 77 patients respectively were sequentially allocated to OM, CM or BCOM. 180 patients (60 per group) completed treatment and were included in the final analysis. Overall 85% of patients showed improvement of subjective symptoms such as frequency, urgency, hesitancy, intermittent flow, unsatisfactory urination, feeble stream, diminution of residual urine volume but there was no reduction in prostate size. Treatment response was highest with BCOM (38.24%) compared to OM (31.62%) and CM (30.15%). Effect sizes were highest for the decrease in IPSS, residual urine volume and urinary flow rate.

218. Mehra P. **Usefulness of Homoeopathy in Essential Hypertension: An Exploratory Interventional Trial.** *Homeopathy*, 2014, 103, 1, 88. This work from New Delhi, which was an observational study done as part of a post-graduate thesis, examined the usefulness of homoeopathic medicines in the management of essential hypertension (EH). The study was conducted at the Dharam Kiran Govt. Homoeopathic Hospital, Hyderabad from 2004-06. 30 people diagnosed EH were enrolled from the outpatients department of the hospital. Individualised homeopathic medicines were prescribed and modifiable risk factors such as obesity excess salt intake, alcohol consumption etc. were recorded at baseline. The cases with Stage II hypertension as per Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure VII report (JNC VII) were followed up every 15 days and cases with Stage I hypertension were followed every one month for one year. Status was assessed considering changes in staging according to the JNC VII and general health. The main outcome measure was the change in blood pressure in Stage I and II hypertension. Data was analysed by using statistical software SPSS version 16 and Wilcoxon's signed rank test. 16 (53.33%) cases showed marked improvement, 8 (26.67%) cases improved moderately, 3 (10%) showed no improvement and 3 (10%) cases dropped out. Arsenicum album, Natrum muraticum, Nux vomica, Causticum and Lycopodium were found useful in the management of essential hypertension. The difference in values for both systolic and diastolic blood pressures before and after treatment were found to be statistically significant ( $p < 0.001$ ).

219. Van Wassenhoven M. **Clinical Verification in Homeopathy and Allergic Conditions.** *Homeopathy*, 2013, 102, 54-58. In this report, Michel Van Wassenhoven described the clinically verified prescribing symptoms of homeopathic medicines used in his clinic in the treatment of people presenting with atopic disorders. 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.

220. Nayak C, et al. **A Prospective Multi-centric Open Clinical Trial of Homeopathy in Diabetic Distal Symmetric Polyneuropathy.** *Homeopathy*, 2013, 102, 130-138. A prospective multi-centric clinical observational study was carried out to evaluate homeopathic treatment in the management of diabetic distal symmetric polyneuropathy. It was conducted from October 2005 to September 2009 by the Central Council for Research in Homeopathy (CCRH) (India) at its five Institutes/Units. Patients suffering from diabetes mellitus (DM) and presenting with symptoms of diabetic polyneuropathy (DPN) were screened, investigated and were enrolled in the study after fulfilling the inclusion and exclusion criteria. Patients were evaluated using the Diabetic Distal Symmetric Polyneuropathy Symptom Score (DDSPSS) developed by the Council. A total of 15 homeopathic medicines were identified after repertorising the nosological symptoms and signs of the disease. The appropriate constitutional medicine was selected and prescribed in 30C, 200C and 1M potency on an individualised basis. Patients were followed up regularly for 12 months. Out of 336 patients (167 males and 169 females) enrolled in the study, 247 patients (123 males and 124 females) were assessed. All patients who attended at least three follow-up appointments and baseline nerve conduction studies were included in the analysis. A statistically significant improvement in DDSPSS 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.

221. Wadhvani GG. **Homeopathic Drug Therapy Homeopathy in Chikungunya Fever and Post-Chikungunya Chronic Arthritis: An Observational Study.** *Homeopathy*, 2013, 102, 193-198. The objective of this Indian study was to observe the effect of homeopathic therapy in Chikungunya Fever (CF) and in Post-Chikungunya Chronic Arthritis (PCCA) in a primary health care setting using a prospective observational study design. It was conducted at the Delhi Government Homeopathic Dispensary, Aali Village, New Delhi, India, from the 1st of October 2010 to the 31st of March 2011. 126 patients (75 CF and 51 PCCA) were enrolled based on predefined inclusion criteria. A single homeopathic medicine was prescribed for each patient after case taking with the help of a homeopathic materia medica and/or repertory. Results were evaluated on the basis of visual analogue scale and symptom scores. Complete recovery was seen in 84.5% CF cases in a mean time of 6.8 days. 90% cases of PCCA recovered completely in a mean time of 32.5 days.

222. Mathie R, et al. **Homeopathic Treatment of Patients with Influenza-like Illness during the 2009 A/H1N1 Influenza Pandemic in India.** *Homeopathy*, 2013, 102, 187-192. This prospective, multi-centre, data collection survey was carried out to examine the practice of homeopathic practitioners in India in the management of influenza-like illness in India during the 2009 pandemic of A/H1N1 influenza ('swine flu', SF) with respect to: (a) patients' symptoms at presentation and at follow-up (FU) consultation; (b) homeopathic medicines prescribed. Data collection took place from October 2009 to February 2010, at the peak of the pandemic. All patients satisfying the minimum diagnostic symptoms of SF were eligible for inclusion. Data per appointment (in person or by telephone) were recorded by practitioners in spreadsheet format. All records were included: regardless of whether

patient was immunised against A/H1N1; influenza symptoms at consultation; the homeopathic medicine/s prescribed; or whether antiviral medicine were prescribed. Twenty-three homeopathic physicians contributed to data collection. At the first appointment, 1126 patients had valid SF symptoms. A total of 89 different combinations of SF symptoms was observed, the most common being temperature >38\_C + cough + runny nose (n = 170; 15.1%). A total of 44 different homeopathic medicines (or combinations of medicines) were used at these first appointments, the most frequently prescribed being Arsenicum album (n = 265; 23.5%). For a total of 99 FU appointments with valid SF symptoms, Arsenicum album was prescribed most frequently overall (n = 28; 28.0%).

223. Nobel S, et al. **The Efficacy and Safety of a Homeopathic Arnica Gel (Arnicare) in the Treatment of Sports Injury.** *Homeopathy*, 2014, 103, 1, 92. A joint US and French research team sought to evaluate the efficacy and safety of a homeopathic Arnica gel (Arnicare) in the treatment of sports related muscular soreness and pain via the use of a randomized, double blind, placebo controlled clinical trial. 120 moderately trained athletes who experienced pain and stiffness after competitive sports games were randomly assigned to receive either a homeopathic gel containing 7% Arnica montana 1X, or a matching placebo, applied to the lower extremities 3 times daily shortly before and after sports games until the resolution of symptoms. Pain and stiffness at different time points were assessed on a 100mm visual analogue scale after three sports games. The overall (baseline adjusted) level of stiffness during the 72 hours following the sports game was significantly less in the Arnicare group as compared to the placebo group (23.7mm versus 29.1mm, P=0.02). With regard to the overall level of pain there was a similar trend that did not reach statistical significance (24.9mm versus 27.9mm, P=0.17). Between-group differences were most pronounced 12-36 hours post-exercise. 2 subjects in the arnica group experienced mild side effects (slight tingling, itching) that did not lead to discontinuation of the treatment.

224. Jurcau R, Jurcau I, Vithoukias G.. **The Influence of Aconitum Napellus Versus Placebo, on Anxiety and Salivary Cortisol, in Stress Induced by Intense and Short Term Physical Effort.** *Homeopathy*, 2014, 103, 1, 72. Renowned homeopath George Vithoukias and Romanian researchers collaborated in this study to determine the effects of homeopathically prepared Aconite on anxiety and salivary cortisol, in peri-stress changes induced by intense and short term physical effort, on sedentary subjects. 30 people exhibiting the homeopathic prescribing symptoms for Aconite experienced stress as a result of intense and short term physical effort, via the use of a Monark Ergomedic 839E cycle ergometer. Subjects were assigned to one of three groups. The first, the control group (C), who was not given anything; the second received placebo (P), and the third received Aconite. These interventions were applied before the use of the cycle ergometer. Anxiety and cortisol assessments were carried out on the day following the use of the cycle ergometer. Statistical evaluations were made on the basis of Student test. Although the values for anxiety and salivary cortisol were slightly higher for the C group compared with the P group, the differences between them were not significant. One of the more notable findings from the research was that for the group given Aconite, anxiety and salivary cortisol were significantly reduced immediately pre- and post effort.

225. Peckham EJ, et al. **Interim Results of a Randomised Controlled Trial of Homeopathic Treatment for Irritable Bowel Syndrome.** *Homeopathy*, 2014, 103, 172-177. This English work describes the effects of homeopathic treatment in irritable bowel syndrome (IBS). A three-armed trial was conducted which compared: usual care, homeopathic treatment plus usual care, and supportive listening plus usual care for IBS. The primary outcome was change in irritable bowel symptom severity score between baseline and 26 weeks, calculated using ANCOVA. An interim ANCOVA adjusted for baseline IBS severity, age and employment status, found no statistically significant differences 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 (93 people completed the study).

226. Danno K, et al. **China rubra for Side-Effects of Quinine: A Prospective, Randomised Study in Pregnant Women with Malaria in Cotonou, Benin.** *Homeopathy*, 2014, 103, 165-171. A French team evaluated the impact of the homeopathic medicine, China rubra 7C, on the side-effects of quinine used as a treatment for acute malaria in pregnant women in Cotonou, Benin. Using a prospective, comparative, randomised study design, 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 7C 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). The aim was to compare the frequency of side-effects of quinine in the two groups until day 6 after the start of treatment. Neither the patients nor the care givers were blinded to the study treatment. A 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 7C (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.

227. Chauhan VK, et al. **Efficacy of Homeopathic Intervention in Subclinical Hypothyroidism With or Without Autoimmune Thyroiditis in Children: An Exploratory Randomized Control Study.** *Homeopathy*, 2014, 103, 224-231. This Indian study was an exploratory, randomised, placebo controlled, single blind trial. Out of 5059 Indian school children (6-18 years) screened for thyroid disorders, 537 children had subclinical hypothyroidism/autoimmune thyroiditis (SCH/AIT) and 194 consented to participate in the study. 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 randomised to two subgroups- verum and control. Individualised homeopathy or identical placebo was given to the respective subgroups. 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 the verum group and 27.02% of the controls ( $p < 0.05$ ). Eight children (10.5%) progressed to overt hypothyroidism (OH) from the control group. In conclusion, statistically significant declines in serum TSH values and antiTPOab titres indicates that the homeopathic intervention has not only the potential to treat SCH with or without antiTPOab but may also prevent the progression to OH.

228. Frei H. **Homeopathic Treatment of Multimorbid Patients: A Prospective Outcome Study with Polarity Analysis.** *Homeopathy*, 2015, 104, 57-65. This study reports on the work of Swiss researcher, Heiner Frei, who used polarity analysis (PA) in the homeopathic treatment of patients with multimorbidity. PA came to prominence through a Swiss homeopathic ADHD double-blind study, which successfully demonstrated a significant difference between homeopathic medicines 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, PA was tested with multimorbid patients. Since such patients almost invariably have a multiple symptoms, the question was whether PA is appropriate or whether the method is rendered ineffective by the multitude of symptoms. PA was used with 50 multimorbid patients and they were followed over one year. 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 the projected equivalent conventional treatment.

229. Saha S, et al. **Obstetrics and Gynecology Outpatient Scenario of an Indian Homeopathic Hospital: A Prospective, Research-Targeted Study.** *Journal of Traditional and Complementary Medicine*, 2015, 3, 1-4. The authors of this study 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 gynaecology (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), 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 leucorrhoea (20.5%), irregular menses (13.3%), dysmenorrhoea (10%), menorrhagia (7.5%), and hypomenorrhoea (6.3%). Strongly positive outcomes were mostly recorded in oligomenorrhoea (41.7%), leucorrhoea (34.1%), polycystic ovary (33.3%), dysmenorrhoea (28%), and irregular menses (22.2%). Individualised 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% of instances, respectively. Several instances of medicine-condition pairings were detected.

230. Taylor JA, Jacobs J. **Homeopathic Ear Drops As An Adjunct To Standard Therapy In Children With Acute Otitis Media.** *Homeopathy*, 2011, 100, 109-115. 94 children diagnosed with acute otitis media were randomly assigned to receive either standard medical care or homeopathic ear drops. The treatment was given for 5 days and the symptoms were monitored by the children's parents using a rating scale for 5 symptoms of the disease. The results showed a statistically significant superiority of response to the homeopathic ear drops compared to standard medical treatment and the rate of symptom improvement occurred more rapidly in those children who were given homeopathics.

231. Leone L, et al. **Measuring the Effectiveness of Homeopathic Care Through Objective and Shared Indicators.** *Homeopathy*, 2011, 100, 212-219. This Italian study looked at the effects of homeopathic treatment as measured by the level of patient's pharmaceutical drug use as well as standard medical hospitalisation indicators. The study was carried out using data from two homeopathic centres in the Local Health Authority in Pisa and compared users of homeopathic medicine with the general population in the same area. It was shown from this that the patients using homeopathic medicines were able to reduce their intake of pharmaceutical drugs significantly and frequently showed improvements in hospitalisation indicators when compared with the general population.

232. Ghosh S, et al. **Dental Practice Scenario in a Government Homeopathic Hospital in West Bengal, India.** *Journal of Evidence-Based Complementary & Alternative Medicine*, 2014, 19, 3, 200-4. This was a systematic review of data on dental homeopathy from 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. A total of 87.3% conditions were chronic, and chronic periodontitis was most frequent (27.5%). Positive outcomes were 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% of encounters, and mostly in tincture form (29.9%). *Arnica montana* constituted of 17.8% prescriptions.

233. Gupta G, et al. **Evidence Based Clinical Study to Assess the Usefulness of Homoeopathic Medicines in Patients of Benign Prostatic Hyperplasia.** *Ind J Res Hom*, 2010, 4, 4, 49-56. Indian researchers from the Central Council for Research in Homoeopathy and the Homoeopathic Research Foundation, Lucknow, collaborated in this observational study which looked at the effects of predetermined homeopathic medicines for the treatment of Benign Prostatic Hypertrophy (BPH). 43 men previously diagnosed with BPH took part in the study. Individualised homeopathic medicines were prescribed and the International Prostate Symptom Score (IPSS), ultrasonography, uroflowmetry and Prostate Specific Antigen (PSA) were assessed before and after homoeopathic treatment. After comparing pre and post treatment results, the difference in mean values of IPSS, prostate weight, PSA and average flow rates were found to be statistically significant. Maximum flow rate and Post Void Residual Urine (PVRU) were improved but statistically not significant. *Lycopodium* (n=15), *Pulsatilla* (n=11), *Sulphur* (n=8) and *Calcarea carb.* (n=3) were found to be most useful among 10 medicines prescribed. Overall, 93.0% of patients improved clinically with an evidence of positive changes in diagnostic parameters.

234. Patel M, et al. **An Approach to Acute Diarrhoeal Disorders Through Sector and Constitutional Homoeopathic Treatment in Tribal Children Attending Balwadi.** *Ind J Res Hom*, 2010, 4, 4, 36-46. This Indian study was undertaken to verify the efficacy of acute homeopathic treatment in the management of diarrhoea and exploring the role of individualised homeopathic medicine in preventing its recurrence. 300 children were selected from 10 Anganwadi (Balwadi day care centre) from the tribal population having a known high prevalence of diarrhoea. A randomised case control, single, blinded method was used to prove the efficacy of the treatment. For this purpose, the sample was divided into three groups: acute remedy group, acute remedy followed by constitutionally prescribed homeopathy, and a placebo group as a control. Basic hygienic measures were explained to the parents and they were followed up regularly. The results of the study showed that, compared the controls, the acute homeopathic medicines had a definite role in altering the course of acute diarrhoea and when the acute medicine was followed up by the constitutional medicine it had a significant impact in bringing down the frequency, shortening the duration, and decreasing the intensity of further episodes of diarrhoea. This strategy also showed a definite positive response in the general well being of the child in terms of weight gain and general activity.

235. Muraleedharan KC, et al. **Effectiveness of Homoeopathic Medicines in HIV patients - A Clinical Trial.** *Ind J Res Hom*, 2010, 4, 4, 29-35. This Indian study was an open-label observational prospective multi-centre design of 18 months duration. Subjects were selected from a group of people with confirmed HIV infection, who reported for homoeopathic treatment at the Outpatient Department of the Regional Research Institute of Homoeopathy, Mumbai and the Clinical Research Unit of Homoeopathy at Chennai. The study used individualised homoeopathic medicines selected through repertorisation. The aim of study was to observe the changes in CD4 and viral load volumes after the

use of individualised homeopathic medicines. 72 patients, who completed the follow up period were assessed. An analysis of the results found that there was significant change in viral load volume as compared to the baseline data (95% CI, 0.16, 1.24,  $p=0.012$ ), but no significant changes was observed in CD4 cells (95% CI, -9.31, 57.84,  $p=0.154$ ). Body Mass Index (BMI) (95%, -1.12, -.57,  $p<0.001$ ) showed significant improvement. After the homeopathic intervention, WHO-QOL (Quality of Life) parameters showed statistical significant changes at  $p<0.05$  in physical health, psychological and environmental domains but in social domain no significant change was noted.

236. Gupta N, et al. **Homeopathic Medicinal Treatment of Autism.** *Ind J Res Hom*, 2010, 4, 4, 19-28. An Indian research team set out to investigate the effects of individualised homeopathic treatment in autism spectrum disorders (ASD). 25 children who had been diagnosed with ASD were enrolled in the study. They received individualised homeopathic treatment and their progress was followed for 18 months. Significant positive & curative response with homeopathic medicines in subjects with ASD was found, suggesting that homeopathic medicines can provide relief from abnormal behavioural problems in children presenting with ASD.

237. Siddiqui VA, et al. **To Explore the Utility of Homeopathic Medicine Lycopodium Clavatum in Urinary Calculi.** *Ind J Res Hom*, 2010, 4, 3, 34-38. Workers from India's Central Council for Research in Homeopathy conducted a multicentric, observational study on urolithiasis from 2005-2010. 90 men diagnosed with urolithiasis were enrolled in the study. The baseline symptoms score of urolithiasis was assessed before and after the treatment by using paired 't' test in SPSS (Ver.16). A non parametric test of 'Wilcoxon rank sum was used to analyse the changes in urinary symptoms before and after the treatment. Forty one (45.6%) patients showed marked improvement , 6 (6.7%) patients showed moderate improvement , 31 (34.4%) patients showed mild improvement, in 11(12.2%) patients there was no significant improvement and 1(1.1%) patient did not improve. Results of this study showed the utility of Lycopodium clavatum in the dissolution of urinary calculi.

238. Nayak C, et al. **A Prospective Multicentric Observational Study to Evolve the Usefulness of the Predefined Homeopathic Medicines in the Management of Acute Diarrheal Disease in Children.** *Ind J Res Hom*, 2009, 3, 3, 21-28. This Indian report records the details of an observational study on acute diarrhoeal diseases in children that was undertaken with 14 predefined trial homeopathic medicines to arrive at a group of medicines that may be useful for the treatment of acute childhood diarrhoea. To do this, a prospective, multi-centre observational study was conducted by the Central Council for Research in Homeopathy at its various Institutes and Units throughout India during Oct. 2005 to Sept. 2008. 327 children aged 6 months to 12 years were enrolled and the medicines were selected on the principles of homeopathy. Diarrhoea index scores were assessed before and after treatment using SPSS (ver. 16). The results showed that the diarrhoea index score either deteriorated or remained unchanged from the baseline score in 1.8% of the children treated, and improvement was seen in the remainder. The most commonly prescribed of the 14 homeopathic medicines used were Podophyllum peltatum (n=158), Chamomilla (n=49), Aethusa cynapium (n=25), Mercurius solubilis (n=23), Calcarea carbonica (n=21), Sulphur (n=18), and Phosphorus (n=17).

239. Grover A, Bhushan B, Goel R. **Double Blind Placebo Controlled Trial of Homeopathic Medicines in the Management of Withdrawal Symptoms in Opium Addicts and its Alkaloid Derivatives-Dependents.** *Ind J Res Hom*, 2009, 3, 1, 41-44. This research, performed at the Navjyoti Drug Demand Reduction Training Institute in New Delhi, sought to ascertain the efficacy of 6 predefined homeopathic medicines versus placebo in the management of the withdrawal symptoms in opium addicts & its alkaloid derivatives dependents. A double-blind, randomised placebo-controlled study design was used. 169 people addicted primarily to opium, its alkaloid derivatives, either natural or synthetic (Morphine, Codeine, Heroin, Pethidine and other narcotics) were enrolled for the study

which ran from September 2002 to August 2005. Only male patients within 15 – 50 yrs of age attending the training institute were included in the study. Assessment of progress made in each individual symptom was recorded for both the groups. The clinical progress of each subject was recorded from the 3rd day onward after starting the treatment. An analysis of the results showed a statistically significant superiority of the homeopathic treatment over placebo. The most commonly used medicines were Arsenicum, Nux vomica, Rhus tox and Pulsatilla.

240. Ramteke SS, et al. **An Open Clinical Observational Study on the Usefulness of Pre-defined Homoeopathic Medicines in the Management of Chronic Sinusitis.** *Ind J Res Hom*, 2009, 3, 1, 34-40. Indian researchers looked at the potential of 17 pre-defined homoeopathic medicines for the management of chronic sinusitis. An open clinical observational study was conducted at the Regional Research Institute (Homoeopathy), at Shimla (Himachal Pradesh) under the control of the Central Council for Research in Homoeopathy from October 2005 to March 2009. 51 people diagnosed with chronic sinusitis were treated with 17 predetermined homeopathic medicines in 30C, 200C or 1M potencies, were followed up for 6 months and were assessed using a chronic sinusitis symptom score (CSSS). Outcome assessments showed 88% improvement in varying degrees; marked improvement in 31(61%) patients, moderate improvement in 10 (20%) patients and mild improvement in 4 (8%) patients. Silicea, Kali bichromicum and Calcarea carbonica were the most commonly prescribed medicines.

241. Sharma SR, et al. **Clinical Evaluation of Homoeopathic Medicines in Sinusitis.** *Ind J Res Hom*, 2008, 2, 1, 26-37. Indian workers from the Regional Research Institute (Homoeopathy) in Shimla and Chennai carried out this multi-centre observational study to determine which homeopathic medicines were the most effective in the management of sinusitis. The study was performed from 1985 -2003. A total of 950 people diagnosed with either acute or chronic sinusitis were enrolled in the study. Homeopathic medicines were administered according to their prescribing indications and the treatment persisted for 1 month to 6 years depending upon the nature of the disease. Besides homoeopathic intervention, patients were advised to follow general measures like steam inhalation and to avoid cold exposure. 394 patients were followed up, out of which 138 were cured with no relapse after a follow up period of one year, Varying degrees of improvement were seen- there was marked improvement in 80 patients, moderate improvement in 91 patients, and mild improvement in 66 patients. 4 patients showed an aggravation of their condition, 15 patients did not improve. Belladonna, Kali bichromicum, Nux vomica, Rhus toxicodendron, and Silicea were found to be useful medicines in comparison to other medicines.

242. Govekar JP, et al. **Clinical Evaluation of Homoeopathic Therapy in the Management of Hyperlipoproteinemia.** *Ind J Res Hom*, 2008, 2, 4, 34-41. This prospective observational study was aimed at evolving a group of useful homoeopathic medicines in the treatment of hyperlipoproteinaemia, and their most useful potencies. 322 people with hyperlipoproteinaemia and various clinical presentations were studied. They were more than 30 years of age, with cholesterol > 200mg/dl, triglycerides > 170mg/dl, LDL > 150mg/dl, VLDL > 50mg/dl and HDL < 35 mg/dl. Homeopathic medicines were prescribed based on the presenting complaints, as well as mental and physical attributes. The patients were advised to use a low calorie diet and regular exercise. 293 people completed the study and varying degrees of improvement were observed. There was marked improvement in 77 patients, moderate improvement in 113 patients, mild improvement in 100 patients and no improvement in 3 patients. Abroma augusta 30, Gelsemium 30, Lycopodium 1M, Bryonia alba 30, Pulsatilla 30, Nux vomica 30 were found to be the most useful among the prescribed medicines.

243. Baig H, et al. **Role of Cephalandra Indica Q in the Management of Diabetes Mellitus as an Add-on Medicine Along with Conventional Antidiabetics.** *Ind J Res Hom*, 2008, 2, 3, 22-27. The

aim of this open, observational. Indian research was to ascertain the role of homeopathically prepared *Cephalandra indica* Q, in the management of people diagnosed with diabetes mellitus (type I or type II) and using prescribed anti-diabetic treatment. 96 people with post-prandial blood sugar level (PPBS) more than 160 mg/dL, even after taking anti-diabetic medicine, were enrolled in the study. All the patients were given *Cephalandra indica* Q at 1 drop/kg body weight, divided into 3 parts and used three times daily until the disappearance of all signs and symptoms occurred, along with control of blood sugar levels. Fasting (FBS) and post-prandial blood and urine sugar levels were measured on every follow-up visit. All patients were advised to take low calorie and high fibre diet, do regular physical exercise and to avoid physical and mental stress. 88 patients completed the study. Mean FBS level of patients before treatment was  $138.90 \pm 24.388$ , and the mean FBS after treatment was  $115.86 \pm 26.363$ . Mean PPBS level before treatment was  $265.08 \pm 44.675$  and the mean PPBS after treatment was  $204.75 \pm 39.968$ .

244. Fibert P, et al. **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, 194-201. This UK research compared the clinical effects of individualised homeopathic treatment for 1 year in 20 children diagnosed with ADHD, with standard treatment for 10 children diagnosed with the same condition for 4 months. Parents completed Conners' Parent Rating Scale, Revised Long Version (CPRS-R:L) and Measure Your Own Medical Outcome Profile (MYMOP) every consultation at baseline and every 4 months, from which DSMIV total scores were extracted;. The use of homeopathy was associated with statistically significant improvements in criminality and anger and improvements in children with a concomitant diagnosis of Autism Spectrum Disorder in treated children over the year:

245. Jong M, et al. **A Randomized Open Comparative Clinical Trial on the Effectiveness, Safety and Tolerability of a Homeopathic Medicinal Product for Frequent Acute Upper Respiratory Tract Infections in Children.** *Homeopathy*, 2016, 105, 16. This European study looked at the clinical effect of a complex of homeopathically potentised material (Immunokind) in children with upper respiratory tract infection (URTI). The trial design used two parallel treatment groups at four outpatient paediatric clinics in Russia. 201 children with a susceptibility to URTI (three or more occasions during the last six months) were randomly assigned to receive the complex or an identical placebo for 3 weeks and were then followed up at 6 months post-treatment, The primary effectiveness endpoint was a change in the frequency of the URTI after 3 and 6 months of follow-up compared to baseline frequency of URTI (last 12 months prior to study). Secondary endpoints were changes in total complaints, symptom scores, antibiotic use, treatment satisfaction, tolerability and safety. An analysis of the results showed that Immunokind tablets appeared to be effective in preventing recurrent URTI's.

246. Phing TC. **A Retrospective Cohort Study on the Efficacy of Homeopathy Compared to Homeopathy Plus Conventional Medicine in the Treatment of Hypertension.** *Homeopathy*, 2016, 105, 11. This Malaysian research aimed to evaluate the effects of homeopathic treatment compared to integrated treatment using homeopathy plus conventional pharmacotherapy for hypertension. Data was collected at the National Academy of Homoeopathy in, Maharashtra India from the Shaad Homoeopathic Hospital Complex & Research Centre. Data from 41 people diagnosed with hypertension was used in the study. 22 had been treated with homeopathy and 19 with integrated therapy. Statistical results calculated using repeated ANOVA suggested that homeopathy on its own is as efficacious as homeopathy plus conventional pharmacotherapy in the treatment of hypertension.

247. Brule D, et al. **Feasibility and Clinical Results of a Pilot Trial of Individualized Homeopathic Treatment of Fatigue in Children Receiving Chemotherapy.** *Homeopathy*, 2016, 105, 9. A Canadian team from the Hospital for Sick Children set about examining the effects of individualised

homeopathic treatment for fatigue in people aged 2-18 years receiving chemotherapy. 8 people diagnosed with various forms of cancer and who were receiving chemotherapy were treated with homeopathy and completed 14 days of assessment. symptom scores, and proxy-report fatigue scores in general fatigue and sleep/rest fatigue. The results showed a significant improvement of fatigue over the study period. Even though prescriptions were individualised, Cadmium sulfuricum was the chosen remedy at the start of each case.

248. Pandey V. **Hay Fever and Homeopathy: A Case Series Evaluation.** *Homeopathy*, 2016, 105, 202-208. This uncontrolled UK research assessed the clinical effectiveness of individualised homeopathic treatment in the alleviation of hay fever symptoms in a typical clinical setting. 8 people diagnosed with hay fever completed a Measure Yourself Medical Outcome Profile (MYMOP) self-evaluation questionnaires at baseline and again after two weeks and four weeks of homeopathic treatment. The average MYMOP scores for the eyes, nose, and general wellbeing had improved significantly after two and four weeks of homeopathic treatment. The overall average MYMOP profile score at baseline was 3.83. After 14 and 28 days of treatment the average score had fallen to 1.14 and 1.06 respectively.

249. Taylor JA, Jacobs J. **Homeopathic Treatment of Respiratory Illnesses in Children: Results From Two Randomized Trials.** *Homeopathy*, 2016, 105, 15. University of Washington researchers carried out investigations to determine what effects, if any, homeopathic preparations provided in the treatment of Acute Otitis Media (AOM) or Upper Respiratory Tract Infection (URTI) in children. In the first study, children aged 6 months to 11 years, diagnosed with AOM and managed with a delayed antibiotic approach, were randomised to standard therapy alone or standard therapy plus a homeopathic ear drop preparation. The primary outcome was whether or not an antibiotic prescription given at the index visit was filled; and any subsequent antibiotic use was a secondary outcome. During the 12-15 day follow-up period, significantly fewer parents of children randomised to the homeopathic ear drops group filled the antibiotic prescription compared to those of children receiving standard therapy alone (26.9% and 41.2%, respectively). In the second study, children ages 2-5 years old diagnosed with an URTI were randomised to receive a homeopathic combination product for cold and cough, or a placebo. Parents were instructed to give a dose of study medication as needed for the relief of URTI symptoms up to 6 times per day for three days. Parents recorded changes in symptoms 1 hour after each dose, as well as changes in overall severity of URTI symptoms in twice daily diaries. The homeopathic group reported a statistically significant improvement in 3 of the 4 URTI symptoms at 12 and 24 hours after enrolment as well in a composite cold score.

250. Ferreri R, et al. **The Clinical Experience in the Centre of Integrated Medicine, Pitigliano Hospital Using Magistral Homeopathic Formulations: Results in Outpatients Affected by Chronic Diseases and Considerations on the Chronic Care Model Integrated with Homeopathic Approach.** *Homeopathy*, 2016, 105, 14. An Italian team recorded the outcomes of the treatment of people suffering from chronic ailments using homeopathically prepared combination products. Data from 1600 people were collected and assessed using the Edmonton scale, SF12, family and work performance evaluations. Broadly, the results were as follows. For recurrent respiratory syndromes, an averaged 85% reduction in the use of conventional therapies (antibiotics, anti-asthmatics, and corticosteroids) was seen. In people suffering from rheumatic disorders, reductions in pain were noted as well as a reduction in the use of conventional medicines. For those presenting with tinnitus an averaged reduction in symptoms of 45% was observed. Allergy sufferers experienced a 75-100% reduction in conventional medicine use and those presenting with chronic pain conditions (headache, migraine etc) reported reductions in pain ranging from 45-84%.

251. van Heerden HJ, Razlog R, Pellow J. **Pilot Study on the Homeopathic Treatment of Binge Eating in Males.** *Alth Ther in Health and Med*, 2016, April, 22, Suppl 1:8-13. This work from the University of Johannesburg in South Africa sought to measure the efficacy of individualised homeopathic treatment for binge eating in adult males. A 3 week baseline period was used which was followed by a 6 week treatment period and assessment was carried using a self-assessment calendar (SAC), recording the frequency and intensity of bingeing, the Binge Eating Scale (BES), a psychometric evaluation of severity, and case analysis evaluating changes with time. 10 males who were diagnosed as binge eaters were prescribed individualised homeopathic treatment. The study found a statistically significant improvement with regard to the BES and the SAC, with a large effect size, indicating that a decrease occurred in the severity and frequency of bingeing behaviour during the study period.

252. van Haselen R, et al. **The Effectiveness and Safety of a Homeopathic Medicinal Product in Pediatric Upper Respiratory Tract Infections With Fever: A Randomized Controlled Trial.** *Global Pediatric Health*, 2016, 3, 1–11. The authors of this study investigated the clinical effectiveness of a homeopathic add-on therapy in a paediatric subpopulation with upper respiratory tract infections (URTI's). Patients received either on-demand symptomatic standard treatment (ST-group) or the same ST plus a homeopathic medication (Influcid; IFC-group) for 7 days. Outcome assessment was based on symptom and fever resolution and the Wisconsin Upper Respiratory Symptom Survey–21 (WURSS-21). A total of 261 children (<12 years) (130 IFC-group; 131 ST group) were recruited in Germany and the Ukraine. An analysis of the results of this research found that the IFC-group used less symptomatic medication, symptoms resolved significantly earlier, had higher proportions of fever-free children from day 3 onwards, and the WURSS-assessed global disease severity was significantly less during the entire URTI episode than the ST group.

253. Grimaldi-Bensouda L, et al. **Homeopathic Medical Practice for Anxiety and Depression in Primary Care: The EPI3 Cohort Study.** *BMC Complementary and Alternative Medicine*, 2016, 16, 125. This French study compared the use of conventional psychotropic drugs among people 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). Assessment was via the Hospital Anxiety and Depression Scale, HADS) as assessments were carried out at baseline, and at 1,3 and 12 months. 710 people who met the inclusion criteria participated in the study. The authors concluded that 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.

254. Beghi GM, Morselli-Labate AM. **Does Homeopathic Medicine Have a Preventive Effect on Respiratory Tract Infections? A Real Life Observational Study.** *Multidisciplinary Respiratory Medicine*, 2016, 11, 12. The goal of this controlled observational study was to investigate the role of a homeopathically prepared medicine (Anas barb) in preventing respiratory tract infections (RTIs). The authors analysed data from 459 people suffering from RTI's, 248 of whom were treated with Anas, and 211 were not treated. All 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 group and the untreated group. The reduction in the mean number of RTI episodes during the period of observation versus the year before inclusion in the study was significantly greater in the homeopathic-treated group than in untreated patients.

255. Uchiyama-Tanaka Y. **Case Study of Homeopathic Bowel Nosode Remedies for Dysbiotic Japanese Patients.** *J Altern Complement Med*, 2017 Aug 14. doi: 10.1089/acm.2017.0061. Bowel nosodes made from the intestinal bacteria of European patients from the 1900s were administered to

Japanese patients suffering from gastrointestinal disturbances, such as constipation and diarrhoea, to determine their therapeutic efficacy. Twenty-eight outpatients from Yoko Clinic (11 males, 17 females; age range, 4-72 years) were enrolled in this study. One nosode remedy was selected for each case. Patients took six pills for 2 days. After a month, the effect of each treatment was evaluated using the Glasgow Homeopathic Hospital Outcome Scale (grade +4 to -4). Patient numbers for each grade was +4 (N = 2), +3 (N = 4), +2 (N = 7), +1 (N = 3), 0 (N = 7), with no negative grades. Of the 23 patients treated, 69.6% showed some type of improvement, and no harmful effects from taking bowel nosodes were observed. 26% of patients showed major improvement or were "cured."

256. Tapas K, et al. **To evaluate the role of homeopathic medicines as add-on therapy in patients with rheumatoid arthritis on NSAIDs: A retrospective study.** *Ind J Res Hom*, 2014, 8, 24-30. This study was carried out to evaluate the clinical outcomes of patients with rheumatoid arthritis (RA) receiving homeopathic medicines with respect to QoL, Disease Activity Score (DAS), Erythrocyte Sedimentation Rate (ESR), morning stiffness/pain and frequency of analgesics after homeopathic intervention using a retrospective analysis design. Patients diagnosed as sero-positive for RA antigen receiving homeopathic medicines were assessed for DAS, QoL, frequency of analgesics, ESR and pain/morning stiffness. Ten people testing sero-positive for RA with at least four clinical signs were evaluated from a single homeopathic Out-Patient Department from February 2009 and February 2011. Cases were analysed to determine the effect of homeopathic constitutional treatment in people with RA. The use of the homeopathic medicines was associated with a reduction in 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 homeopathic medication ( $t = 4.044$ ,  $P < 0.01$ ) and no further deterioration 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 homeopathic constitutional simillimum.

257. Palm J, et al. **Effectiveness of an add-on treatment with the homeopathic medication SilAtr0-5-90 in recurrent tonsillitis: An international, pragmatic, randomized, controlled clinical trial.** *Complement Ther Clin Pract*, 2017, 28, 181-191. In this international, pragmatic, controlled clinical trial, the research team investigated the effectiveness and safety of the homeopathic product SilAtr0-5-90 in recurrent tonsillitis. 256 patients (6-60 years) with moderate recurrent tonsillitis were randomised to receive either SilAtr0-5-90 in addition to standard symptomatic treatment, or to receive standard treatment only. The primary outcome was the mean time period between consecutive acute throat infections (ATI) within 1 year (analysed via repeated events analysis). During the evaluation year, the risk of getting an ATI was significantly lower (hazard ratio: 0.45, proportional means model,  $p = 0.0002$ , ITT) with SilAtr0-5-90 compared to control. Tonsillitis-specific symptoms were significantly reduced ( $p < 0.0001$ , ITT) and the need of antibiotics to treat acute throat infections ( $p = 0.0008$ ; ITT) decreased. 3 non-serious adverse drug reactions were reported for SilAtr0-5-90.

258. Pannek J, et al. **Usefulness of classical homeopathy for the prevention of urinary tract infections in patients with neurogenic bladder dysfunction: A case series.** *Ind J Res Hom*, 2014, 8, 31-36. The aim in this study was to assess the effectiveness of constitutional homeopathy in the treatment of people diagnosed with urinary tract infection (UTI) due to spinal cord injury (SCI), as an add-on to standard urologic care. After the exclusion of morphological abnormalities and the 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 homeopathic care. Symptoms were fever, incontinence, increased spasticity, decreased bladder capacity or pain, and decreased general health combined with significant bacteriuria. Eight patients were followed up for a median period of 15 months at the end of which five patients remained free of UTI, whereas UTI frequency was reduced in three patients.

259. Shah, R. **Clinical trial for evaluation of a Human Immunodeficiency Virus nosode in the treatment for Human Immunodeficiency Virus-Infected individuals.** *Ind J Res Hom*, 2015, 9, 25-33. 27 people diagnosed with HIV infection were given the Human Immunodeficiency Virus (HIV) nosode in 30C and 50C homeopathic potencies. An analysis of the outcomes found that of the study participants, 7 (25.93%) showed a sustained reduction in the viral load from 12 to 24 weeks and 9 participants (33.33%) showed an increase in the CD4+ count by 20% 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. 52% (14 of 27) participants showed either stability or improvement in CD4% at the end of 24 weeks, of which 37% participants showed improvement (1.54-48.35%) in CD4+ count and 15% had stable CD4+ percentage count at week 24 week. 16 out of 27 participants had a decrease (1.8–46.43%) in CD8 count.

260. van Haselen R, et al. **The Effectiveness and Safety of a Homeopathic Medicinal Product in Pediatric Upper Respiratory Tract Infections With Fever: A Randomized Controlled Trial.** *Glob Pediatr Health*, 2016, doi: 10.1177/2333794X16654851. Researchers in this trial investigated the clinical effectiveness of homeopathic add-on therapy in a paediatric subpopulation with upper respiratory tract infections (URTI) in a randomised, controlled, multinational clinical trial. Patients received either on-demand symptomatic standard treatment (ST-group) or the same ST plus a homeopathic combination (Influcid; IFC-group) for 7 days. Outcome assessment was based on symptom and fever resolution and the Wisconsin Upper Respiratory Symptom Survey-21 (WURSS-21). A total of 261 (<12 years) patients (130 IFC-group; 131 ST-group) were recruited in Germany and the Ukraine. The IFC-group used less symptomatic medication, symptoms resolved significantly earlier ( $P = .0001$ ), had higher proportions of fever-free children from day 3 onwards, and the WURSS-assessed global disease severity was significantly less ( $P < .0001$ ) during the entire URTI episode than the ST group. IFC as add-on treatment in paediatric URTI reduced global disease severity, shortened symptom resolution, and was safe in use.

261. Miglani A, Manchanda RK. **Azadirachta indica in treatment of acne vulgaris—an open-label observational study.** *Ind J Res Hom*, 2014, 8, 218-223. This prospective, non-randomised, open-label interventional study was conducted to assess the effect of the homeopathic medicine *Azadirachta indica* prescribed in raising potencies from 6C up to 1M in the management of acne in 29 people diagnosed with the disease. The observational period was 6 months. Outcome measures were Lesion counts, Global Acne Grading System (GAGS) score and Acne-specific Quality of Life questionnaire (Acne-QoL) score. Data was analysed using paired t-test, Wilcoxon signed rank tests and Pearson's correlation tests. At the end of the study it was found that the use of the medicine was associated with a statistically significant improvement in Lesion counts, GAGS and Acne QoL score ( $P < 0.001$ ) but no effect was seen in inflammatory lesions.

262. Alizadeh Charabandabi SM, Biglu MH, Yousefi Rad K. **Effect of Homeopathy on Pain Intensity and Quality Of Life of Students With Primary Dysmenorrhea: A Randomized Controlled Trial.** *Iran Red Crescent Med J*, 2016, 18, 9, e30902. The objective here was to evaluate an association between homeopathy and pain relief and quality of life improvement in a double-blind placebo-controlled randomised trial with 2 parallel arms. 54 students with primary dysmenorrhea residing at the dormitories of the Tabriz University of Medical Sciences, Iran, who had moderate or severe menstrual pain, were randomised to receive either a homeopathic remedy or placebo. The homeopath and participants were blinded to treatment assignment. Primary outcomes were pain intensity and quality of life assessed using a 10-cm visual analogue scale and short-form 36 (SF-36), respectively, and the secondary outcome was number of analgesic pills used. Each group initially comprised 27 students; with 26 in the homeopathic group and 21 in the placebo group able to be followed up. Compared with

the baseline scores, statistically significant improvements were observed in pain intensity ( $P = 0.021$ ) and physical health ( $P = 0.020$ ) scores only in the homeopathic group; and in the mental health score in both groups ( $P = 0.014$  in the homeopathy group and  $P = 0.010$  in the placebo group).

263. Nayak D, et al. **Managing acute alcohol withdrawal with Homoeopathy: A prospective, observational, multicentre exploratory study.** *Ind J Res Hom*, 2014, 8, 224-230. This reports the results of a prospective, observational, exploratory, multicentre trial to assess the role of homeopathy in acute alcohol withdrawal (AAW). Individualised homeopathic treatment was provided to 112 patients reporting with AAW. The clinical assessment was done for 5 days using the Clinical Institute Withdrawal Assessment Scale of Alcohol-Revised (CIWA-Ar). At post-withdrawal phase, the quality of life of patients was assessed at the end of 1st, 3rd and 6th months using the World Health Organisation quality of life (WHOQOL)- BREF scale. The results showed a significant decrease in CIWA-Ar mean scores and increase in quality of life score ( $P < 0.001$ ). The medicines most commonly prescribed were Arsenicum album, Lycopodium clavatum, Belladonna, Nux vomica and Pulsatilla.

264. Kumar M, et al. **Use of homoeopathic remedies in the management of learning disabilities.** *Ind J Res Hom*, 2014, 8, 87-94. The objective of this study was to assess the therapeutic usefulness of homeopathy in the management of learning disabilities (LD), viz., dyslexia and dysgraphia. A 3-year randomised double blind case control study was carried out in three Marathi-medium schools in Mumbai on 67 children between ages 8-12 years fulfilling the criteria of LD (ICD-10) for dyslexia and dysgraphia with a minimal observation period of one year. The children, all of whom fulfilled 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 homeopathic medicine in the 200th potency in infrequent repetition while 35 children from Group II were given placebo. The children and the Remedial Educators who were the assessors were blinded for the study. The researchers found that the children under homeopathic 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).

265. Jacobs J, Taylor JA. **A randomized controlled trial of a homeopathic syrup in the treatment of cold symptoms in young children.** *Complement Ther Med*, 2016, 29, 229-234. This study was conducted to determine if a homeopathic syrup was effective in treating cold symptoms in preschool children. Children 2-5 years old diagnosed with an upper respiratory tract infection were randomised to receive a commercial homeopathic cold syrup or placebo. Parents administered the study medication as needed for 3 days. The primary outcome was a change in symptoms 1 hour after each dose. Parents also assessed the severity of each of the symptoms of runny nose, cough, congestion and sneezing at baseline and twice daily for 3 days, using a 4-point rating scale. A composite cold score was calculated by combining the values for each of the four symptoms. Among 261 eligible participants, data on 957 doses of study medication in 154 children were analysed. Analysis of twice daily data on the severity of cold symptoms compared to baseline values found that improvements in sneezing, cough and the composite cold score were significantly greater in the first day after beginning treatment among those receiving the cold syrup compared to placebo recipients.

266. Chakraborty D, et al. **A comparative study of homoeopathic medicine – Sulphur with the Multidrug therapy in the treatment of paucibacillary leprosy.** *Ind J Res Hom*, 2015, 9, 158-166. Workers in this study sought to compare the effect of a homeopathic medicine, Sulphur, with standard pharmaceutical therapy in the treatment of paucibacillary leprosy according to WHO guidelines. 60 people with confirmed Borderline Tuberculoid (BT) leprosy, aged 14 to 60 years, were enrolled in the

trial. All patients were 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. Assessment was carried out via a histopathological analysis of the affected skin. At the end of two years the results showed that standard pharmaceutical therapy and homeopathic medicine were found equally effective in relieving paucibacillary leprosy. The most significant clinical sign observed in all cases treated with Sulphur was the reappearance of normal skin colour and a recovery from the loss of sensation of the skin lesion.

267. Chakraborty PS, et al. **A multicentric observational study to evaluate the role of homeopathic therapy in vitiligo.** *Ind J Res Hom*, 2015, 9, 167-175. This was a multicentre open clinical study undertaken by India's Central Council for Research in Homoeopathy, focused on assessing the effects of homeopathic therapy in the management of vitiligo. 169 people diagnosed with vitiligo were given homeopathic medicines, based on the totality of symptoms. The analysis of the outcomes was based on the Vitiligo Symptom Score (VSS) and photographs of the patients. Result was analysed using the SPSS version 20. The results showed that the changes in the mean VSS at intervals of every 6 months were statistically significant. Homeopathic 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 showed marginal improvement (below 25% improvement). Ten homeopathic 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.

268. Akhil BG. **An observational study on usefulness of Bromium 30C in atopic respiratory complaints by assessing serum immunoglobulin E levels.** *Ind J Res Hom*, 2017, 11, 177-83. This Indian research evaluated variations in serum IgE levels before, during and after intervention with Bromium 30C. 30 people diagnosed with atopic respiratory complaints (diagnosed based on clinical history, CMDT guidelines and serum IgE values during the first visit) were selected as per the inclusion criteria using a purposive sampling technique. Bromium 30C was given twice daily for 2 weeks, placebos were administered in between, and the subjects followed for 3 months. Serum IgE values were checked every month. The data was statistically analysed using mean, standard deviation and analysis of variants (ANOVA). The results showed a significant reduction in serum IgE levels in cases of atopic respiratory complaints during and after homeopathic treatment with Bromium 30C.

269. To KLA, et al, **Individualized homeopathic treatment in addition to conventional treatment in type II diabetic patients in Hong Kong - a retrospective cohort study.** *Homeopathy*, 2017, 106, 2, 79-86. This retrospective cohort study aimed to investigate the effectiveness of individualised homeopathic treatment in glycaemic control at a private homeopathic centre in Hong Kong. 27 adults aged 37-84 years were treated with individualised homeopathic remedies between 2012 and 2015. Published data on 40 T2DM patients under standard conventional treatment in Hong Kong were used as a control. The main outcome measures were changes in fasting plasma glucose (FPG) and glycated haemoglobin (HbA1c) at 12-months or the last follow-up, whichever was earlier. Compared with the conventional treatment only group, the homeopathy group had higher baseline FPG (p = 0.044), and more patients had a long (>20 years) duration of diabetes (p = 0.006), and a history of cardiac events (p = 0.022). The mean difference in FPG in the homeopathy group was significantly greater than in the control after 12 months: -2.24 mmol/L (95% confidence interval [CI]: -3.47 to -1.01) vs 0.16 mmol/L (95% CI: -1.72 to 2.04), p = 0.001. The mean difference in glycated haemoglobin (HbA1c) was also significantly greater, -1.11% (95% CI: -2.17 to -0.05) vs 0.08% (95% CI: -1.37 to 1.53), p = 0.046. Poorer baseline glycaemic control was associated with better outcome (r = -0.750, p < 0.001), but not the duration of diabetes (r = 0.058, p = 0.772). The improvement was robust to sensitivity analyses.

270. Parveen S. **A retrospective study of homeopathic treatment in patients with heel pain with or without Calcaneal Spur.** *Ind J Res Hom*, 2017, 11, 64-73. The aim of this retrospective study was to evaluate the effects of homeopathic treatment for calcaneal spur (CS) over a period of 6 months. 92 people, (70 women and 22 men), had undergone lateral X-ray of the ankle for nontraumatic heel pain, of which 76 (82.6%) patients had CS. The extent of CS was found to be higher in females who were of an older age, overweight, and who did manual labour. Homeopathic treatment was associated with a positive response in nearly 75% of the CS patients. The medicines most commonly used were *Calcarea flouricum*, *Rhus toxicodendron*, *Ledum palustre*, and *Aranea diadema*.

271. Viksveen P, Relton C, Nicholl J. **Depressed patients treated by homeopaths: a randomised controlled trial using the "cohort multiple randomised controlled trial" (cmRCT) design.** *Trials*, 2017, 18, 1, 299. A pragmatic trial using the "cohort multiple randomised controlled trial" design was used to test the effectiveness of adjunctive treatment by homeopaths compared to usual care alone, over a period of 12 months in patients with self-reported depression. One third of patients were randomly selected for an offer of treatment provided by a homeopath. The primary outcome measure was the Patient Health Questionnaire (PHQ-9) at 6 months. Secondary outcomes included depression scores at 12 months; and the Generalised Anxiety Disorder (GAD-7) outcome at 6 and 12 months. The trial over-recruited by 17% with a total of 566 patients. 40% took up the offer and received treatment. An intention-to-treat analysis of the offer group at 6 months reported a 1.4-point lower mean depression score than the no offer group (95% CI 0.2, 2.5,  $p = 0.019$ ), with a small standardised treatment effect size ( $d = 0.30$ ). Using instrumental variables analysis, a moderate treatment effect size in favour of those treated was found ( $d = 0.57$ ) with a between group difference of 2.6 points (95% CI 0.5, 4.7,  $p = 0.018$ ). Results were maintained at 12 months. Secondary analyses showed similar results. Similar results were found for anxiety (GAD-7). No evidence suggested any important risk involved with the intervention.

272. Gupta G, Singh S. **Role of homeopathic medicines in prostate enlargement: A retrospective observational study.** *Ind J Res Hom*, 2016, 10, 266-71. Researchers from the Gaurang Clinic and Centre for Homeopathic Research in India's Uttar Pradesh carried out this work to assess the usefulness of constitutionally prescribed homeopathic medicines in people with prostate enlargement. Data from 61 males diagnosed with prostate enlargement were used in the study. Prostate weight and postvoid residual urine (PVRU) on ultrasonography were assessed before and after treatment. After comparing pre and post treatment results, the difference in mean values of prostate weight and PVRU were  $67.47 \pm 2.78 - 60.15 \pm 3.62$  ( $P < 0.001$ ) and  $91.61 \pm 11.91 - 65.94 \pm 9.01$  ( $P = 0.009$ ), respectively, which were found statistically significant. *Lycopodium* ( $n = 21$ ), *Pulsatilla* ( $n = 7$ ), and *Nux vomica* ( $n = 3$ ) were found to be the most useful medicines.

273. Karp JC, et al. **Treatment with *Ruta graveolens* 5CH and *Rhus toxicodendron* 9CH may reduce joint pain and stiffness linked to aromatase inhibitors in women with early breast cancer: results of a pilot observational study.** *Homeopathy*, 2016, 105, 4, 299-308. Aromatase inhibitors are a class of drugs used to treat some forms of cancer. The aim in this study was to determine the possible effect of two homeopathic medicines, *Ruta graveolens* 5CH and *Rhus toxicodendron* 9CH, in the prevention of aromatase inhibitor (AI) associated joint pain and/or stiffness in women with early, hormone-receptor positive, breast cancer. Women were recruited in two groups, according to which of the two study centres they attended: one receiving homeopathy in addition to standard treatment (group H) and a control group, receiving standard treatment (group C). All women were treated with an AI. In addition, women in group H also took *Ruta graveolens* 5CH and *Rhus toxicodendron* 9CH (5 granules, twice a day) up to 7 days before starting AI treatment. The homeopathic medicines were continued for 3 months. Clinical data were recorded using a self-

assessment questionnaire at inclusion (T0) and 3 months (T3). Primary evaluation criteria were the evolution of scores for joint pain and stiffness, the impact of pain on sleep and analgesic consumption in the two groups after 3 months of treatment. 40 patients (mean age  $64.9 \pm 8.1$  years) were recruited, 20 in each group. Two-thirds of the patients had joint pain before starting AI treatment. There was a significant difference in the evolution of mean composite pain score between T0 and T3 in the two groups ( $-1.3$  in group H vs.  $+3.4$  in group C;  $p=0.0001$ ). The individual components of the pain score (frequency, intensity and number of sites of pain) also decreased significantly in group H. 9 patients in group C (45%) vs. 1 (5%) in group H increased their analgesic consumption between T0 and T3 ( $p=0.0076$ ). After 3 months of treatment, joint pain had a worse impact on sleep in patients in group C (35% vs. 0% of patients;  $p=0.0083$ ). The differences observed in the evolution of morning and daytime stiffness between the two groups were smaller ( $p=0.053$  and  $p=0.33$ , respectively), with the exception of time necessary for the disappearance of morning stiffness which was greater in group C ( $37.7 \pm 23.0$  vs.  $17.9 \pm 20.1$  min;  $p=0.0173$ ).

274. Manchanda RK, et al. **A randomized comparative trial in the management of Alcohol Dependence: Individualized Homoeopathy versus standard Allopathic Treatment.** *Ind J Res Hom*, 2016, 10, 172-81. Workers from India's Central Research Institute and Central Council for Research in Homoeopathy compared the effects of individualised homeopathy (IH) with standard allopathic (SA) treatment for people with alcohol dependence using a controlled, open-label design. Subjects were screened verbally using the CAGE scale. 80 people who fulfilled the inclusion criteria were randomised to either IH ( $n=40$ ) or SA ( $n=40$ ) treatment and followed up for 12 months. The primary outcome was the level of change in the Severity of Alcohol Dependence Questionnaire [SADQ] rating scale at 12 months. Data analysis was done for both intention-to-treat (ITT) and per-protocol (PP) populations. The results showed that IH was superior to SA in the management of alcohol dependence. The medicines most frequently used were Sulphur, Lycopodium clavatum, Arsenicum album, Nux vomica, Phosphorus, and Lachesis.

275. Palm J, et al. **Effectiveness of an add-on treatment with the homeopathic medication SilAtro-5-90 in recurrent tonsillitis.** *Complement Ther Clin Pract*, 2017, 28, 181-191. In this international, pragmatic, controlled clinical trial, 256 patients (6-60 years) with moderate recurrent tonsillitis were randomised to receive either SilAtro-5-90, a homeopathic combination, in addition to standard symptomatic treatment, or to receive standard treatment only. The primary outcome was the mean time period between consecutive acute throat infections (ATI) within 1 year (analysed via repeated events analysis). During the evaluation year, the risk of getting an ATI was significantly lower (hazard ratio: 0.45, proportional means model,  $p = 0.0002$ , ITT) with SilAtro-5-90 compared to control. Tonsillitis-specific symptoms were significantly reduced ( $p < 0.0001$ , ITT) and the need of antibiotics to treat acute throat infections ( $p = 0.0008$ ; ITT) decreased.

276. Motiwala FF, et al. **Effect of Homoeopathic treatment on Activity of Daily Living (ADL) in Knee Osteoarthritis: A prospective observational study.** *Ind J Res Hom*, 2016, 10, 182-7. An Indian research team set out to investigate the effect of individualised homeopathic medicines in improving ADL by reducing pain, stiffness and limiting the disease progress. 131 consecutive patients with OA of the knee were recruited and followed up for minimum period of 12 months. Two orthopaedic surgeons diagnosed the disease based on clinical examination of the patients. Three trained homeopathic physicians prescribed individualised homeopathic medicines and the patients were evaluated for pain on WOMAC Osteoarthritis Index LK3.1 (IK) survey form measuring pain, stiffness and ADL. The pain was also measured on Numerical pain rating scale (NRS) for further confirmation. The homeopathic intervention was associated with a mean ADL score reduction of 35.85 down to 19.08 ( $p=0.0001$ ). Mean pain on WOMAC Osteoarthritis Index survey form improved from 10.50 to

5.48 (p=0.0001). The mean pain score on NRS improved from 6.34 to 3.77 (p=0.0001) and the mean morning stiffness also improved from 4.55 to 2.18 (p=0.0001).

277. Sorrentino L, et al. **Is there a role for homeopathy in breast cancer surgery? A first randomized clinical trial on treatment with Arnica montana to reduce post-operative seroma and bleeding in patients undergoing total mastectomy.** *J Intercult Ethnopharmacol*, 2017, 6, 1, 1-8. This study aimed to evaluate the benefits of homeopathically prepared Arnica montana on post-operative blood loss and seroma production in women undergoing unilateral total mastectomy by administering Arnica Montana 1000 Korsakovian dilution (1000 K). From 2012 to 2014, 53 women were randomly assigned to A. montana or placebo and were followed up for 5 days. The main end point was the reduction in blood and serum volumes collected in drainages. Secondary end points were duration of drainage, a self-evaluation of pain, and the presence of bruising or hematomas. The results showed that the use of Arnica 1000 K was associated with a reduced post-operative blood and seroma collection.

278. Mittal R, et al. **An open-label pilot study to explore usefulness of Homoeopathic treatment in nonerosive gastroesophageal reflux disease.** *Ind J Res Hom*, 2016, 10, 188-98. This was a pilot study undertaken to explore the effect of homoeopathic medicines in the treatment of people with nonerosive gastroesophageal reflux disease or nonerosive reflux disease (NERD). 34 people were enrolled, having symptoms of heartburn and/or regurgitation at least twice a week, and having a gastroesophageal reflux disease (GERD) symptom score of more than 4. Homoeopathic medicine was prescribed on the basis of the presenting symptoms. Response to treatment was assessed on GERD symptom score, visual analogue scale (VAS) for heartburn, and the World Health Organization quality of life-BREF (WHO-QOL) questionnaire evaluated at baseline and at the end of 8 weeks of treatment. Significant differences were found in pre and post treatment GERD symptom score ( $8.79 \pm 2.7$  vs.  $0.76 \pm 1.8$ ;  $P = 0.001$ ) and the VAS for heartburn ( $47.47 \pm 19.6$  vs.  $5.06 \pm 11.8$ ;  $P = 0.001$ ). Statistically significant improvement was also seen in three domains of the WHO-QOL score, i.e. psychological health, social relationship, and environmental domain.

279. Teixeira MZ, Podgaec S, Baracat EC. **Potentized estrogen in homeopathic treatment of endometriosis-associated pelvic pain: A 24-week, randomized, double-blind, placebo-controlled study.** *Eur J Obstet Gynecol Reprod Biol*, 2017, 211, 48-55. This work looked at the possible efficacy and safety of potentised oestrogen compared to placebo in the homeopathic treatment of endometriosis-associated pelvic pain (EAPP). Researchers enrolled 50 women aged 18-45 years old with diagnoses of deeply infiltrating endometriosis based on magnetic resonance imaging or transvaginal ultrasound after bowel preparation, and who scored  $\geq 5$  on a visual analogue scale (VAS: range 0 to 10) for endometriosis-associated pelvic pain. Potentised oestrogen (12C, 18C and 24C) or placebo was administered twice daily per oral route. The primary outcome measure was change in the severity of EAPP global and partial scores (VAS) from baseline to week 24, determined as the difference in the mean score of five modalities of chronic pelvic pain (dysmenorrhea, deep dyspareunia, non-cyclic pelvic pain, cyclic bowel pain and/or cyclic urinary pain). The secondary outcome measures were mean score difference for quality of life assessed with SF-36 Health Survey Questionnaire, depression symptoms on Beck Depression Inventory (BDI), and anxiety symptoms on Beck Anxiety Inventory (BAI). An analysis of the results showed that potentised oestrogen (12C, 18C and 24C) at a dose of 3 drops twice daily for 24 weeks was significantly more effective than placebo for reducing endometriosis-associated pelvic pain.

280. Oberai P, et al. **Homoeopathic management of Schizophrenia: A prospective, non-comparative, open-label observational study.** *Ind J Res Hom*, 2016, 10, 108-118. This 5 year study was run by India's Central Council for Research in Homoeopathy and sought to evaluate the

usefulness of homeopathic intervention in schizophrenia. Patients between 20 and 60 years of age presenting with symptoms of schizophrenia were screened for inclusion and exclusion criteria. The patients who were on antipsychotic drugs were allowed to continue the same along with homeopathic medicine, and the dose of antipsychotics was monitored by a psychiatrist. The homeopathic medicines were prescribed according to the presenting symptoms. Patients were followed up for 12 months. The response to treatment was assessed using Brief Psychiatric Rating Scales (BPRS) and data analysis was done using Statistical Package for the Social Sciences SPSS Version 20.0. The 171 enrolled patients were assessed as per the modified Intention to Treat Principle. An analysis of the results showed a statistically significant ( $P = 0.0001$ ,  $P < 0.05$ ) response to homeopathic treatment. Sulphur, Lycopodium, Natrum muriaticum, Pulsatilla and Phosphorus were found to be the most useful medicines in treating schizophrenic patients.

281. Thompson E, Viksveen P, Barron S. **A patient reported outcome measure in homeopathic clinical practice for long-term conditions.** *Homeopathy*, 2016, 105, 4, 309-317. This study was carried out at the Bristol Homeopathic Hospital using the Measure Yourself Medical Outcome Profile (MYMOP2) to assess the outcomes of homeopathic treatment for chronic conditions in routine clinical practice. A total of 198 patients with a wide range of complaints attended one to five consultations with 20 homeopathic doctors. Diagnostic categories were most commonly neoplasms (16.7%), psychological (13.9%) and genitourinary complaints (12.3%), with 66.7% suffering from these problems for at least 1 year. The three symptoms that bothered patients the most were pain, mental symptoms and tiredness/fatigue. A paired-samples t-test using an intention-to-treat analysis showed that the MYMOP2 profile score improved from 4.25 (IQR 3.50-5.00), with a mean change of 1.24 (95% CI 1.04, 1.44) from the first to the last consultation ( $p < 0.001$ ). Results were statistically significant both for completers ( $n=91$ ) ( $p < 0.001$ ) and non-completers ( $n=107$ ) ( $p < 0.001$ ) using last-observation-carried-forward, although completers did better than non-completers ( $p < 0.001$ ). The overall clinical significance of improvements was at least moderate. A repeated measures ANOVA test also showed statistically significant improvements ( $p < 0.001$ ).

282. Oberai P, et al. **A multicentric randomized clinical trial of homoeopathic medicines in fifty millesimal potencies vis-a-vis centesimal potencies on symptomatic uterine fibroids.** *Ind J Res Hom*, 2016, 10, 24-35. This multicentric randomised clinical trial was conducted at 6 centres by India's Central Council for Research in Homoeopathy with the primary to evaluate the effects of homeopathic medicines in fifty millesimal (LM) potencies compared to centesimal (CH) potencies on symptomatic uterine fibroids. All assessments were carried out by a specialist obstetrician/gynaecologist and specialist homeopathic physicians engaged were responsible for the homeopathic prescriptions and follow up, which occurred over 12 months. The primary outcome measures were changes in the symptoms of uterine fibroids on a visual analogue scale (VAS) of 0–10 and findings through ultrasonography (USG) between LM and CH potencies. The secondary outcome was changes in uterine fibroid symptom quality of life questionnaire (UFSQOL). Data analysis was done as per intention to treat (ITT) analysis. 209 subjects were enrolled in the study, (LM: 106 and CH: 103), 209 and their data analysed under a modified ITT. 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 sub-domains 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 a statistically significant difference before and after homeopathic treatment irrespective of assigned groups, i.e., LM or CH ( $P < 0.05$ ) in all of the above parameters. The medicines most frequently prescribed were: Pulsatilla, Sulphur, Lycopodium, Sepia, Phosphorus, Calcarea carbonica, and Natrum muriaticum.

283. Das KD, et al. **Treatment of hemorrhoids with individualized homeopathy: An open observational pilot study.** *J Intercult Ethnopharmacol*, 2016, 5, 4, 335-342. In this prospective, open, observational trial, haemorrhoids patients were treated using 5 standardised scales that measured complaint severity and anoscopic score. It was conducted at two homeopathic hospitals in India, during from mid-July 2014 to mid-July 2015. Patients were treated with individualised homeopathy and followed up every month up to 6 months. A total of 73 patients were screened, 52 enrolled, 38 completed, and 14 dropped out. Intention to treat population ( $n = 52$ ) was analysed in the end. Statistically significant reductions of mean bleeding (month 3: -21.8, 95% confidence interval [CI]: -30.3, -13.3,  $P < 0.00001$ ,  $d = 0.787$ ; month 6: -25.5, 95% CI -35.4, -15.6,  $P < 0.00001$ ,  $d = 0.775$ ), pain (month 3: -21.3, 95% CI -28.6, -14.0,  $P < 0.00001$ ,  $d = 0.851$ ; month 6: -27.6, 95% CI -35.6, -19.6,  $P < 0.00001$ ,  $d = 1.003$ ), heaviness visual analogue scales (VASs) (month 3: -8.1, 95% CI -13.9, -2.3,  $P = 0.008$ ,  $d = 0.609$ ; month 6: -12.1, 95% CI -19.1, -5.1,  $P = 0.001$ ,  $d = 0.693$ ), and anoscopic score (month 3: -0.4, 95% CI -0.6, -0.2,  $P < 0.0001$ ,  $d = 0.760$ ; month 6: -0.5, 95% CI -0.7, -0.3,  $P < 0.0001$ ,  $d = 0.703$ ) were achieved. Itching VASs reduced significantly only after 6 months (-8.1, 95% CI -14.6, -1.6,  $P = 0.017$ ,  $d = 0.586$ ). The outcomes confirmed that individualised homeopathic treatment was effective in the management of haemorrhoids. The most frequently used medicines here were Sulphur, Nux vomica, Calc phos and Nat mur.

284. Janardanan KR, 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 in Homoeopathy*, 2014, 8, 3, 160-165. The objective here was to assess the usefulness of Bryonia alba 30C in the prevention of chikungunya during its normal epidemic outbreak in the state of Kerala, India. A cluster-randomised, double-blind, placebo-controlled trial was conducted in 2 districts. Bryonia alba 30C or placebo were randomly administered to 167 clusters (Bryonia alba 30C = 84 clusters; placebo = 83 clusters) out of which data on 158 clusters was analysed (Bryonia alba 30C = 82 clusters; placebo = 76 clusters). Healthy participants (absence of fever and arthralgia) were eligible for the study (Bryonia alba 30C  $n = 19750$ ; placebo  $n = 18479$ ). Weekly follow-up was done for 35 days. The infection rate in the study groups was analysed and compared by use of cluster analysis. The findings showed that 2525 out of 19750 people from the Bryonia alba 30 C group suffered from chikungunya, compared to 2919 out of 18479 in the placebo group. Cluster analysis showed a 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.

285. Barvalia PM, et al. **Effectiveness of homoeopathic therapeutics in the management of childhood autism disorder.** *Ind J Res Hom*, 2014, 8, 3, 147-159. A team from Mumbai conducted this research with the objective of demonstrating the usefulness of the homeopathic management of autism. 60 children of both sexes diagnosed with autism aged,  $\leq 12$  years were selected. A non-randomised, self-controlled, pre and post-intervention study design was used. An initial 6 months observation period was employed as the control period and the same patients were treated for 1 year. Outcome changes were measured using the Autism Treatment Evaluation Checklist and the Autistic Hyperactivity Scale. The study demonstrated a significant reduction of hyperactivity, behavioural dysfunction, sensory impairment as well as communication difficulty. The medicines most commonly used were Stramonium, Tarentula hispanica, Calcarea carbonica, Natrum muriaticum, and Carcinosinum.

286. Nakhoda F, Tsele-Tebakang T. **A Pilot Study of Individualised Homeopathic Treatment of Chronic Constipation.** *Hpathy*, November 17, 2018. This was a case series conducted at the University of Johannesburg Homeopathy Health Training Centre over a six-week period and was intended to determine the efficacy of individualised homeopathic treatment of people suffering from

chronic constipation. Through purposive sampling, 10 people aged 18-50 years who met the Rome II criteria participated in the study. A selection questionnaire confirming the participant's constipation status was completed. The participants then had their full case history taken and physical examination performed. Each case was repertorised using Mercurius Repertorisation Software version 5.2.1.0 and participants were given the individualised remedy at a 30C potency given daily at a dose of 1 drop. The participants were advised not to make any alterations to their usual diet or any lifestyle changes that could affect their bowel habits. At each follow-up consultation, the participant's case was re-evaluated with special attention given to changes in symptoms or the appearance of new symptoms. Depending upon the participants' response to the initial prescription, the remedy or potency was either changed or continued. The results of the study indicated an improvement in stool frequency and general wellbeing for all 10 participants, and an improvement in stool form and ease of evacuation for the majority of the participants.

287. Rajalakshmi MA. **Homeopathic Treatment as an Aid to Inclusive Integration of Children with Autism Spectrum Disorder.** *Hpathy*, November 17, 2018. This was a retrospective study of the homeopathic treatment of 40 children with ASD, seen by the author in private practice. Standard constitutional homeopathic case taking was used to prescribe individualised homeopathic therapy. A quantitative analysis of this data found that there was a statistically significant reduction in the mean Autism Treatment Evaluation Checklist (ATEC) scores of children after the homeopathic treatment (33.17) when compared with the scores before starting the homeopathic treatment protocol (78.15).

288. Saha S, Tamkeen R, Saha A. **An open observational trial evaluating the role of individualised homeopathic medicines in the management of nocturnal enuresis.** *Ind J Res Hom*, 2018, 12, 3, 149-156. This Indian study looked at the homeopathic management of nocturnal enuresis using a prospective, single arm, pre-post comparison, non-randomised, open-label, observational trial on 34 people of 5–18 years of age presenting with nocturnal enuresis at the outpatient department of The Calcutta Homoeopathic Medical College and Hospital. A scoring scale was developed; scores were measured at baseline, and after 2<sup>nd</sup> and 4<sup>th</sup> month. Compared to baseline, scores reduced significantly over 2 months and the use of the homeopathic medicines was associated with a statistically significant reduction in symptoms.

289. Sharma R, et al. **Assessment of the effectiveness of homeopathic remedies in improving quality of life of chronic urticaria patients in a typical clinical setting.** *Ind J Res Hom*, 2018, 12, 3, 139-148. The aim here was to evaluate the effectiveness of constitutional homeopathic treatment for chronic urticaria (CU) patients attending the Outpatient Department of the State Homoeopathic Dispensary, Ahmadpur, Aligarh, Uttar Pradesh, India. CU-QoL questionnaire (CU-Q<sub>2</sub>oL) and average Urticaria Activity Score for 7 days (UAS7) questionnaires were filled out at baseline and at the 3<sup>rd</sup>, 6<sup>th</sup>, 9<sup>th</sup> and 12<sup>th</sup> months. Scores were analysed using one-way repeated measures ANOVA with SPSS version 19. A total of 134 patients were screened. 70 were diagnosed with CU and enrolled in the study. Their data was analysed under modified intention-to-treat approach. A significant difference was found between the baseline and 12<sup>th</sup> month CU-QoL score (mean difference 34.14 with standard error of 1.65, 95% confidence interval, lower bound 29.31, upper limit 38.94,  $P < 0.001$ ). A one-way repeated measures ANOVA was calculated for comparing CU-Q<sub>2</sub>oL scores ( $F [2.45, 169.46] = 260.89, P \leq 0.000$ , effect size = 0.791). *Apis mellifica* ( $n = 10$ ), *Natrum muriaticum* ( $n = 9$ ), *Rhus toxicodendron* ( $n = 8$ ) and *Sulphur* ( $n = 8$ ) were the most frequently used medicines.

290. Adler UC, et al. **Double-blind evaluation of homeopathy on cocaine craving: a randomized controlled pilot study.** *J Integrative Medicine*, 2018, 16, 3, 178-184. This study investigated the effectiveness and tolerability of homeopathic Q-potencies of opium and *E. coca* in the integrative treatment of cocaine craving in a community-based psychosocial rehabilitation setting. It used a

randomised, double-blind, placebo-controlled, parallel-group trial design over 8 weeks and was conducted at the Psychosocial Attention Center for Alcohol and Other Drugs (CAPS-AD), Sao Carlos/SP, Brazil. 54 people with an International Classification of Diseases-10 diagnosis of cocaine dependence (F14.2) were enrolled in the study. The patients were randomly assigned to either of 2 treatment groups: psychosocial rehabilitation plus homeopathic Q-potencies of opium and E. coca (homeopathy group), and psychosocial rehabilitation plus indistinguishable placebo (placebo group). The mean percentage of cocaine-using days in the homeopathy group was 18.1% (standard deviation (SD): 22.3%), compared to 29.8% (SD: 30.6%) in the placebo group ( $P < 0.01$ ). An analysis of the Minnesota Cocaine Craving Scale scores showed no between-group differences in the intensity of cravings, but results significantly favoured homeopathy over placebo in the proportion of weeks without craving episodes and the patients' appraisal of treatment efficacy for reduction of cravings.

291. Fixsen A. **Homeopathy in the Age of Antimicrobial Resistance: Is It a Viable Treatment for Upper Respiratory Tract Infections?** *Homeopathy*, 2018, 107, 2, 99-114. This was a literature review of post 1994 clinical studies featuring homeopathic treatment of acute URTIs and their complications, looking at whether or not homeopathy offers a viable alternative therapeutic solution for acute URTIs and their complications, and secondly how such homeopathic intervention might take place. 9 randomised controlled trials (RCTs) and 8 observational/cohort studies were analysed, 7 of which were paediatric studies. Seven RCTs used combination remedies with multiple constituents. The results for homeopathic treatment were positive overall, with faster resolution, reduced use of antibiotics and possible prophylactic and longer-term benefits, all associated with the use of these medicines.

292. Bosco F, et al. **An integrated approach with homeopathic medicine and electro-acupuncture in anaesthesiology during breast cancer surgery: Case reports.** *J Pharmacopuncture*, 2018, 21, 2, 126-131. This study investigated the effect of a combination of homeopathic medicine and electro-acupuncture in 2 patients with breast cancer and severe liver disease who could not receive standard anaesthesia therapy due to liver problems. The team used homeopathic treatment (Arnica montana 15C and Apis mellifica 15C) before and after surgery and an electro-acupuncture treatment performed in the pre- and post-surgical phases without any analgesic/pain relieving medications. Both of the patients treated with the integrated approach improved their overall condition without the need for other common pain relieving medicines.

293. Macias-Cortes EDC, et al. **Response to Individualized Homeopathic Treatment for Depression in Climacteric Women with History of Domestic Violence, Marital Dissatisfaction or Sexual Abuse: Results from the HOMDEP-MENOP Study.** *Homeopathy*, 2018, 107, 3, 202-208. The aim of this study was to assess the association between individualised homeopathic treatment or fluoxetine and a response to depression treatment in climacteric women with high levels of domestic violence, sexual abuse or marital dissatisfaction, using a randomised, placebo-controlled, double-blind, double-dummy, three-arm trial design, with a 6-week follow-up. 133 climacteric women with moderate-to-severe depression were enrolled in the trial. Domestic violence, marital dissatisfaction and sexual abuse were assessed at baseline. Response to depression treatment was defined by a decrease of 50% or more from baseline score using the Hamilton scale. The possible association between domestic violence, sexual abuse, and marital dissatisfaction and response to depression treatment was analysed with bivariate analysis in the three groups. An analysis of the results showed that treatment with homeopathy was associated with a statistically significant improvement in depression, after adjusting for sexual abuse, domestic violence and marital dissatisfaction.

294. Oberai P, et al, **Effectiveness of Homeopathic Medicines as Add-on to Institutional Management Protocol for Acute Encephalitis Syndrome in Children: An Open-Label Randomized Placebo-Controlled Trial.** *Homeopathy*, 2018, 107, 3, 161-171. This Indian study was designed to

assess the effects of homeopathic treatment as an addition to a standard institutional management protocol (IMP) for children diagnosed with acute encephalitis syndrome, using a randomised placebo-controlled trial design at an Indian paediatric unit where data was collected from 2013 to 2015. Children aged > 6 months and ≤ 18 years and receiving IMP were randomised to receive adjunctive homeopathy (n = 325) or placebo as control (n = 323). The primary effectiveness analysis was based on Glasgow Outcome Scale (GOS). Morbidity was assessed using the Liverpool Outcome Score for Assessing Children at Follow-up. Analysis was by intention to treat. Data from a total of 612 children was analysed (Homeopathy [H] = 304; Control [C] = 308). The primary outcome, GOS, differed significantly between H and C groups. There was 14.8% death/neuro-vegetative state in the H group compared to 29.8% in the C group. Relative risk was 0.49 (95% confidence interval [CI]: 0.36 to 0.68), with absolute risk reduction of 15.0% (95% CI: 8.6 to 21.6%). The most frequently used medicines were Belladonna (n = 116), Stramonium (n = 33), Arsenicum album (n = 25), Sulfur (n = 18), Opium (n = 17), and Nux vomica (n = 10).

295. Danno K, Duru G, Vetel JM. **Management of Anxiety and Depressive Disorders in Patients ≥ 65 Years of Age by Homeopath General Practitioners versus Conventional General Practitioners, with Overview of the EPI3-LASER Study Results.** *Homeopathy*, 2018, 107, 2, 81-89. This work was carried out to determine if older adults diagnosed with anxiety and depressive disorders (ADD) who consult a general practitioner prescribing homeopathic medicines (GP-Ho) report less psychotropic drug use and are more likely to experience clinical improvement than those receiving conventional care. Socio-demographic and medical data and details of any medications prescribed were collected at inclusion. Information regarding the patients' functional status (Hospital Anxiety and Depression Scale [HADS]) was obtained via a telephone interview 72 hours after inclusion, and at 1, 3 and 12 months post-inclusion. Medication use and outcome were determined over a 12-month period. 110 patients were recruited and 87 (79.1%) with ADD (HADS ≥ 9) at the 72-hour interview were evaluated (age range: 65-93 years, 82.8% female). Patients who consulted a GP-Ho were more likely to have clinical improvement after 12 months than those receiving conventional care (CC) via a GP. Patients who consulted a GP-Ho reported less psychotropic drug use and benzodiazepine use than CC patients.

296. Pannek J, et al. **Usefulness of classical homeopathy for the prophylaxis of recurrent urinary tract infections in individuals with chronic neurogenic lower urinary tract dysfunction.** *J Spinal Cord Med*, 2018, Feb 27, 1-11. This prospective study looked at the effects of constitutional homeopathy for the prevention of recurrent urinary tract infections (UTI) in patients with spinal cord injury (SCI) in Switzerland. Participants with ≥3 UTI/year were treated either with a standardised prophylaxis alone or in combination with homeopathy. The number of UTI, general and specific quality of life (QoL), and satisfaction with homeopathic treatment were assessed prospectively for one year. 35 people were enrolled in the study, with 10 allocated to a control group and 25 received adjunctive homeopathic treatment. The median number of self-reported UTI in the homeopathy group decreased significantly, whereas it remained unchanged in the control group. The domain incontinence impact of the QoL improved significantly, whereas the general QoL did not change. The satisfaction with homeopathic care was high.

297. Banerjee K, et al. **Homeopathy for Allergic Rhinitis: A Systematic Review.** *J Alt and Compl Med*, 2017, 23, 6, 426-444. The aim of this study was to evaluate the effectiveness of homeopathic intervention in the treatment of seasonal or perennial allergic rhinitis (AR). Randomised controlled trials evaluating all forms of homeopathic treatment for AR were included in a systematic review (SR) of studies published up to and including December 2015. Two authors independently screened potential studies, extracted data, and assessed risk of bias. Primary outcomes included symptom improvement and total quality-of-life score. Treatment effect size was quantified as mean difference (continuous data), or by risk ratio (RR) and odds ratio (dichotomous data), with 95% confidence intervals (CI). A meta-

analysis was performed after assessing heterogeneity and risk of bias. 11 studies were eligible for SR. All trials were placebo-controlled except 1. 6 trials used the treatment approach known as isopathy, but they were unsuitable for meta-analysis due to problems of heterogeneity and data extraction. The overall standard of methods and reporting was poor: 8/11 trials were assessed as "high risk of bias", and only one trial, on isopathy for seasonal AR, possessed reliable evidence. Three trials of variable quality (all using Galphimia glauca for seasonal AR) were included in the meta-analysis: nasal symptom relief at 2 and 4 weeks favoured homeopathy compared with placebo; ocular symptom relief at 2 and 4 weeks also favoured homeopathy. The single trial with reliable evidence had a small positive treatment effect without statistical significance. A homeopathic and a conventional nasal spray produced equivalent improvements in nasal and ocular symptoms. The authors urged caution in the interpretation of these results but said that the use of either Galphimia glauca or a homeopathic nasal spray may have small beneficial effects on the nasal and ocular symptoms of AR.

298. Klein-Laansma CT, et al. **Semi-Individualized Homeopathy Add-On Versus Usual Care Only for Premenstrual Disorders: A Randomized, Controlled Feasibility Study.** *J Alt Compl Med*, 2018, 24, 7, 684-693. This European study compared the add-on effect of homeopathic treatment and usual care, with usual care alone for women suffering from premenstrual syndrome and premenstrual dysphoric disorder (PMS/PMDD) using a multicenter, randomised, controlled pragmatic trial with parallel group design. The study was carried out in general and private homeopathic practices in the Netherlands and Sweden, and in an outpatient university clinic in Germany. 60 women diagnosed as having PMS/PMDD, based on prospective daily rating by the daily record of severity of problems (DRSP) during a period of 2 months, were included and randomised to receive usual care plus homeopathy (UC+HT) or usual care (UC) for 4 months. The homeopathic medicine was selected according to a previously tested prognostic questionnaire and electronic algorithm. Usual care was as provided by the women's general practitioner according to their preferences. Before and after treatment, the women completed diaries (DRSP), the measure yourself concerns and well-being, and other questionnaires. After 4 months, relative mean change of DRSP scores in the UC + HT group was significantly better than in the UC group.

299. Mahesh S, et al, **Case Series of Vitiligo and Homeopathy,** *Am J Case Rep*, 2017, 18, 1276-1283. This work analysed the results of the constitutional homeopathic treatment of 14 people suffering from vitiligo, over a period of 58 months. The mean time between the onset of the appearance of vitiligo and the first consultation at the treating clinic was 96 months. A significant reduction in symptoms was seen in all 14 cases and the authors noted that the best results were achieved in the patients who were treated in the early stages of the disease.

300. Magi T, et al. **Use of Complementary and Alternative Medicine in Children with Cancer: A Study at a Swiss University Hospital.** *PLoS One*. 2015, 10, doi: 10.1371/journal.pone.0145787. This study examined the characteristics and effectiveness of complementary and alternative medicine (CAM) for childhood cancer patients treated at the University Children's Hospital Bern between 2002 and 2011. 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. 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.

301. Gaertner K, et al. **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. In this work, 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 3 homeopathic consultations, fatal prognosis of disease, quantitative and qualitative description of patient characteristics, and survival time. Data was collected on 538 patients. From the 53.7% (n=287) who had undergone at least 3 homeopathic consultations within four years, 18.7% (n=54) fulfilled inclusion criteria for survival analysis. Median overall survival was compared to expert expectations of survival outcomes by specific cancer type and the use of homeopathy as associated with prolonged survival time across observed cancer entities.

302. Gleiss A, Frass M, Gaertner K. **Re-analysis of survival data of cancer patients utilizing additive homeopathy.** *Complement Ther Med*, 2016 Aug, 27, 65-7. This was a brief re-analysis of the data from the study referred to above. The team took account of a probable immortal time bias. For patients suffering from advanced stages of cancer and surviving the first 6 or 12 months after diagnosis, respectively, the results show that utilising homeopathy gives a statistically significant ( $p < 0.001$ ) advantage over control patients regarding survival time. In conclusion, bearing in mind all limitations, the results of this retrospective study suggest that patients with advanced stages of cancer might benefit from additional homeopathic treatment until a survival time of up to 12 months after diagnosis.

303. Bagot JL. **Using hetero-isotherapics in cancer supportive care: the fruit of fifteen years of experience.** *Homeopathy*, 2016, 105, 1, 119-25. In this work the authors set out to determine if the use of homeopathic medicines made from chemotherapy drugs, also called hetero-isotherapy, would reduce the level of side-effects from chemotherapy experienced by people being treated for cancer. The treatment involved taking a daily dose of the homeopathic medicine made from the chemotherapy drug used, with the patient taking ascending potencies from 5C to 15C. The team 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.

304. Poole J. **Individualised homeopathy after cancer treatment.** *Nurs Times*, 2014, 110, 41, 17-9. This was a small, community-based study carried out in the UK which explored the benefits of a 3-month course of individualised homeopathy (IH) for survivors of cancer. 15 survivors of any type of cancer, for whom up to 3 years had passed since their conventional treatment ended, were recruited by a walk-in cancer support centre, and patients scored their total, physical and emotional wellbeing using the Functional Assessment of Chronic Illness Therapy for Cancer before and after receiving 4 IH sessions over a 3 month period. The group as a whole showed statistically significant, positive results for total, physical and emotional wellbeing, suggesting IH has a role in symptom control and general recovery from conventional cancer treatment.

305. Nayak D, et al. **Effect of Adjuvant Homeopathy with Usual Care in Management of Thrombocytopenia Due to Dengue: A Comparative Cohort Study.** *Homeopathy*, 2019, 108, 3, 150-7. 138 patients received an individualised homeopathic medicine along with usual care (H+UC), and 145 patients received usual care (UC) alone. Assessment of thrombocytopenia (platelet count  $< 100,000/\text{mm}^3$ ) was the main outcome measure. Kaplan-Meier analysis enabled comparison of the time taken to reach a platelet count of  $100,000/\text{mm}^3$ . There was a statistically significantly greater rise in platelet count on day 1 of follow-up in the H+UC group compared with UC alone (mean

difference = 12,337; 95% confidence interval [CI], 5,421 to 19,252;  $p = 0.001$ ). This trend persisted until day 5 (mean difference = 14,809; 95% CI, 1,615 to 28,004;  $p = 0.02$ ). The time taken to reach a platelet count of  $100,000/\text{mm}^3$  was nearly 2 days earlier in the H+UC group compared with UC alone (H+UC: 3.44 days  $\pm$  standard error of the mean [SEM] 0.18; 95% CI, 3.08 to 3.80; UC: 5.28 days  $\pm$  SEM 0.29; 95% CI, 4.71 to 5.86;  $p < 0.001$ ).

306. Tavares-Silva C, et al. **Homeopathic medicine of *Melissa officinalis* combined or not with *Phytolacca decandra* in the treatment of possible sleep bruxism in children: A crossover randomized triple-blinded controlled clinical trial.** *Phytomedicine*, 2019, 58, 152869. 52 children were selected based on the parents report of sleep bruxism (SB). The study comprised a crossover design that included 4 phases of 30-day treatment (Placebo; *Melissa officinalis* (MO) 12C; *Phytolacca decandra* (PD) 12C; and MO 12C + PD 12C), with a wash-out period of 15 days between treatments. At baseline and after each phase, the Visual Analogue Scale (VAS) was used as the primary outcome measure to evaluate the influence of treatments on the reduction of SB. The following additional outcome measures were used: a children's sleep diary with parent's/guardian's perceptions of their children's sleep quality, the trait of anxiety scale (TAS) to identify changes in children's anxiety profile, and side effects reports. Data were analysed by ANOVA with repeated measures followed by Post Hoc LSD test. Significant reduction of SB was observed in VAS after the use of Placebo ( $-1.72 \pm 0.29$ ), MO ( $-2.36 \pm 0.36$ ), PD ( $-1.44 \pm 0.28$ ) and MO + PD ( $-2.21 \pm 0.30$ ) compared to baseline ( $4.91 \pm 1.87$ ). MO showed better results compared to PD ( $p = 0.018$ ) and Placebo ( $p = 0.050$ ), and similar result compared to MO+PD ( $p = 0.724$ ). The sleep diary results and TAS results were not influenced by any of the treatments. No side effects were observed after treatments.

307. Shukla I. **A Prospective Observational Study on the Therapeutic Effect of *Plantago Major* in Reducing Craving for Tobacco.** *Homœopathic Links*, 2019, 32, 03, 145-51. A prospective study was conducted with 30 randomly selected 30 patients who showed tobacco dependence. They were treated using the homeopathic medicine *Plantago major* and were reviewed in every 2 weeks. Outcomes were measured by fagerstrom test score changes. Of the 30 cases, 27(90%) cases showed change in tobacco dependence, 3(10%) cases didn't show any change. To assess this change in tobacco dependence fagerstrom test score of patients before and after treatment were taken into consideration. The statistical analysis was done using the paired t test. Significance was accepted at p value  $< 0.05$  to assess differences before and after taking medicine. Baseline Mean  $\pm$  SD FTND was  $6.93 \pm 1.41$  which improved to  $5.33 \pm 1.32$  after treatment. A paired student t test showed that the above changes were statistically significant ( $p < 0.005$ ) which shows a significant reduction in patient's tobacco dependence. p-Value is  $< 0.001$ .

308. Agarwal R. **Usefulness of *Robinia pseudoacacia* in the Treatment of Gastroesophageal Reflux Disease.** *Homœopathic Links*, 2019, 32, 03, 152-8. 30 patients suffering from GERD were enrolled in the study. The diagnosis was made on the basis of GERD questionnaire (GerdQ). *Robinia pseudoacacia* was prescribed in 6C potency in repeated doses to the enrolled patients. The improvement in patients was assessed using GerdQ which was evaluated at baseline and after the 6 months treatment by using the paired 't' test. Of the 30 cases, 1 case was cured, 26 showed a good improvement and 3 did not respond to the treatment. Overall, statistically significant difference was found in pre- and post-treatment GERDQ scores ( $p < 0.001$ ).

309. Gupta N. **Clinical Evaluation of Homoeopathic Medicines in Benign Prostatic Hyperplasia.** *Homœopathic Links*, 2019, 32, 02, 82-7. 30 clinically subjects with BPH were given individualised homeopathic treatment and followed up for a period of 1 year. Treatment effects were analysed periodically by American Urological Association score (AUA score) and ultrasonography. Marked amelioration of symptoms and reduction in size of prostate gland in BPH subjects were observed after

homeopathic treatment when analysed by AUA score and ultrasonography. There was marked reduction in various symptoms of BPH such as nocturia, straining, incomplete sensation after urination, interrupted flow of urination with dribbling of urine and urgency significantly from  $21.60 \pm 4.64$  units to  $12.23 \pm 3.68$ , that is, ~57% reduction in symptoms of obstruction of bladder problem. The reduction was statistically significant ( $p = 0.001$ ). However, transabdominal pelvic ultrasonic scan did not show statistically significant results.

310. Bhat S. **Assessment of Efficacy of Constitutional Treatment in the Management of Prediabetes by Analysing Hba1c Values.** *Hpathy*, June 18, 2019. 45 individuals with prediabetes were selected for the study, based on normal diagnostic criteria. HbA1c values were obtained during the first visit according to ADA criteria. Based on totality of symptoms constitutional homeopathic medicine was prescribed and followed for a minimum period of 3 months. Data was statistically analysed using Paired 't' test, which showed a 'p' value of 0.000 for a highly significant reduction in HbA1c values after a minimum 3 months duration of homeopathic treatment.

311. Gopinadhan S, et al. **A Pilot Study on the Effect of Arsenicum album in Alcohol Dependents.** *CCRH Quarterly Bull*, 1994, 16, 1&2, 10-15. The authors gave 10 alcoholic males Arsenicum album 30C or 200C, repeating the dose as needed for 15 to 40 days and kept under observation for that period, after which it was determined that 8 of the subjects developed a complete aversion to alcohol while 2 reduced their desire for alcohol. These results were maintained over a further 2 year observation period.

312. Gupta J, et al. **Homeopathic medicine – Sepia for the management of menopausal symptoms: A multicentric, randomised, double-blind placebo-controlled clinical trial.** *Ind J Res Hom*, 2019, 13, 4, 219-28. This study was conducted with the objectives of evaluating the efficacy of homeopathic medicine – Sepia in the management of menopausal symptoms using 'The Greene Climacteric Scale' (GCS) and the quality of life using Utian Quality of Life (UQOL) scale. A randomised double-blind placebo-controlled clinical study was conducted on 88 perimenopausal women who were randomised to receive either homeopathic intervention, i.e., Sepia or identical placebo and followed up for 6 months to assess them on predefined clinical parameters. The primary outcome was the change in the menopausal complaints assessed using GCS and the secondary outcome measure was change in UQOL scale. The primary outcome measure, i.e., total score of GCS, when compared after 6 months, was reduced from  $30.23 \pm 8.1$  to  $7.86 \pm 4.6$  in Sepia group (improvement of 73.9%) and from  $30.05 \pm 8.9$  to  $12.73 \pm 8.3$  in placebo group (improvement of 57.63%) ( $P = 0.001$ ). There was a statistically significant difference between both the groups, when compared after 6 months ( $P = 0.001$ ). With respect to secondary outcome, the total UQOL score was  $59.09 \pm 7.74$  for Sepia group and  $57.39 \pm 7.80$  for placebo group at baseline, and  $62.43 \pm 7.71$  for Sepia group and  $63.48 \pm 7.53$  for placebo group after treatment indicating slight difference in quality of life after 6 months.

313. Saha S, et al. **An open-label prospective observational trial for assessing the effect of homeopathic medicines in patients suffering from gout.** *Ind J Res Hom*, 2019, 13, 4, 236-43. A prospective, single-arm, non-randomised, open-label, observational trial was conducted on 32 adults suffering from gout. All were given individualised homeopathic medicines. Serum uric acid level was the primary outcome (baseline vs. 3 months); Gout Assessment Questionnaire v2.0 (GAQ2; baseline vs. 3 months) and Measure Yourself Medical Outcome Profile v2.0 (MYMOP2; baseline, every month and up to 3 months) were the secondary outcomes. Intention-to-treat sample ( $n = 32$ ) was analysed in SPSS®IBM® version 20. Both serum uric acid level (mg/dl) ( $7.6 \pm 1.4$  vs.  $6.0 \pm 1.5$ ; mean reduction: 1.6, 95% confidence interval [CI] = 1.1, 2.1,  $P < 0.001$ , Student's *t*-test) and GAQ2 total score ( $45.0 \pm 9.1$  vs.  $21.0 \pm 14.0$ ; mean reduction: 24.0, 95% CI 19.1, 29.0,  $P < 0.001$ , Student's *t*-test) reduced significantly over 3 months. MYMOP2 scores obtained longitudinally at four different time points also revealed

statistically significant reductions ( $P < 0.001$ , one-way repeated measures ANOVA). The most frequently indicated medicine was Benzoicum acidum.

314. Bhalerao R, et al. **Lycopodium clavatum for the management of urolithiasis: A randomised double blind placebo controlled trial.** *Ind J Res Hom*, 2019, 13, 3, 139-49. A multicentric, randomised, double-blind, placebo-controlled trial was conducted. Patients having symptomatology like Lycopodium clavatum were enrolled after screening and repertorisation as per the inclusion and exclusion criteria. During acute renal colic, despite group allocation, the patients were either prescribed the indicated homeopathic medicines or conventional medicine. The analysis was carried out with an intention-to-treat approach, and missing values were handled using Last Observation Carry Forward method. There was no statistical significance between the groups ( $P = 0.31$ ) in reference to the number of cases in which stones expelled during the trial. The mean size of single stone expelled was  $9.4 \pm 4.9$  and  $13.9 \pm 2.2$  in Verum and Placebo groups, respectively ( $P = 0.12$ ). There was also no significant difference in the mean size of multiple stones; in Verum group ( $10.1 \pm 5.3$ ) and Placebo group ( $16.1 \pm 9.1$ ) ( $P = 0.11$ ). For assessment of pain and dysuria, Visual Analogue Scale was used, and a statistically significant difference was found between the groups ( $P = 0.039$ ) for pain, and positive trend for Homoeopathy was noted for dysuria.

314. Nath A, et al. **The role of homeopathic treatment in women suffering from post-caesarean backache: An open observational clinical trial.** *Ind J Res Hom*, 2019, 13, 2, 81-90. 45 women suffering from post-caesarean backache subjects were treated with individualised homeopathic medicines. The Short-Form McGill Pain Questionnaire (SF-MPQ) and Oswestry Low Back Pain Disability Questionnaire (ODQ) were used as the outcome measures, assessed at baseline and after 3 months of treatment. Medicines prescribed followed homeopathic principles. Non-parametric Wilcoxon signed rank test was applied to compare the dependent observations.  $P < 0.05$  two-tailed was considered statistically significant. There were statistically significant reductions in pain rating index percentage score (median 83.3 (IQR 66.7 to 100) vs. median 66.7 (IQR 33.3 to 71.1),  $P < 0.001$ ); visual analogue scale score (median 7.0 (IQR 6.0 to 8.0) vs. median 6.0 (IQR 4.8 to 7.0),  $P < 0.001$ ); present pain index score (median 3.0 (IQR 2.0 to 3.0) vs. median 2.0 (IQR 2.0 to 3.0),  $P = 0.019$ ) and ODQ% score (median 44.0 (IQR 39.5 to 50.0) vs. median 39.0 (IQR 31.9 to 44.0),  $P < 0.001$ ) over 3 months of treatment. Natrum muriaticum ( $n = 11$ , 22%); Staphysagria ( $n = 8$ , 16%); Bryonia alba and Rhus toxicodendron ( $n = 6$  each, 12%) and Pulsatilla nigricans ( $n = 4$ , 8%) were prescribed frequently.

315. Abbas A, et al. **An open-label pilot study to identify the usefulness of adjuvant homeopathic medicines in the treatment of cerebral stroke patients.** *Ind J Res Hom*, 2018, 12, 4, 194-201. In an open-label pilot study, 50 patients presenting with episodes of cerebral stroke of the different period were assessed by the National Institute of Health Stroke Scale (NIHSS) Score, prior homeopathic treatment and after 6 months of treatment. Of 50 patients, 10 patients had stroke more than 1 year and suffering with sequelae, 27 patients had stroke episode between 1 month and 1 year and 13 patients had a stroke episode within 4 weeks. The reduction in NIHSS score after 6 months of treatment was statistically significant in all three groups. The useful medicines found were Causticum ( $n = 11$ ), Arnica montana ( $n = 7$ ), Nux vomica ( $n = 6$ ), Lycopodium ( $n = 6$ ) and Lachesis ( $n = 3$ ). Neither patient had worsening signs nor any new infarcts during the study.

316. Raak C, et al. **Effectiveness of a homeopathic complex medicine in infantile colic: A randomized multicenter study.** *Complement Ther Med*, 2019, 45, 136-41. Data were drawn from a prospective, multicenter, randomised, open-label, controlled clinical trial that was conducted in 2009 in 3 Russian outpatient clinics. Children received either Enterokind (Chamomilla D6, Cina D6, Colocynthis D6, Lac defloratum D6 and Magnesium chloratum D6) or Simethicone. Data from infants  $\leq 6$  months with infantile colic are presented here. The main outcomes assessments were the change of total

complaints score (maximum 17 points) and total objective symptoms score (maximum 22 points) after 10 days of treatment. Data from 125 infants  $\leq$  6 months with infantile colic were analysed. The differences in total complaints and objective symptoms scores between baseline and day 10, estimated from the ANCOVA model, were found to be highly significant ( $p < 0.0001$ ; ITT) in favour of Enterokind, both for complaints ( $\Delta = -2.38$ ; 95% confidence interval (CI): [-2.87; -1.89]) and for objective symptoms ( $\Delta = -2.07$ ; 95% CI: [-2.65; -1.49]).

317. Mourao L, et al. **Homeopathy and Periodontal Treatment in Type II Diabetic Patients: a 1-Year Randomized Clinical Trial.** *Braz Dent J*, 2019, 30, 2, 139-45. 80 individuals with Chronic periodontitis (CP) and Diabetes mellitus type 2 (DMII), were divided into two groups: control group (CG) and the test group (TG), and both groups received the non-surgical periodontal therapy (NSPT). TG also received homeopathic therapy, including Berberis, Mercurius solubilis/Belladonna/Hepar sulphur and Pyrogenium, while CG received placebo. Clinical and laboratorial examinations (CAL) were evaluated at baseline and after 1, 6 and 12 months of treatment. Both groups showed significant improvement throughout the study, for most of the parameters studied, but TG presented significant gain of CAL at 1 and 12 months compared to CG. Mean glucose and glycated haemoglobin significantly decreased in both groups after 6 and 12 months. However, there was a significantly further reduction of these parameters in TG, as compared to CG

318. Michael J, et al. **Efficacy of individualized homeopathic treatment of insomnia: Double-blind, randomized, placebo-controlled clinical trial.** *Complement Ther Med*, 2019, 43, 53-59. In this double-blind, randomised, placebo-controlled, two parallel arms trial, 60 patients were randomised to receive either individualized homeopathy (IH) /verum or control/placebo (1:1). Patient-administered sleep diary (6 items; 1: latency to fall asleep, 2: minutes awake in middle of night, 3: minutes awake too early, 4: hours spent in bed, 5: total sleep time in hours, and 6: sleep efficiency) and Insomnia Severity Index (ISI) were taken as the primary and secondary outcomes respectively, measured at baseline, and after 3 months. Trial arms were comparable at baseline. In the verum group, except sleep diary item 3 ( $P = 0.371$ ), rest of the outcomes improved significantly (all  $P < 0.01$ ). In the control group, there were significant improvements in diary item 6 and ISI score ( $P < 0.01$ ) and just significant improvement in item 5 ( $P = 0.018$ ). Group differences were significant for items 4, 5 and 6 ( $P < 0.01$ ) and just significant ( $P = 0.014$ ) for ISI score with moderate to large effect sizes; but non-significant ( $P > 0.01$ ) for rest of the outcomes.

319. Yakir M, et al. **A Placebo-Controlled Double-Blind Randomized Trial with Individualized Homeopathic Treatment Using a Symptom Cluster Approach in Women with Premenstrual Syndrome.** *Homeopathy*, 2019, 108, 4, 256-69. 96 women with PMS entered a 2-month screening phase with prospective daily recording of premenstrual symptoms by the Menstrual Distress Questionnaire (MDQ). They were included after being diagnosed with PMS. A reproducible treatment protocol was used: women received a homeopathic prescription based on symptom clusters identified in a questionnaire. The symptoms were verified during a complementary, structured, interview. Only women whose symptoms matched the symptom profile of one of 14 pre-selected homeopathic medicines were included. Each participant was administered active medicine or placebo via random allocation. Primary outcome measures were differences in changes in mean daily premenstrual symptom (PM) scores by the MDQ. Analysis was by intention-to-treat. 43 women in the active medicine group and 53 in the placebo group received the allocated intervention with at least one follow-up measurement and their data were analysed. Significantly greater improvement of mean PM scores was measured in the active medicine group (0.443 [standard deviation, SD, 0.32] to 0.287 [SD, 0.20]) compared to placebo (0.426 [SD, 0.34] to 0.340 [SD, 0.39]);  $p = 0.043$ .

320. Andrade DC, et al. **Efficacy of a Homeopathic Medicine of Capsicum frutescens L. (Solanaceae) in the Treatment of Hot Flashes in Menopausal Women: A Phase-2 Randomized Controlled Trial.** *Homeopathy*, 2019, 108, 2, 102-7. 40 menopausal women were randomised to receive, the homeopathic medicine Malagueta (*Capsicum frutescens* L) (30 CH), or placebo, for 4 weeks. The primary outcome was the intensity of hot flashes, measured by the Measure Yourself Medical Outcome Profile (MYMOP) instrument. The effect of Malagueta on the primary outcome, the intensity of hot flashes, assessed by MYMOP, was superior to that of placebo over the 4 weeks of treatment, with worsening in both groups after treatment was interrupted (after week 4,  $p < 0.001$  in ordinal logistic regression). The odds ratio for treatment response (reduction of at least three MYMOP categories) was 2.78 (95% confidence interval, 0.77 to 10.05). Treatment with Malagueta, compared with placebo, also reduced the intensity of the secondary symptoms ( $p = 0.001$ ) and improved level of activity ( $p = 0.025$ ) and well-being ( $p = 0.008$ ).

## Animal studies

1. Aboioutboul R. **Snake remedies and eosinophilic granuloma complex in cats.** *Homeopathy*, 2006, 95, 1, 15-19. An Israeli veterinary clinic compiled case records involving Eosinophilic granuloma complex (EGC) in cats taken over an 8 year period. 20 cases of the condition were seen during this period and details of 15 of these cases were recorded. EGC is a syndrome characterised by lesions affecting the skin and the oral cavity. Conventional treatment is mainly symptomatic and may have undesirable side effects. The cases recorded involved the use of homeopathic snake remedies (the most frequently used being Lachesis) and in all 15 cases, reactions were mostly quick, leading to significant improvements, including complete recoveries.

2. Banerjee P, et al. **Comparative Efficacy of Two Microdoses of a Potentized Homeopathic Drug, Arsenicum album, to Ameliorate Toxicity Induced by Repeated Sublethal Injections of Arsenic trioxide in Mice.** *Pathobiology*, 2008, 75, 3, 156-70. This subject has had previous attention by Datta, Kundu and others, and in this randomised controlled trial, 6C and 30C homeopathic potencies of Arsenicum album (Arsenic trioxide) were given to mice prior to exposure to material doses of arsenic trioxide, as a means of determining whether or not the potentised Arsenicum album had any influence on the effects of arsenic. Mice were divided into 6 groups with 1 group receiving 6C Arsenicum album, another group receiving 30C Arsenicum album, and the remaining 4 groups receiving various control substances. Cellular and various biochemical parameters such as acid and alkaline phosphatases, aspartate and alanine aminotransferases, glutathione, lipid peroxidation, catalase and succinate dehydrogenase were assessed at 30, 60, 90 and 120 days from the beginning of the study. On analysis of these results it was found that both the 6C and 30C potencies of Arsenicum album provided protection against the effects of arsenic trioxide, with the 30C providing a slightly better level of protection than the 6C.

3. Bhattacharjee N, Pathak S, Khuda-Bukhsh AR. **Amelioration of Carcinogen-Induced Toxicity in Mice by Administration of a Potentized Homeopathic Drug, Natrum Sulphuricum 200.** *Evid Based Complement Alternat Med*, 2009, 6, 1, 65-75. Researchers at India's University of Kalyani, expanding on work that had been previously been done in area, designed a trial to discover whether or not the homeopathic product, Nat sulph 200C was able to protect mice against the effects of liver carcinogens, when compared to controls. Using various enzyme assays and other tests to determine the effects of the product, Nat sulph 200C was found to reduce genomic and other carcinogenic effects as well as liver tumour formation caused by hepatocarcinogens, and to also increase the in-vivo levels of glutathione.

4. Berchieri A Jr, et al. **Evaluation of isopathic treatment of Salmonella enteritidis in poultry.** *Homeopathy*, 2006, 95, 2, 94-7. 180 chickens were divided into 4 groups. 2 of these groups were given pre-treatment with placebo and 2 were given different pre-treatment with preparations of a homeopathic nosode made from an antibiotic resistant strain of Salmonella enterica (Enteritidis) at a 30X potency, over a 10 day period. On day 17 the chickens were challenged with a culture of the same species of Salmonella from which the nosode was made. Cloacal swabs taken twice daily from the chickens at this point revealed that the birds that received the nosode showed a reduction in the growth of the bacteria compared to those given placebo.

5. Biswas SJ, Khuda-Bukhsh AR. **Evaluation of protective potentials of a potentized homeopathic drug, Chelidonium majus, during azo dye induced hepatocarcinogenesis in mice.** *Indian Journal of Experimental Biolog*, 2004, 42, 7, 698-714. In this study, groups of mice were given substances that would normally be expected to induce the formation of liver cancer. At the same time, selected groups of these mice were given either homeopathic Chelidonium in 30C or 200C potencies or a placebo control. Both potencies of chelidonium provided a significant protective effect against the formation of liver cancers and favourably modulated some of the haematological markers normally associated with hepatotoxicity.

6. Biswas SJ, et al. **Efficacy of the potentized homeopathic drug, Carcinisin 200, fed alone and in combination with another drug, Chelidonium 200, in amelioration of p-dimethylaminoazobenzene-induced hepatocarcinogenesis in mice.** *J Altern Complement Med*, 2005, 11, 5, 839-54. Mice suffering from liver cancers were given either homeopathic Carcinisin 200C, or a combination of Carcinisin 200C and Chelidonium 200C over a period of 120 days, and the ability of these to ameliorate the cancers was compared to the effects of potentised alcohol over the same period of time. After the results were analysed it was found that both of the homeopathic remedies were effective in ameliorating these cancers. In addition, they were both individually effective in protecting against the development of any further hepatocarcinogenesis and the combination of the 2 homeopathic medicines were slightly more so.

7. Cazin JC, et al. **A Study of the Effect of Decimal and Centesimal Dilutions of Arsenic on the Retention and Mobilisation of Arsenic in the Rat.** *Human Toxicol*, 1987, 6, 315-320. Radioactively labelled arsenious anhydride was administered to 60 rats. The rats were then given various homeopathic potencies (10X to 30X and 5C to 15C) of Arsenicum album or a potentised water control. All of the potencies successfully increased the excretion rate of the radio-labelled arsenious anhydride when compared with the control, with the highest level of excretion being produced by the 14X and 7C potencies.

8. Chakrabarti J, Biswas SJ, Khuda-Bukhsh AR. **Cytogenetical Effects of Sonication in Mice and their Modulations by Actinomycin D and a Homeopathic drug, Arnica 30.** *Indian Journal of Experimental Biology*, 2001, 39, 12, 1235-42. Mice were exposed to ultrasonication (high frequency shaking) and assessed for the effects of the ultrasonication after the administration of either Arnica 30 or Actinomycin D. These interventions were assessed against controls for parameters such as chromosome aberrations, mitotic index, sperm head anomaly and micronucleated erythrocytes. In comparison the control mice, the mice that were given Arnica 30, had appreciably reduced effects from the ultrasonication, indicating that Arnica 30 can ameliorate the cellular and subcellular damage resulting from this form of physical trauma.

9. Chaudhuri S, Varshney JP. **Clinical management of babesiosis in dogs with homeopathic Crotalus horridus 200C.** *Homeopathy*, 2007, 96, 2, 90-4. Babesiosis is a protozoal disease suffered by dogs. It's associated with infestation by Babesia gibsoni and is normally transmitted by ticks. In this

clinical case comparison the effects of *Crotalus horridus* 200C on dogs suffering from this condition were compared with the effects of the standard pharmaceutical treatment, diminazine acetate. At 18 days after the medications were given results were assessed and on the clinical scores for the various symptoms produced by the dogs in response to the protozoa, it was found that *Crotalus horridus* 200C provided the same level of clinical recovery from the illness as did diminazine acetate.

10. Datta S, Mallick P, Bukhsh AR. **Efficacy of a potentized homeopathic drug (*Arsenicum album*-30) in reducing genotoxic effects produced by arsenic trioxide in mice: II. Comparative efficacy of an antibiotic, actinomycin D alone and in combination with either of two microdoses.** *Complement Ther Med*, 1999, 7, 3, 156-63. This study, carried out at the University of Kalyani in India's West Bengal, was part of an ongoing series of trials looking at the use of homeopathically potentised arsenic to protect against the effects of exposure to material doses of arsenic, this latter being a serious health issue in several parts of India and elsewhere. The efficacy of *Arsenicum album* 30C and 200C have already been demonstrated to be effective against the toxicity from arsenic in previous experiments and in this particular study, the influence of the DNA transcription inhibitor, actinomycin D, on the protective effects of the homeopathic medicines was assessed. Compared to controls it was found that the use of the actinomycin D did inhibit the protective effects of *Arsenicum album* 30C and 200C against arsenic toxicity.

11. Datta SS, Mallick PP, Rahman Khuda-Bukhsh AA. **Comparative efficacy of two microdoses of a potentized homeopathic drug, *Cadmium sulphoricum*, in reducing genotoxic effects produced by cadmium chloride in mice: a time course study.** *BMC Complement Altern Med*, 2001, 1:9 doi:10.1186/1472-6882-1-9. In a similar study to that described above, researchers again tested the hypothesis that the homeopathically potentised version of a potentially toxic substance could protect against the effects of the substance from which it's derived. In this case, the protective effects of homeopathic *Cadmium sulph* 30C and 200C were used in an attempt to control the genotoxic effects of cadmium in mice exposed to this element. When the results of this study were analysed it was found that the homeopathic medicine did provide a statistically significant protective action against the effects of cadmium.

12. Daurat V, Dorfman P, Bastide M. **Immunomodulatory activity of low doses of interferon alpha,beta in mice.** *Biomed Pharmacother*, 1988, 42, 3, 197-206. This was a placebo controlled study designed to ascertain what effects, if any, divided doses of interferon alpha,beta, potentised to 10X, had on specific immune responses of mice, in particular the cytotoxic activity of allospecific T-cells and natural killer (NK) cells. The authors of the study found that, compared to the controls, mice given Interferon alpha,beta 10X produced a statistically significant increase in all of the specific immune response variables measured.

13. Day C. **Stillbirth in Pigs.** *Veterinary Record*, 1984, 9114, 216. 20 sows were randomly assigned to receive either homeopathic *Caulophyllum* 30C or placebo, to determine if the former had any effect on reducing the number of stillbirths experienced by these sows. On analysis, it was found that the sows given *Caulophyllum* had a stillbirth rate of 11.5%, and those given placebo had a rate of 26%, showing quite clearly that the homeopathic medicine successfully reduced the rate of stillbirths.

14. de Paula Coelho C, et al. **Therapeutic and pathogenetic animal models for *Dolichos pruriens*.** *Homeopathy*, 2006, 95, 3, 136-43. This study was designed to determine the effect of various homeopathic potencies of *Dolichos pruriens* on artificially induced itch in laboratory rats, and also to determine if these potencies could elicit a proving effect in normal rats. In the first part of this study (performed blind) the rats with the induced itch were given ascending potencies of the remedy over a 30 day period and the results compared to placebo controls. It was found that all potencies of the

remedy provided a therapeutic effect against the induced itch. In the second part of the study, also performed blind, no proving effects were seen.

15. Dos Santos AL, et al. **In vivo study of the anti-inflammatory effect of Rhus toxicodendron.** *Homeopathy*, 2007, 96, 2, 95-101. This study was essentially designed to do 2 things; to determine which homeopathic potency of Rhus tox provides the most effective anti-inflammatory action, and to reconfirm the results of previous studies aimed at demonstrating any anti-inflammatory effect of Rhus tox. Of 6C, 12C, 30C and 200C potencies of this remedy, 6C was found to provide the highest level of activity, and, using an in-vivo inflammation model, researchers confirmed the anti-inflammatory activity of the remedy by interfering with inflammatory processes involving histamine, prostaglandins and other inflammatory mediators, when compared with controls.

16. Eizayaga FX, et al. **Platelet aggregation in portal hypertension and its modification by ultra-low doses of aspirin.** *Pathophysiol Haemost Thromb*, 2005, 34, 1, 29-34. Researchers in this controlled study attempted to determine the effects of potentised aspirin on rats exhibiting reduced platelet aggregation associated with portal hypertension. Given that material doses of aspirin are known to be associated with a reduction in platelet aggregation, one of the aims of the study was to confirm that the reverse of this would be the case with if potentised aspirin were used. The researchers did, in fact, confirm this in their results which showed that, compared to controls, Aspirin 14C normalised deficiencies in platelet aggregation in the rats involved in this study.

17. Endler PC, et al. **Pretreatment with Thyroxine 10<sup>-8</sup> Enhances a Curative Effect of Homeopathically prepared Thyroxine 10<sup>-13</sup> on Lowland Frogs.** *Forschende Komplementarmedizin Und Klassische Naturheilkunde*, 2003, 10, 137-42. In this randomised, placebo-controlled trial carried out simultaneously by 3 independent researchers, tadpoles were exposed to an equivalent of a 13X potency of thyroxine. This hormone, normally responsible for promoting metamorphosis, was found to inhibit this process when potentised into a homeopathic medicine.

18. Epstein OI, Pavlov IF, Shtark MB. **Improvement of Memory by Means of Ultra-Low Doses of Antibodies to S-100B Antigen.** *Evidence Based Complementary and Alternative Medicine*, 2006, 3, 4, 541-545. Antigen S-100B of nervous tissue affects the mechanisms of nervous system plasticity and memory. In this trial, 28 rats were given either a placebo, or Antigen S-100B, at a 6C potency to determine the effect of either on three learning behavioural models; inhibitory avoidance, choosing of bowls with sucrose, and feeding behaviour cessation after auditory signal. For all three tasks, parameters of reproduction of the learned skills improved after per oral administration of potentiated antibodies to S-100B antigen immediately after learning when compared to placebo.

19. Graunke H, et al **Treatment of lowland frogs from the spawn stage with homeopathically prepared thyroxin (10(-30)).** *Scientific World Journal*, 2007, 22, 7, 1697-702. In this project, performed at the Interuniversity College for Health and Development in Graz, Austria, lowland frog spawn were exposed to thyroxine potentised to 30C to determine the effect, if any, of this remedy of the development of the spawn into 2 and then 4 legged frogs, when compared to controls. It would be normal for the development of frog spawn to be accelerated by exposure to material levels of thyroxine. In this instance, exposure to 30C thyroxine produced a statistically significant reduction in the speed of development from spawn to 4 legged lowland frogs.

20. Guajardo-Bernal G, Searcy-Bernal R, Soto-Avila J. **Growth Promoting Effect of Sulphur 201C in Pigs.** *British Homoeopathic Journal*, January, 1996, 85, 15-16. In a blind, placebo-controlled trial, Sulphur 201C was given to pregnant sows every 10 days, and extending into the feeding period after birth. By day 30 the piglets fed by the sows given the active remedy exhibited a higher final weight,

mean total and daily weight gain, indicating that not only was the remedy effective, but that its effects were transmitted through the sows milk.

21. Herkovits J, Perez-Coll CS. **Could Potentized Microdoses of Cadmium change the Toxicological Effect of this Heavy Metal?** *Berlin Journal on Research in Homoeopathy*, Report from the 4<sup>th</sup> Giri Symposium, 1991, June, 1, 3, 171. Toad embryos were exposed to Cadmium in 4X, 8X and 10X potencies. Either immediately or 24 hours later, the embryos were exposed to a (normally lethal) solution equivalent to 1mg/l of Cadmium. Both on immediate and delayed exposure, the potencies of cadmium exerted a statistically significant protective effect against the actions of the cadmium solution.

22. Jonas WB, et al. **Can homeopathic treatment slow prostate cancer growth?** *Integr Cancer Ther*, 2006, 5, 4, 343-9. This US study examined the effects of the homeopathic remedies Thuja, Sabal, Conium and Carcinosin (made from the specific prostate cancer cell line used in this trial) in-vitro on prostate cancer cell cultures and in vivo on 100 rats, all of which were suffering from prostate cancer. A double blind randomised design was used for this latter part of the study. The rats were given all 4 homeopathic medicines on a sequential basis over a period of 5 weeks. The in-vitro part of the study, carried out over a period of 96 hours and assessed according to tumour cell viability and gene expression, showed that the cancer cell lines were unaffected by the homeopathic medicines. When the researchers assessed the results from the in vivo aspect of the study, it was found that, compared to the controls, the rats given the homeopathic medicines showed a 23% reduction in tumour incidence and a 38% reduction in the size of prostate tumours.

23. Kumar KH, et al. **Inhibition of chemically induced carcinogenesis by drugs used in homeopathic medicine.** *Asian Pac J Cancer Prev*, 2007, 8, 1, 98-102. In this study, carried out at the Amala Cancer Research Centre in India's Kerala State, rats and mice were treated for the development of liver tumours using homeopathic Hydrastis, Lycopodium, Phosphorus, Ruta or Thuja. Assessment was made on the basis of the development of tumours and their corresponding biochemical markers such as gamma-glutamyl transpeptidase, glutamate pyruvate transaminase, glutamate oxaloacetate transaminase and alkaline phosphatase in the serum and in liver. Of the 5 medicines tested, Ruta (in a 200C potency) and Phosphorous (in a 1M potency) provided the most benefit.

24. Kuzeff RM, Mecheva RP, Topashka-Ancheva MN. **Inhibition of (-)-propranolol hydrochloride by its enantiomer in white mice--a placebo-controlled randomized study.** *Forsch Komplementarmed Klass Naturheilkd*, 2004, 11, 1, 14-9. Researchers in this trial from Swinburne University of Technology in Melbourne examined the effects on toxicity from (S)-(-)-propranolol hydrochloride of a homeopathically prepared optical isomer version of the same substance. When used in mice prior to exposure to (S)-(-)-propranolol hydrochloride, a remedy made from (R)-(-)-propranolol hydrochloride was found to reduce the toxicity resulting from its isomer.

25. Labrecque G, Guilleminot J. **Effect of Bryonia on Experimental Arthritis in Rats.** *Berlin Journal of Research in Homoeopathy*, 1991,1, 3, 169, (Congress Report Poster). In this study, 35 male rats suffering from arthritis were treated with placebo or 4X, 4C or 9C potencies of homeopathic Bryonia for 15 days and assessed at various stages using grip strength body weight as assessment criteria. At the end of the treatment period, all of the Bryonia potencies had improved the condition when compared to placebo, with Bryonia 4C providing the best outcomes.

26. Lingg G, et al. **Treatment of Highland Frogs from the Two-legged stage with Homeopathically prepared Thyroxin ( $10^{-11}$  -  $10^{-21}$ ).** *Scientific World Journal*, 2008, 20, 8, 446-50. Researchers working in Austria conducted this study to determine the effects of thyroxine, homeopathically potentised to 11X and 21X, on the metamorphosis rates of highland frogs (*Rana temporaria*) when compared to controls.

The assessment of the effects of these remedies was done on the basis of the number of 2 legged tadpoles that develop into frogs with 4 legs over fixed periods of time. 90 animals in all acted as the subjects in this trial. As would be expected, given that thyroxine would stimulate development, thyroxine 11X and 21X, when compared to controls, were found to suppress the development of tadpoles into frogs over the observation period.

27. Macedo SB, et al. **Anti-inflammatory activity of Arnica montana 6cH: preclinical study in animals.** *Homeopathy*, 2004, 93, 2, 84-7. Researchers in this study evaluated the protective effect of Arnica 6C on the acute inflammatory effects in mice of carrageenan and the chronic inflammatory effects of Nystatin. Arnica was given prior to the induction of both forms of inflammation and it was found to provide a protective effect against Nystatin, but not carrageenan induced inflammation.

28. MacLaughlin BW, et al. **Effects of homeopathic preparations on human prostate cancer growth in cellular and animal models.** *Integr Cancer Ther*, 2006, 5, 4, 362-72. To confirm the effectiveness of the homeopathic treatment of prostate cancer, the researchers in this trial assessed the effects of the homeopathic medicines Sabal serrulata, Conium maculatum and Thuja occidentalis against PC-3 and DU-145 human prostate cancer cell cultures and against the growth of prostate tumours in mice. Sabal reduced the proliferation of the PC-3 cell line by 33% in 72 hours and the DU-145 cell line by 23% in 24 hours. Compared to controls, Sabal also had a statistically significant effect on the tumours suffered by mice. The homeopathic medicines Conium maculatum and Thuja occidentalis showed no beneficial effect on the proliferation of the cell lines or tumours observed in this study.

29. Mallick P, et al. **Ameliorating effect of microdoses of a potentized homeopathic drug, Arsenicum Album, on arsenic-induced toxicity in mice.** *BMC Complement Altern Med*, 2003, 3, 1, 7. In this study, Indian researchers using mice as a model for the management of human arsenic toxicity from drinking contaminated groundwater in rural India, assessed the toxicity from arsenic in mice pretreated with homeopathic Arsenicum album 30C and 200C. When compared to controls, the homeopathic remedies were found to reduce experimentally induced arsenic toxicity.

30. Mathie RT, et al. **Outcomes from homeopathic prescribing in veterinary practice: a prospective, research-targeted, pilot study.** *Homeopathy*, 2007, 96, 1, 27-34. In this cohort study, 8 veterinarians trained in homeopathy collected clinical case outcome data over a 6 month period for animals treated by them using homeopathic medicines. The records for 767 consecutive patients were collected and the results analysed via an owner- assessed 7-point scale which compared the condition before and after homeopathic treatment. These patients consisted of 547 dogs, 155 cats, 50 horses, 5 rabbits, 4 guinea-pigs, 2 birds, 2 goats, 1 cow, and 1 tortoise. The results from 539 cases were amenable to analysis and from these an improvement was seen in 79.8% of the animals, 6.1% of animals experienced a deterioration of their condition and 11.7% had no response to treatment.

31. Oberbaum M, Weissman Z, Bentwich Z. **Treatment of Murine SLE by Idiotypic Isotherapy.** *Berlin Journal on Research in Homoeopathy*, Congress Report, 1991, 1, 3, 168. Using the knowledge that Systemic Lupus Erythematosus (SLE) is induced by anti-DNA idiotype 16/6, homeopathic potencies were made of this material and it was administered to mice suffering from SLE. When compared to controls, 100% of the mice treated with the 30X potency of the idiotype had a positive response to the treatment.

32. Pathak S, et al. **Protective potentials of a potentized homeopathic drug, Lycopodium-30, in ameliorating azo dye induced hepatocarcinogenesis in mice.** *Mol Cell Biochem*, 2006, 285, 1-2, 121-31. The researchers in this study, which was carried out at the University of Kalyani in India's West

Bengal, used 210 mice in an experiment to determine the protective effect of Lycopodium 30C against the carcinogenic effects of p-dimethyl amino azo benzene and phenobarbital. When assessed using chromosomal aberrations as well as several morphological and biochemical parameters at 120 days from the beginning of the experiment, it was confirmed that Lycopodium 30C not only exhibited a protective effect, but also a restorative effect against the action of p-dimethyl amino azo benzene and phenobarbital.

33. Pedalino CMV, et al. **Effect of Atropa belladonna and Echinacea angustifolia in homeopathic dilution on experimental peritonitis.** *Homeopathy*, 2004, 93, 4, 193-198. 36 mice with experimentally induced peritonitis were given either Echinacea angustifolia 4X, a combination of belladonna and Echinacea in mixed homeopathic potencies, a combination of Echinacea in mixed potencies, 2 separate combinations of belladonna in mixed potencies, or a control substance, and their progress was monitored over time. Outcomes were measured using polymorphonuclear cell migration, mononuclear cell percentages, degenerate leucocyte proportions and phagocytosis characteristics. All of the homeopathic test substances produced positive outcomes with the belladonna and Echinacea potency combination providing the maximal increase in polymorphonuclear cell migration and phagocytosis.

34. Rajkumar R, et al. **Effect of a Homeopathic complex on oestrus induction and hormonal profile in anoestrus cows.** *Homeopathy*, 2006, 95, 3, 131-5. From a group of 12 anoestrus cows, 6 were selected to receive treatment with a combination of homeopathic medicines, given as 15 pills twice daily for 10 days. The remaining 6 cows acted as untreated controls. The treatment was effective in inducing oestrus in all of the 6 treated cows with an average of 1 conception per 1.83 services. In addition, the researchers found that oestradiol levels in the treated cows almost doubled from pre-treatment levels. Treatment results were seen at a mean interval of 27.5 $\pm$ 5.3 days.

35. Reis LS, et al. **Matricaria chamomilla CH12 decreases handling stress in Nelore calves.** *J Vet Sci*, 2006, 7, 2, 189-92. In this study, 60 Nelore calves were randomly assigned to receive either Chamomilla 12C or no Chamomilla 12C in their feed. Following this they were subjected to short periods of handling stress after which blood samples were taken to assess their cortisol levels. After the results from the 2 groups had been compared, it was found the calves given Chamomilla 12C had significantly lower levels of blood cortisol than those that did not, indicating that they were better able to deal with stress as a result of ingestion of the homeopathic medicine.

36. Ruiz-Vega G, et al. **An Evaluation of Coffea cruda effect on Rats.** *British Homeopathic Journal*, 2000, 89, 3, 122-126. This study tested the effects of Coffea 30C versus placebo on the sleep patterns of rats assessed using EEG readings. The results showed a statistically significant effect consistent with increased sleeping activity in those rats given the active medicine.

37. Ruiz-Vega G, et al. **Comparative Effect of Coffea cruda Potencies on Rats.** *Homeopathy*, 2002, 91, 2, 80-84. 30C and 200C potencies of *Coffea cruda* and caffeine were administered orally to rats, and EEG data from the parietal region recorded. When compared with control animals, *Coffea* 30C and 200C were associated with changes in EEG patterns that were consistent with increased sleep activity.

38. Ruiz-Vega G, et al. **A Kinetic Approach to Caffeine- Coffea cruda Interaction.** *Homeopathy*, 2003, 92, 1, 19-29. In this blinded and controlled study, rats were given caffeine and then Coffea 30C in an effort to determine what effects, if any, the Coffea 30C had on sleep characteristics. The homeopathic remedy was found to increase the intensity of sleep in the rats when compared with the effects of the control used.

39. Ruiz-Vega G, Poitevin B, Perez-Ordaz L. **Histamine at high dilution reduces spectral density in delta band in sleeping rats.** *Homeopathy*, 2005, 94, 2, 86-91. Histamine in material doses is a central nervous system stimulant operating via H1 receptors. The researchers in this study examined the effects of histamine in 30C homeopathic potency on the sleep patterns of rats. Using the spectral density of the delta band in the sleep electroencephalogram to measure the effects of the remedy, which is higher during periods on non-REM sleep, researchers found that histamine 30C produced an increase in wakefulness when compared to controls.

40. Sakakura CE, et al. **Influence of Homeopathic Treatment with Comfrey on Bone Density around Titanium Implants: A Digital Subtraction Radiography Study in Rats.** *Clinical Oral Implants Research*, 2008, 19, 6, 624-8. This controlled trial looked at populations of rats to discover what influence, if any, Symphytum 6C had on improving the density of bone around recent titanium implants. Implants were given to 2 groups of 24 rats; one group was given 10 drops of Symphytum 6C per day and the other was given a similar amount of a control substance. Animals were radiologically assessed for bone density around the implants at the beginning of the study period, and again at 7, 14 and 28 days. Radiographs taken at day 7 showed an increase in bone density over controls, although no statistically significant effect was seen for the radiographs taken on days 14 and 28.

41. Sato DYO, et al. **Histopathological and immunophenotyping studies on normal and sarcoma 180-bearing mice treated with a complex homeopathic medication.** *Homeopathy*, 2005, 94, 1, 26-32. 55 mice with experimentally induced sarcomas were given placebo or a homeopathic combination product, and observed daily over a period of 21 days. Compared to those receiving placebo, the mice being given the homeopathic combination showed a reduction in tumour size, an increased infiltration by lymphoid cells, granulation tissue and fibrosis surrounding the tumour, all of which are indicative of a positive response to the medicine.

42. Sukul A, Sinhabau SP, Sukul NC. **Reduction of Alcohol Induced Sleep time in albino mice by Potentised Nux vomica prepared with 90% Ethanol.** *British Homoeopathic Journal*, 1988, 88, 2, 58-61. In a controlled experiment to determine the effect of Nux vomica 30C on alcohol induced sleep, mice that had sleep induced via an injection of 25% ethanol were given a control substance or Nux vomica 30C. Nux vomica 30C prepared in 90% ethanol was effective in reducing sleep time.

43. Sukul NC, et al. **Strychnos nux vomica extract and its ultra high dilution reduce voluntary ethanol intake in rats.** *Journal of Alternative and Complementary Medicine*, 2001, 7, 2, 187-193. In an attempt to determine the effect of homeopathic Nux vomica on alcoholism, potentially alcoholic laboratory rats housed in the Visva-Bharati University in West Bengal, India, after being divided into 4 groups, were given a choice of drinking from bottles containing either 20% ethanol in water or plain water. The rats were given diluent, or strychnine, or nux vomica tincture, or nux vomica 30C. When compared to the control group (diluent only) both the nux vomica tincture and nux vomica 30C groups of rats showed a distinct aversion to the 20% ethanol drinking bottle.

44. Sukul NC, Ghosh S, Sinhababu SP. **Reduction in the number of infective Trichinella spiralis larvae in mice by use of homeopathic drugs.** *Forsch Komplementarmed Klass Naturheilkd*, 2005, 12, 4, 202-5. Trichinellosis, a disease caused by *Trichinella spiralis*, which occurs in humans and animals, was the subject of this trial. Mice infected with this organism were given Podophyllum as a homeopathic mother tincture, Cina 30C, Santonin 30C, or ethanol 30C as a control substance. After 120 days the mice were examined for the presence of the *T. spiralis* larvae and this was compared with the larval load before therapy. At 120 days the mice given Podophyllum had their larval load reduced by 61% when compared to the control, those given Santonin had a reduction of 81% and the mice given Cina had a reduction of 84%.

45. Varshney JP, Naresh R. **Evaluation of a homeopathic complex in the clinical management of udder diseases of riverine buffaloes.** *Homeopathy*, 2004, 93, 1, 17-20. Indian researchers involved in this trial developed a homeopathic complex against mastitis and tested it, without placebo controls, with 102 riverine buffaloes suffering from various levels of mastitis. The treatment was deemed to be 80 to 97% effective against the disease, depending on the severity of the condition.

46. Varshney JP, Naresh R. **Comparative efficacy of homeopathic and allopathic systems of medicine in the management of clinical mastitis of Indian dairy cows.** *Homeopathy*, 2005, 94, 2, 81-5. Bovine mastitis is a serious problem in India and for many Indian dairy farmers, standard veterinary treatment, because of its cost, is not a viable option. With this in mind, researchers treated 96 lactating dairy cattle suffering from mastitis using a homeopathic combination product (Group A). These were compared with a group of the same number of lactating dairy cattle suffering from mastitis that were treated with antibiotics (Group B). The treatment outcomes, duration and costs were then compared. Cattle from Group A had a successful treatment response rate of 86.6%, a mean time to recovery of 7.7 days and a total cost of (US) 47 cents. Cattle from Group B had a successful treatment response rate of 59.2%, a mean time to recovery of 4.5 days and a total cost of (US) \$3.28.

47. Varshney JP. **Clinical management of idiopathic epilepsy in dogs with homeopathic Belladonna 200C: a case series.** *Homeopathy*, 2007, 96, 1, 46-48. In this uncontrolled study, 10 dogs suffering from idiopathic epilepsy were given 3-4 drops of homeopathic Belladonna 200C during the seizure phase orally at 15min intervals until the seizure activity was reduced, and this was continued then four times daily. Four dogs with head shaking syndrome in addition to seizures were given an additional Cocculus 6C, 3-4 drops orally weekly for 3 months. As a result of this therapy, the numbers of fits reduced to 2-3 during first 2 weeks post-therapy and then became occasional in next 2 weeks. With continuation of Belladonna therapy, no fits were observed during 2-7 months follow-up. In two cases seizures reappeared within 15-25 days of cessation of therapy. Belladonna therapy was resumed and seizure control was again achieved. Owners were advised to continue the therapy at least twice daily until no fits occurred for at least 2 months.

48. Varshney JP, Chaudhuri S. **Atrial paroxysmal tachycardia in dogs and its management with homeopathic Digitalis--two case reports.** *Homeopathy*, 2007, 96, 4, 270-2. Homeopathically prepared Digitalis 6C is a common prescription for those suffering from atrial tachycardia. This paper reports on the effects of Digitalis 6C, given at the Division of Medicine of the Indian Veterinary Research Institute in Izatnagar in India, to a Labrador dog and a German Shepherd dog, both of which were suffering from atrial paroxysmal tachycardia. Both dogs were given 4 drops of the medicine 4 times daily and their ECGs were assessed after 7 days of continuous treatment. At this point it was found that the heart rates of both dogs was stabilised and synchronized, with atrial and ventricular electrical activity appearing to be functioning normally.

49. Viriato EP, et al. **Study of high dilutions of copaiba oil on inflammatory process.** *Int J High Dilution Res*, 2009, 8, 26, 9-149. This trial was a collaborative effort by researchers from several Brazilian universities and was designed to test the hypothesis that Copaiba oil, homeopathically potentised to 30C from either mother tincture or triturate, is as effective as Indomethacin in reducing inflammation induced by carrageenan, and also to determine if it was capable of influencing tissue granulation when compared to conventional treatment. The 30C potency from mother tincture and triturate both reduced inflammation by up to 73%, and Indomethacin reduced inflammation by 55%. In addition, 6C potencies of Copaiba oil were able to produce a 48% inhibition of granulation, compared to a 57% reduction from the use of Dexamethasone.

50. Williamson AV, et al. **A Trial of Sepia 200**. *British Homeopathic Journal*, 1995, 84, 1, 14-20. Using a randomised placebo control method, Sepia 200C was assessed for its ability to increase reproductive performance in a herd of Friesian cross dairy cows. Sepia increased all parameters measured.

51. Marzotto M, et al. **Effects of Ignatia amara in mouse behavioural models**. *Homeopathy*, 2012, 101, 1, 57-67. This University of Verona study adds to previous work done on anxiety in mice and in this case used various potencies of homeopathically prepared Ignatia amara in potentially stressful experimental scenarios. Groups of 8 mice were given a negative (solvent) or positive control (diazepam) substance or Ignatia 4C, 5C, 7C, 9C and 30C and subjected to 5 repetitions of the light-dark test or open-field test in a randomised and blinded manner. Mice were then assessed for their levels of anxiety and capacity for locomotion. Compared to controls a statistically significant association was seen between the Ignatia potencies (particularly the 9C potency) and a reduction in anxiety, without a significant impact on locomotion.

52. Bellavite P, et al. **Testing homeopathy in mouse emotional response models: pooled data analysis of two series of studies**. *Evid Based Complement Alternat Med*, 2012;2012:954374. In this data analysis carried out by researchers from the Department of Pathology and Diagnostics at Italy's University of Verona, an assessment was made of previous work using homeopathically prepared Gelsemium against anxiety in mice, and comparing various homeopathic potencies of this material with solvent (negative) controls and diazepam (positive) controls. An analysis of this pooled data confirmed the original findings of both studies of a statistically significant association between homeopathically prepared Gelsemium and a reduction in the anxiety experienced by mice when confronted with a potentially anxiety producing situation.

53. Neumann S, et al. **Effectiveness of the homeopathic preparation Zeel compared with Carprofen in dogs with osteoarthritis**. *J Am Anim Hosp Assoc*, 2011, 47, 1, 12-20. Workers from the Institute of Veterinary Medicine in Germany's University of Goettingen carried out this study to determine what effects, if any, could be produced by a combination of homeopathically prepared materials to relieve the effects of osteoarthritis in dogs, compared the effects of Carprofen, a commonly used non-steroidal anti-inflammatory drug. 68 dogs suffering from clinically determined osteoarthritis were assigned to receive either the homeopathic combination, or Carprofen for 56 days. Assessments were made by treating veterinarians and owners at baseline, at 28 days and 56 days, of lameness, stiffness of movements, and pain on palpation. After accumulating and analysing the results it was shown that the interventions were equal in their effectiveness.

54. Hielm-Björkman A, et al. **Evaluating complementary therapies for canine osteoarthritis--Part II: a homeopathic combination preparation (Zeel)**. *Evid Based Complement Alternat Med*, 2009, 6, 4, 465-71. In an extension to previous work done in this area, researchers at Finland's University of Helsinki used a randomized, double-controlled and double-blinded clinical trial model to compare the effects of a combination of homeopathically prepared materials with that of placebo for the relief of the symptoms of osteoarthritis suffered by dogs. 44 dogs were randomly assigned to receive either the homeopathic combination or one of two control substances for 8 weeks. Regular observations made of mobility, force plate variables, chronic pain index and pain and locomotion via visual analogue scales (VASs) as well as the intake of extra non-steroidal anti-inflammatory drugs. On analysis of the results, a significant association was found between the homeopathic combination and a reduction in 4 of the 6 variables measured, and these were the variables predominantly associated with chronic orthopaedic pain.

55. Bellavite P, et al. **Homeopathic Doses of Gelsemium sempervirens Improve the Behaviour of Mice in Response to Novel Environments**. *Evid Based Complement Alternat Med*, 2011,

2011:362517. In yet more interesting work on Gelsemium, researchers from the Department of Morphological Biomedical Sciences at the University of Verona in Italy, build on previous studies to further confirm the role of homeopathically prepared Gelsemium on anxiety. Once again, mice were exposed to potentially anxiety-producing situations such as the light-dark test and open field test after being given various homeopathically prepared 5C, 7C and 30C homeopathic potencies of Gelsemium, or a positive (Diazepam) or negative (solvent) control substance. When compared to the controls, the application of all of the Gelsemium potencies were associated with an improvement in some aspect of anxiety as produced by the test environments.

56. Sunila ES, et al. **Effect of homeopathic medicines on transplanted tumours in mice.** *Asian Pac J Cancer Prev*, 2007, 8, 3, 390-4. Indian researchers operating at the Amala Cancer Research Centre in Kerala State added to previous work done in this area by investigating the antitumour and antimetastatic capacity of 3 different homeopathically prepared substances on mice, when compared to controls. Mice suffering from specific tumours were exposed to the homeopathic preparations *Ruta graveolens* 200C, *Hydrastis canadensis* 200C, *Hydrastis canadensis* 1M, *Thuja* 1M and *Lycopodium* 1M. When compared to controls it was found that the 200C potencies were associated with an increase in the lifespan of tumour bearing mice by up to 69.4%. A strong association was also found between the use of these remedies and a reduction in solid tumour volume of up to 95.8% after 31 days of treatment. The use of *Hydrastis* 1M was associated with a complete disappearance of tumours in 60% of the mice and the use of *Thuja* 1M and *Lycopodium* 1M were also associated with significant reductions in metastatic activity.

57. Klocke P, et al. **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, 2, 90-8. Mastitis in organically farmed dairy cows is a major issue since, by definition, organically farmed animals cannot be given antibiotics. To deal with this, Swiss scientists from the Research Institute of Organic Agriculture in Frick sought to come up with a solution using a herd specific homeopathic mixture in cows affected by mastitis. 102 cows were randomly assigned to receive teat sealing via Orbeseal, a sterile, non-antibiotic inflammatory infusion in the form of a viscous paste, the homeopathic mixture or no treatment. All cows were checked for clinical mastitis and somatic cell count for the first 100 days post-calving (milk from cows infected with mastitis generally have higher total bacteria counts and somatic cell counts than milk from uninfected cows). On analysis it was shown that the herd-specific homeopathic was effective in increasing the number of animals with normal milk secretion compared to untreated controls.

58. Gazim ZC, et al. **Efficiency of tick biotherapeutic on the control of infestation by *Rhipicephalus (Boophilus) microplus* in Dutch dairy cows.** *Int J High Dilution Res*, 2010; 9, 33, 156-164. This Brazilian work was done to investigate alternatives to conventional pesticides for the management of the tick *Rhipicephalus (Boophilus)* in cattle. To do this, 34 Dutch dairy cows infested with *Rhipicephalus (Boophilus) microplus* were given either mineral salt alone or mineral salt impregnated with a 12C homeopathic preparation of the organism daily for 6 months, then a 30C preparation every second day for a further 22 months. At this point, engorged female ticks were collected from both groups, counted and weighed. In-vitro tests were carried out to assess mass of ticks; egg mass; egg-hatching rate; and reproductive efficiency. After comparing these results from both groups it was shown that the use of the homeopathically prepared tick was associated with a significant decrease in the mass of engorged females, deposition and hatching rate of eggs, and a decrease of the reproductive efficiency of these ticks.

59. Vaz AF, et al. **Anxiolytic effect of the homeopathic complex Tepeex.** *Int J High Dilution Research*, 2009 8, 28, 91-99. This trial, carried out at the Universidade Federal do Amapá in Brazil,

was designed to test the effects of a homeopathic combination product known as Tepeex, on anxiety and depression in rats, when compared with the effects of a negative control (water) and a positive controls (diazepam, amfepramone chloride). The study were carried out over 30 days using a maze test, swimming test, open field test and Rotarod test as the primary means of assessment. At the end of the study, an analysis of the results was conducted and it was found that the use of the homeopathic combination product was associated with an anxiolytic effect. The combination showed no evidence of an inhibition of motor coordination.

60. de Araújo FR, et al **Effect of Mercurius solubilis on the bacteriological response in the alveolitis process in rats.** *Homeopath*, 2009, 98, 3, 160-4. In more Brazilian research into homeopathy, scientists from the Microbiology Division of the Federal University of Pernambuco embarked on a randomised and blinded study to assess the bacteriological response in rats with alveolitis treated with homeopathically prepared mercury (Merc sol 12C). Rats suffering from bacterial alveolitis were exposed to Merc sol 12C, water or ethanol and observed at days 6, 15 and 21 from baseline. After the results were collected and analysed it was found that the rats exposed to Merc sol 12C had bacterial counts that were the closest to what could normally be expected to be seen in healthy rats.

61. Rosas-Landa V, Garcia M, Rodriguez R. **Evidence for Homeopathic Vaccination?** *Boletín Mexicano de Homeopatía*, 1997, 30, 5-10. This Mexican research describes the process and outcomes of two pilot studies done to evaluate the immunological response in rabbits to homeopathic preparations made from an oral mycobacterial antigen. In the first study, 1C to 30C homeopathic preparations of the antigen were given to rabbits in their drinking water for one month and assessed against positive and negative controls. All of the homeopathic potencies were associated with the production by the rabbits of antimycobacterial antibody. In the second trial, a tuberculin reaction was assessed after oral administration of the 30C homeopathic potency, and this compared to the reaction to the conventional inoculation. The reaction to the homeopathic potency was comparable to that caused by the conventional inoculate.

62. Jonas WB, Dillner DK. **Protection of Mice from Tularemia Infection with Ultra-Low, Serial Agitated Dilutions Prepared from *Francisella tularensis*-Infected Tissue.** *Journal of Scientific Exploration*, 2000, 14, 1, 35–52. In this study, researchers investigated the possibility that homeopathically prepared potencies made from the tissues from mice infected with *Francisella tularensis* (nosode), the organism associated with tularaemia, had the capacity to protect uninfected mice from this pathogen. Using 15 repetitions, mice were pretreated with various potencies of the nosode or a control substance for 1 month and then exposed to the pathogen and assessments made of the extent of the response to it. On analysis, it was found that all potencies of the nosode were associated with protection against the pathogen and it was also noted that two of the potencies were associated with the production of anti-tularemia IgG antibody during the pretreatment stage of the trial.

63. Oberholzer HM, Pretorius E. **Investigating lung remodelling in Modul8 treated BALB/c asthmatic animals.** *Micron*, 2009, 40, 8, 775-82. This trial was carried out at the faculty of Health Sciences in South Africa's University of Pretoria and was performed to investigate what effect, if any, a specific homeopathic combination product (Module8) had against hydrocortisone, compared to a control, in mice suffering from atopic asthma. Assessment was made via the analysis of tissue structures and the numbers of eosinophils found on bronchial lavage before and after treatment. On analysis of the results noted at the end of the trial, the use of hydrocortisone and the homeopathic formula were both associated with a significant reduction in tissue structure changes and eosinophil count.

64. Bhattacharjee N, Pathak S, Khuda-Bukhsh AR. **Amelioration of carcinogen-induced toxicity in mice by administration of a potentized homeopathic drug, Natrum sulphuricum 200.** *Evid Based Complement Alternat Med*, 2009, 6, 1, 65-75. In this study, scientists from the University of Kalyani in India examined the possibility of a protective effect from the homeopathically prepared remedy Nat sulph 200C, in mice with liver damage induced by P-dimethylaminoazobenzene and Phenobarbital. To do this, mice affected by these hepatotoxic agents were given Nat sulph 200 or various control substances and then assessed at days 7, 15, 30, 60, 90 and 120 for cytogenetic changes such as chromosomal aberrations, micronuclei, mitotic index, sperm head anomaly liver enzymes and glutathione assay. Over these observational periods it was shown that the use of Nat sulph 200C was associated with a reduced impact on all of the parameters measured.

65. Welles SU, et al. **Pretreatment with thyroxin 10(-8) and the effect of homeopathically prepared thyroxin 10(-30) on highland frogs--a multi-researcher study.** *Forsch Komplementmed*, 2007, 14, 6, 353-7. This builds on previous work done in this area that showed that homeopathically potentised thyroxin slowed the rate of metamorphosis in highland frogs. In this study, tadpoles were pretreated with a 10 to the minus 8 molar solution of Thyroxin, which should be expected to stimulate metamorphosis. They were then exposed to either a homeopathically prepared Thyroxin 30X or a negative control. Four sets of these experiments were carried out, each by a different researcher. On analysis of the results it was found that the tadpoles that had been exposed to the Thyroxin 30X had a slower rate of metamorphosis than controls, which is consistent with previous findings and does not support the notion that pretreatment with a 10 to the minus 8 molar solution of Thyroxine alters this outcome.

66. Sukul A, et al. **Altered solution structure of alcoholic medium of potentized Nux vomica underlies its antialcoholic effect.** *British Homeopathic Journal*, 2000, 89, 2, 73-7. Researchers from the Department of Zoology at Visva-Bharati University in West Bengal, India explored the notion that homeopathically prepared Nux vomica, in 30C, 200C and 1M homeopathic potencies, could accelerate the recovery from alcohol intoxication. This adds to previous work done in this area and was carried out using a controlled crossover trial design on mice that were exposed to ethanol and then given Nux vomica 30C, 200C, 1M or one of three control substances. When compared to the controls, it was shown that the use all of the Nux vomica potencies was associated with a statistically significant reduction in ethanol intoxication.

67. Silva NL, et al. **Use of biotherapeutic in the control of natural infestation by Boophilus microplus: pilot study.** *Int J High Dilution Research*, 2008, 7, 22, 36-38. Scientists at the Agronomic Institute of Parana in Brazil conducted this research to assess the effects of a combination of 12C homeopathically potentised parasites on infestation in cattle by the cattle tick *Boophilus microplus*. This mixture included a 12C homeopathic potency of *Boophilus microplus*. 27 tick infested cattle were randomly assigned to receive the homeopathic mixture, or a standard veterinary drug-based dip used for this condition, or were given no treatment. The cattle were assessed for ticks at baseline and then every 14 days. On analysis of these assessments it was found that the homeopathically potentised mixture provided the same level of relief from ticks as the standard drug-based dip.

68. Rocha MPS, et al. **Behavior of rats treated with Rhus toxicodendron 200cH.** *Int J High Dilution Research*, 2008, 7, 22, 3-6. The object of this exercise was to determine the effects of homeopathically prepared Rhus tox 200C and diazepam, on hyperactivity and hypoactivity in mice in open field tests, compared to controls. Mice were classified into hyperactive or hypoactive groups and assigned to receive Rhus tox 200C, diazepam or a water control, and their activities in an open field environment observed before and after treatment. Upon analysis it was found that Rhus tox 200C and diazepam

both produced statistically significant reductions in hyperactivity when compared to controls. None of the interventions produced a significant effect on hypoactivity.

69. Fontes OL, et al. **A Study Comparing Different Doses of Arsenicum album 6CH on Rats Intoxicated with Arsenic.** *Int J High Dilution Research*, 2006, 5, 17, 9-13. This study was carried out with the intention of determining what effect, if any, the dose volume of homeopathically prepared Arsenicum album 6C has on the capacity of rats to eliminate arsenic in the form of sodium arseniate. Oral doses of 2, 5 and 10 drops of Arsenicum 6C were given to arsenic intoxicated rats daily for 30 days and their urine was measured daily for arsenic via atomic absorption spectrophotometry. On assessment, all of the three different drop volumes were equally effective at causing an increased elimination of arsenic.

70. Banerjee P, et al. **Evidences of Protective Potentials of Microdoses of Ultra-high Diluted Arsenic Trioxide in Mice Receiving Repeated Injections of Arsenic Trioxide.** *Evid Based Complement Alternat Med*, 2011: 391752. Published online 2011 February 14. This study was undertaken to determine if Arsenicum Album 200C has hepatoprotective effect in mice subjected to repeated exposure to arsenic trioxide. Arsenic intoxicated mice were divided into: (i) those receiving Arsenicum Album-200C daily, (ii) those receiving the same dose of diluted and succussed alcohol (Alc 200C) and (iii) another group receiving neither drug nor Alc 200C. Two other control groups were also maintained: one fed a normal diet only and the other receiving normal diet and Alc-200C. Toxicity biomarkers such as aspartate and alanine aminotransferases, glutathione reductase, catalase, succinate dehydrogenase, superoxide dismutase and reduced glutathione contents were periodically assayed'. Additionally, electron microscopic studies and gelatine zymography for matrix metalloproteinases of liver tissues were made at day 90 and 120. Blood glucose, haemoglobin, oestradiol and testosterone levels were also assessed. When compared to controls, the mice that were fed Arsenicum Album-200C showed less evidence of chronic arsenic exposure.

71. Bellavite P, et al. **Homeopathic Doses of Gelsemium sempervirens Improve the Behavior of Mice in Response to Novel Environments.** *Evid Based Complement Alternat Med*, 2011: 362517. Published online 2011 February 15. Researchers in this study looked at the effects of 5C, 7C and 30C homeopathic potencies of Gelsemium in comparison to the effects of diazepam on the behavioural characteristics of mice when challenged with potentially anxiety-producing situations such as exposure to new environments or environments where cover was limited. Using measurements from these parameters, it was determined that the use of homeopathic Gelsemium was associated with an increase in exploratory behaviour and a reduction in the fear of new environments.

72. Zacharias F, et al. **Effect of homeopathic medicines on helminth parasitism and resistance of Haemonchus contortus infected sheep.** *Homeopathy*, 2008, 97, 3, 145-51. This Brazilian study reports the findings of a group investigating the effects of 3 homeopathically potentised substances on sheep infected with the Barber's Pole worm (*Haemonchus contortus*), a pathogenic nematode common to sheep. 20 sheep were randomly assigned to receive Doramectin, a commonly used antihelminthic; homeopathically prepared Ferrum phos, Arsenicum album and Calc carb; or no treatment. Faecal and blood samples were taken 18, 38 and 68 days from baseline and these checked for evidence of the parasite. On assessment of these results an association was found between the use of the homeopathic preparations and a reduction in the presence of the parasites, leading to an improvement in vital function and weight gain. In addition, the homeopathic option was also found to be more economical than the standard antihelminthic method of management.

73. Camerlink I, et al. **Homeopathy as replacement to antibiotics in the case of *Escherichia coli* diarrhoea in neonatal piglets.** *Homeopathy*, 2010, 99, 1, 57-62. This work, performed by a team

primarily from the Wageningen University in The Netherlands, concerns the design and outcomes of the homeopathic treatment of piglets suffering from diarrhoea associated with *E. coli*. 52 sows in their last month of gestation were given either placebo or a homeopathically potentised preparation of *E. coli* twice weekly for that month. These sows subsequently gave birth to 525 piglets; 265 from the placebo sow group and 260 from the homeopathic *E. coli* group and all were monitored for *E. coli* diarrhoea. On analysis of the results from the observations made of both groups, it was found that the piglets from the placebo group had a diarrhoeal incidence that was 6 times higher than the piglets from the homeopathic group.

74. Magnani P, et al, **Dose-effect study of Gelsemium sempervirens in high dilutions on anxiety-related responses in mice.** *Psychopharmacology (Berl)*, 2010, 210, 4, 533-45. Researchers from the University of Verona in Italy carried out this trial on mice to determine whether or not any of five homeopathically potentised preparations of Gelsemium could influence the generation of anxiety. Mice were exposed to Gelsemium 4C, 5C, 7C, 9C and 30C, a positive control substance (Buspirone) or a negative control (the solvent used to produce the Gelsemium potencies) and then challenged with potentially anxiety generating situations, these being open-field tests and light-dark tests. While Gelsemium had little effect on the mice in the open-field test, it did produce a statistically significant reduction in anxiety associated with the light-dark test that was comparable to the effect produced by Buspirone, particularly the Gelsemium preparations potentised to 5C, 9C and 30C.

75. Zubedat S, et al. **Plant-derived nanoparticle treatment with Cocculus 30c ameliorates attention and motor abilities in sleep-deprived rats.** *Neuroscience*, 2013, 3, 253, 1-8. This was a 4-arm trial with randomisation and double-blinding of verum and placebo treatments designed to test the effects of homeopathically prepared Cocculus 30C on the outcomes of sleep deprivation in rats. Sleep deprivation was induced for 48 hours and its behavioural and hormonal effects monitored at 6 hours, 12 hours, 24 hours, and 14 days post sleep deprivation. Cocculus 30C was administered orally every three hours starting immediately after baseline tests and for a period of 24 hours. On day 14, blood samples were taken and serum levels of corticosterone, testosterone, serotonin and leptin were assayed. It was found that when compared to placebo, Cocculus 30C improved all of the sleep deprivation factors measured.

76. Keirn AP, et al. **The Multicomponent Medication Lymphomyosot Improves the Outcome of Experimental Lymphedema.** *Lymphatic Research and Biology*, 2013, 11, 2, 81-92. In this study from the Michigan Technological University in Michigan, USA, researchers sought to evaluate the ability of the homeopathic combination product, Lymphomyosot, to treat tissue swelling and promote lymphangiogenesis in experimental models of murine lymphoedema. To do this, experimental models of mouse lymphoedema were injected with varied amounts of Lymphomyosot or saline as a control. Measurements of tail swelling and wound closure were taken and compared amongst the groups. Three separate groups of mice were analysed for lymphatic capillary migration, lymphatic vessel regeneration, and macrophage recruitment. On analysis of the results it was found that Lymphomyosot was associated with significantly reduced swelling and an increased the rate of surgical wound closure.

77. Merlini LS, et al. **Effects of a homeopathic complex on the performance and cortisol levels in Nile tilapia (*Oreochromis niloticus*).** *Homeopathy*, 2014, 103, 2, 139-42. This work was performed in an effort to determine what effects, if any, a homeopathic combination product (Homeopatila 100) had on the cortisol levels of farmed fish (Nile tilapia) suffering from stress. 60 fish were randomly distributed into six water tanks and received one of two treatments: 30 animals received a negative control substance and 30 animals received the homeopathic complex. Blood levels of cortisol were assessed on days 1, 30 and 60. At the end of the experiment it was found that the fish receiving the

homeopathic complex had significantly lower circulating cortisol level (17.96 ng/mL  $\pm$  0.95) than the control group (38.68 ng/mL  $\pm$  1.21).

78. Sarkar A, et al. **Anti-rheumatoid and anti-oxidant activity of homeopathic *Guaiacum officinale* in an animal model.** *Homeopathy*, 2014, 103, 2, 133-8. Guaiacum has been used for generations in homeopathy both constitutionally and specifically for musculoskeletal disorders. The aim of this study was to evaluate the anti-rheumatic and anti-oxidant activity of homeopathic preparations of *Guaiacum officinale* on rats. To do this, a group of rats suffering from rheumatoid arthritis were divided into 6 groups and received Sham control, Arthritis control, Standard treatment (indomethacin), *Guaiacum* mother tincture, *Guaiacum* 30C or *Guaiacum* 200C. These groups were given these interventions for 5 days and anti-rheumatic activity was examined through physical, urinary, serum parameters. These included body weight, ankle and knee diameter, urinary parameters (hydroxyproline), glucosamine, calcium, creatinine, phosphate, serum acid phosphatase, alkaline phosphatase, gamma-glutamyl transferase, lipid peroxidation, glutathione, superoxide dismutase, catalase, serum GGT and serum interleukins. When compared to the controls, treatment with all of the 3 forms of *Guaiacum* was associated with a normalisation of these parameters.

79. Bellavite P, et al. **Mice behavioural models with pooled data analysis of *Gelsemium* studies and new findings about *Ignatia* and *Aconitum*.** *Int J High Dilution Res*, 2011, 10, 36, 198-200. Proceedings of the XXV GIRI Symposium and VIII CBFH; 2011, Sep 04-07; Foz do Iguaçu (Brazil) 198. In a follow-up to previous work done in this area, researchers from the University of Verona in Italy investigated the anxiolytic properties of homeopathically prepared materials on mice. Using a randomized, blinded and controlled protocol, mice were assigned to be given several one of several homeopathic potencies of *Gelsemium*, *Aconite*, *Ignatia* or material doses of positive controls (diazepam or buspirone) or a negative control (ethanol and water). They were exposed to stressful environmental situations (open field test or light-dark tests) and assessed for anxiety in relation to these environments. Compared to the controls, cumulative analysis of the results demonstrated a highly significant effect of *Gelsemium* 5C and 30C in both tests and *Ignatia* 9C in the Light-Dark test. The results indicate an anxiolytic rather than a sedative effect.

80. Fontes OL, et al. **The problem of dose in homeopathy: evaluation of the effect of high dilutions of *Arsenicum album* 30cH on rats intoxicated with arsenic.** *Int J High Dilution Res*, 2011, 10, 36, 218-219. Proceedings of the XXV GIRI Symposium and VIII CBFH; 2011, Sep 04-07; Foz do Iguaçu (Brazil) 218. A significant amount of work has been done to confirm the notion that homeopathically prepared arsenic increases the rate of arsenic excretion in animals. This study sought to determine if the volume of homeopathically prepared arsenic had any effect upon this excretion, Brazilian researchers gave rats that were intoxicated with arsenic undiluted homeopathically prepared *Arsenicum album* 30C or a 1% solution of the same material. Blood and urine from the rats was assayed via atomic absorption spectrophotometry for arsenic before, during and after treatment, and the results compared to samples from untreated intoxicated and unintoxicated controls. The rats treated with undiluted *Arsenicum* 30C and 1% *Arsenicum* 30C eliminated significant amounts of arsenic through urine when compared to the control groups. The group treated with undiluted *Arsenicum* 30C eliminated significantly higher amounts of arsenic than the group treated with the same medicine in 1% solution.

81. Haine GB, et al. **Assessment of homeopathic medicine *Aconitum napellus* in the treatment of anxiety in an animal model.** *Int J High Dilution Res*, 2012, 11, 38, 33-42. *Aconite* has a long history of use in homeopathy for people experiencing anxiety. This Brazilian research sought to test the effects of this medicine in mice. 48 mice were randomly divided into six groups and given the following treatments 1) positive control (diazepam); 2) negative control (saline); 3) *Aconite* 6C; 4) *Aconite* 12C);

5) Aconite 30C or 6) 30% ethanol. Behavioral effects were blindly and randomly assessed in elevated plus maze (EPM) and open field test. The results showed that mice given Aconite 12C and 30C exhibited possible anxiolytic effects on the central nervous system since they increased the number of entries in the EPM open arms (12C and 30C) and the permanence time in the EPM open arms (30C only).

82. Falkowski GJS, et al, **Causticum hahnemanni, Conium maculatum and Lycopodium clavatum highly diluted medications decreases parasitemia in mice infected by Trypanosoma cruzi.** *Int J High Dilution Res*, 2012, 11, 40, 198-199. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). This Brazilian research looked into the effect of homeopathically prepared Causticum 13C, Conium maculatum 13C and Lycopodium clavatum 13C, on mice infected with T. cruzi, the organism associated with Chagas' disease in humans. In a blind randomized controlled trial design, mice were given one of the 3 medicines being tested, or a placebo, to test the preventative capacity of these substances. Parasitaemia and clinical parameters were assessed daily. When compared to the control, all of the medicines tested provided a significant level of protection, with the best results seen in the mice given Lycopodium.

83. Chakraborty I, Sukul A, Sukul NC. **Nux Vomica 200 CH reduced acute hypnotic effect of alcohol in young toads.** *Int J High Dilution Res*, 2012, 11, 40, 208-208. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). Previous research has shown that homeopathically prepared Nux vomica has the capacity to correct ailments produced by alcohol. In this Indian study, a replication of this work was performed. Using 10 repetitions of the same experiment, young toads given either Nux vomica 200C or a control substance, and then exposed to sufficient quantities of ethanol to cause them to become unbalanced. They were then assessed for their capacity to regain that balance and it was shown that, compared to the control, Nux vomica 200C was associated with a significant reduction in ethanol related imbalance.

84. Sukul A, Sukul NM. **Effect of Rhus tox and Causticum on rat adjuvant arthritis.** *Int J High Dilution Res*, 2013, 12, 44, 135-136. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 135. Indian researchers set out to confirm the effects of homeopathically prepared Causticum 30C and Rhus tox 30C on rats suffering from musculoskeletal inflammation. Rats were given the homeopathic medication or controls for 18 days and assessed before and after treatment for inflammatory swelling, locomotor capacity and open field activity. An analysis was made of the collected observational data and it showed that when compared to controls, the rats given the homeopathically prepared materials had significant improvement in all of the three parameters measured.

85. da Silva DM, et al. **Oral, topical, and inhalation of Calcarea carbonica derivative complex (M8) to treat inflammatory mammary carcinoma in dogs.** *Int J High Dilution Res*, 2012, 11, 40, 166-167. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy), This reports on an investigation carried out at the Federal University of Paraná in Brazil using a combination of homeopathically prepared materials (M8) with dogs suffering from inflammatory mammary carcinoma (IMC). 3 dogs diagnosed with this condition and with an average age of 10 years were treated with M8 orally, topically or via inhalation or with oral pyroxican. Thoracic radiographs showed pulmonary metastasis in all dogs. After 7 days of treatment all of the dogs showed clinical improvement, specifically a reduction of mammary gland inflammation, decreased pain sensitivity, and owner-reported quality of life. One dog had 8 months of complete remission, and the other two died 1 and 2 month after initial treatment. However none of the dogs had progressive pulmonary disease, showed by radiographic examination, which would have been a normal sequelae to the IMCs.

86. Aleixo DL, et al. **Diluted benznidazole decreases side effects in animals infected by *Trypanosoma cruzi* and treated with benznidazole in ponderal dose.** *Int J High Dilution Res*, 2012, 11, 40, 170-171. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). The US Centers for Disease Control and Prevention estimates that at any one time there are approximately 8 million people suffering from Chaga's Disease in Mexico, Central and South America. The disease is normally treated with benznidazole but this therapy is associated with significant side effects. Brazilian scientists set out to investigate the possibility of using homeopathically prepared benznidazole as a means of dealing with these side effects. To do this mice infected with *Trypanosoma cruzi*, the organism thought to cause Chaga's disease, were treated with a benznidazole, benznidazole 30X, benznidazole plus benznidazole 30X, benznidazole plus benznidazole 30X started 4 days after beginning benznidazole treatment, or a control substance. The mice were then assessed for body weight, water and food intake, amount of faeces, temperature, aspect of the fur, mortality and survival time, and parasitemia. The results showed that when compared to the control and the mice treated with benznidazole alone, those mice treated with benznidazole plus either concurrent benznidazole 30X or benznidazole 30X after 4 days, all showed a statistically significant reduction in side effects. The mice given material doses of benznidazole had a reduction in their parasitaemia and those given benznidazole 30X alone derived no benefit from it at all.

87. Lopes CR, et al. **Effect of different homeopathic medicines on histopathology of mice infected by *Trypanosoma cruzi*.** *Int J High Dilution Res*, 2013, 12, 44, 141-142. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 141. This Brazilian study attempted to assess the effectiveness of different homeopathic medicines on skeletal muscle, heart and intestine parasitism of mice infected by *Trypanosoma cruzi*, the organism implicated in the generation of Chagas' disease. Mice were given homeopathically prepared Lycopodium 13C, Causticum 13C, Conium maculatum 13C, or a control substance, as a means of preventing infection by *T. cruzi*. The mice were then exposed to the parasite and examined for infection. An analysis of the data collected showed that both Lycopodium and Causticum had a significant protective effect against the parasite when compared to controls. Conium was found to be relatively inactive.

88. Braccini GL, et al. **Morpho-functional response of Nile tilapia (*Oreochromis niloticus*) to a homeopathic complex.** *Homeopathy*, 2013, 102, 4, 233-41. This work looked at the effects of different concentrations of a homeopathic complex (Homeopatila 100) on the performance and prevalence of ectoparasites and the morpho-functional response of the liver and the branchiae of the fish, Nile tilapia (*Oreochromis niloticus*). This trial used farmed juvenile Nile tilapia that were randomly assigned to receive one of four treatments: negative control or 20 mL, 40 mL or 60 mL of the homeopathic combination per kg of fish meal food. There were four replications per treatment type over a period of 57 days. Assessment was via the number of hepatocytes/mm, the intercellular glycogenic behaviour, the rates of histological change (hyperplasia, lamella fusion and telangiectasia) and the percentage of neutral and acidic mucin-producing cells. Significant effect differences were found between the different homeopathic combination treatments and the hepatosomatic ratio of fish treated with it was significantly lower than that of fish from the control group. The best results in the liver and branchiae were achieved with a concentration of 40mL per kg of fish meal.

89. Patel DR, et al. **Toxicodendron Pubescens Retains Its Anti-arthritis Efficacy At 1M, 10M and CM Homeopathic Dilutions.** *Homeopathy*, 2012, 101, 165-170. This Indian study aimed to evaluate the anti-inflammatory activity of *Rhus tox* in homeopathic potencies of 1M, 10M and CM in rats. The animals with this disease had the severity of inflammatory lesions measured plethysmometrically and the intensity of pain was measured using a digital Von Frey apparatus. Other estimations included serum C-reactive protein (CRP), haematological parameters, body weight changes, arthritic pain score and radiological analysis of the arthritic paws. The 1M, 10M and CM homeopathic dilutions of *Rhus tox*

reduced primary and secondary arthritic lesions, improved body weight gain and protected rats against any further arthritis. A significant reduction in the serum levels of CRP and an improvement in pain threshold of arthritic paws was observed, confirming that the anti-arthritic potential of Rhus tox is retained at 1M, 10M and CM potencies.

90. Lotfollahzadeh S, et al, **The Therapeutic Effect Of Tarentula Cubensis Extract (Theranekron) In Foot-And-Mouth Disease In Cattle: A Randomised Trial In An Endemic Setting.** *Homeopathy*, 2012, 101, 159-164. Iranian workers from the University of Tehran conducted a randomised controlled clinical trial of a homeopathic preparation of Tarentula cubensis (Theranekron) during an outbreak of foot and mouth disease (FMD) in cattle in Iran. A single subcutaneous injection of Theranekron was used as sole treatment in 50 infected animals (treatment group). The control group comprised 15 infected animals treated with standard medication including: daily injection of flunixin meglumine and oxytetracycline and daily dressing of lesions with 4% sodium carbonate. Systemic and local signs were recorded over 14 days. Rectal temperature in the treatment group subsided to normal range within 1 day of homeopathic treatment, and was significantly lower in the test group than in the control group on several successive days ( $P < 0.05$ ). Healing of inflamed mucosal areas and appetite score of the treatment was significantly better than the control during the first 3 days of treatment ( $P < 0.05$ ) showing that Theranekron is effective for the treatment of systemic and local signs of FMD-infected cattle.

91. Patil CR, et al. **Modulation Of Arthritis In Rats By Toxicodendron Pubescens And Its Homeopathic Dilutions.** *Homeopathy*, 2011, 100, 131-137. Rhus tox (Toxicodendron Pubescens) is commonly prescribed in homeopathy for inflammatory joint disorders. This study was designed to confirm these effects experimentally and determine if the homeopathic potency of the medicine influenced these effects. Rats that were destined to develop arthritis were pretreated with one of 5 forms of Rhus tox- the crude substance, 3C, 6C, 30C and 200C. Assessment was made using clinical symptoms, haematology, C-reactive protein assay and blinded radiology. All of the homeopathic potencies and the crude preparation were shown to be effective, with the highest level of activity being seen in the crude form of Rhus tox at a dose of 10mg/kg per day.

92. Lakshmipathy PR, et al. **Anxiolytic Effect of Homeopathic Preparation of Pulsatilla nigricans in Swiss Albino Mice.** *Homeopathy*, 2012, 101, 171-174. An Indian team from the Chettinad Hospital and Research Institute in Tamilnadu conducted a study on mice to evaluate the anxiolytic activity of Pulsatilla and compare its activity with the standard anxiolytic drug, Diazepam. Twenty four mice were divided into 4 groups of 6 animals each- control, standard, and two test groups. The control group was treated with diluent at a dose of 10 ml/kg. The standard group received Diazepam, 1 mg/kg. Pulsatilla 3X and 6X solutions were given at the dose of 10 ml/kg to the test groups. All animals were given the test and control treatments orally for 15 days. The anxiolytic effect was tested on days 1, 8 and 15 using the Elevated Plus Maze (EPM) and Open Field Test (OFT). Both Diazepam and Pulsatilla showed significant anxiolytic activity in EPM and OFT test compared to the control. The total number of entries and time spent in open arm in EPM was increased by both Diazepam and Pulsatilla, and the effect of 3X homeopathic potency of Pulsatilla was greater than diazepam. In the OFT the number of squares crossed, rearing and assisted rearings decreased with both Diazepam and Pulsatilla, compared to the control and the anxiolytic effect of Diazepam was greater than that of Pulsatilla. The anxiolytic effect was greater for the 3X Pulsatilla than the 6X potency and overall, the study showed that the anxiolytic effect of homeopathically prepared Pulsatilla was comparable to that found with Diazepam.

93. Canello S, et al. **Bone Computed Tomography Mineral Content Evaluation in Chickens: Effects of Substances in Homeopathic Concentration.** *Homeopathy*, 2016, 105, 92-95. An Italian

team working with battery chickens reared in commercial poultry-sheds (which typically have difficulties with proper bone mineralisation) randomly assigned 96 of the birds into 4 groups. Each group were given standard feed with one homeopathically prepared substance (Symphytum 9C, Tricalcareia 4C, Tricalcareia 9C or Calc carb 30C) or a placebo, in order to assess the ability of the homeopathic compounds to increase the concentration of calcium hydroxyapatite in the sternal spongy bone tissue. The team measured the concentration of calcium hydroxyapatite in the sternums by means of a computed tomography (CT). The results provided by the researchers state that, when compared to placebo, the use of Symphytum was associated with an increase in mineralisation of 30%, Tricalcareia 4C by 36% and Calc carb by 63%.

94. Nimgulkar CC, Patil SD, Kumar BD. **Anti-asthmatic And Anti-anaphylactic Activities of Blatta Orientalis Mother Tincture.** *Homeopathy*, 2011, 100, 138-143. This Indian work was designed to assess the effects of the homeopathic mother tincture of Blatta against the bronchospasm and atopic response in rats and guinea pigs to acetylcholine and histamine, and thereby demonstrating its effect in asthma and anaphylaxis. Mast cell degranulation, serum IgE, eosinophil count and observation were used to measure the response and it was shown from the results that the use of Blatta was associated with significant reductions in both bronchospasm and anaphylaxis when compared to controls.

95. Lakshmanan G, Prakash S. **Effect of Ultra-High Dilutions of Lycopodium Clavatum on Reproductive and Sexual Functions in Aged Male Wistar Albino Rats.** *Homeopathy*, 2016, 105, 17. An Indian team from the University of Madras examined the effects of various homeopathic potencies of Lycopodium (6C, 30C and 1M) on the reproductive functions of rats. 36 aged rats were divided into 6 groups and given controls or the various potencies of Lycopodium daily for 60 days. Assessments were made at days 0, 30 and 60 of testosterone, testis (enzymic, non-enzymic antioxidants and lipid peroxidation), epididymi and sperm (viability, concentration, motility, morphology, morphometry, acrosomal intactness, membrane permeability and Nuclear condensation assay). Tests were also done on potency and mating behaviour. An analysis of the results saw an increase in testosterone levels and an improvement in sperm parameters in the rats given Lycopodium with a better spermatogenic status in the treatment groups than the control groups. Mating behaviour assessment and tests for potency showed better sexual performance in the test groups than control groups. The results for Lycopodium 30C and 1M were superior to the other potencies used.

96. Lopes CR, et al. **Highly Diluted Medication Reduces Tissue Parasitism and Inflammation in Mice Infected by Trypanosoma cruzi.** *Homeopathy*, 2016, 105, 186-193. Using a blind, controlled, randomised study design, a Brazilian research team set out to evaluate the effects of homeopathically prepared Kalium causticum, Conium maculatum, and Lycopodium clavatum 13C on mice infected with Trypanosoma cruzi. 102 mice infected with Trypanosoma cruzi were treated with the homeopathic medicines or a control at 48, 96 and 144 hours after baseline. The use of the homeopathic medicines was associated with a statistically significant reduction in parasitaemia when compared to the control, and the greatest effect was seen in the mice given Lycopodium.

97. Siqueira CM, et al. **Homeopathic Treatments Modify Inflammation But Not Behavioural Response to Influenza Antigen Challenge in BALB/c Mice.** *Homeopathy*, 2016, 105, 3, 257-264. Mice suffering from influenza were given an orally consumed homeopathically prepared material made from the influenza virus for 21 days and challenged subcutaneously with influenza hemagglutinin antigen (7 µg/200 µl) at day 21. At this point, flow cytometry and morphometry revealed significant changes in T and B cell balance after influenza antigen challenge but no statistically significant changes to behaviour were noted.

98. 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. Plasmodium berghei is associated with malaria and in this research, the antimalarial efficacy of a combination of two homeopathic medicines, Chelidonium 30C and nosode 30C were evaluated against Plasmodium berghei (P. berghei) infection in mice using Peters 4-day test. The combination of the medicines demonstrated considerable 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  $22.5 \pm 6.31$  days, whereas it was  $8.55 \pm 0.83$  days in infected controls.

99. Marzotto M, et al. **Effects Of Ignatia Amara In Mouse Behavioural Models.** *Homeopathy*, 2012, 101, 57-67. Ignatia in homeopathic potency has a long history of use the treatment of anxiety. This Italian research was conducted in an effort to add to work already done in this area. Groups of 8 mice were given homeopathically prepared 4C, 5C, 7C, 9C or 30C Ignatia. Groups of 8 mice were also given a negative control substance (diluent) or a positive control (Diazepam). Validated test models for locomotion and emotional response, the Open-Field (OF) and the Light Dark (LD) tests, were employed. Five replications of the same protocol were carried out, in a randomised manner using coded drugs/controls. The results indicated that, compared with controls, homeopathic potencies of Ignatia modify some emotion-related symptoms in laboratory mice without affecting locomotion and that the most effective of these was the 9C potency of Ignatia.

100. Sato C, Listar GH, Bonamin LV. **Development Of Broiler Chickens After Treatment With Thymulin 5cH: A Zoo Technical Approach.** *Homeopathy*, 2012, 101, 68-73. Brazilian scientists from the Universidade Paulista added to previous research on the immune-modulating effects of Thymulin 5C by looking at its effects on the growth of immune tissue in chickens. 72 young chickens were divided in two groups: (a) test: birds with free access to thymulin 5C diluted into their drinking water and (b) control: birds with free access to water only, for 42 days. All experimental procedures were done in blind. The results show that thymulin 5C treated group had increased growth index compared to controls (391.45 versus 261.93) associated with higher viability in the 7th week ( $p = 0.013$ ), and a possible shunt to B lymphocyte activity. The data suggest that thymulin 5C could be a viable means of improving productivity in poultry production due to its immune modulation properties.

101. Junior RP, et al. **Morphometry of White Muscle Fibers and Performance of Nile Tilapia (Oreochromis niloticus) Fingerlings treated with Methyltestosterone or a Homeopathic Complex.** *Homeopathy*, 2012, 101, 154-158. The Nile tilapia is a popular farmed table fish and scientists from various universities in Brazil tested a homeopathic combination product against methyltestosterone or a negative control to determine whether or not the homeopathic combination had an anabolic effect and affected survival rates. A total of 4800 post-larval fish were randomly assigned by tank to receive one of three treatments: negative control, homeopathic combination, or 17-alpha-methyltestosterone, supplemented in the feed for 28 days. At the end of the study it was found that fish treated with the homeopathic combination had improved survival and muscle fibre hypertrophy, but were smaller (probably related to increased survival and overcrowding) compared to fingerlings treated with synthetic hormone or control.

102. Keim AP, et al. **The Multicomponent Medication Lymphomyosot Improves the Outcome of Experimental Lymphedema.** *Lymphatic Research and Biology*, 2013, 11, 2, 81-92. In a joint German and US project, researchers evaluated the effect of the homeopathic combination product to treat tissue swelling and promote lymphangiogenesis in experimental models of murine lymphoedema.: Experimental models of mouse lymphoedema were injected with varied amounts of the combination or saline as a control. Measurements of tail swelling and wound closure were taken and compared amongst the groups. Three separate groups of mice were analysed for lymphatic capillary migration,

lymphatic vessel regeneration, and macrophage recruitment. The use of the combination was associated with a significantly reduced swelling and increased the rate of surgical wound closure.

103. de Souza MFA, et al. **The Effect of Individualised Homeopathic Treatment on the Semen Quality of Bulls with Reproductive Disorders: a Case Series.** *Homeopathy*, 2012, 101, 243-245. Work was done at the Universidade Federal de Mato Grosso in Brazil to evaluate the effect of homeopathy on the semen of bulls with reproductive disorders. The behavioural, clinical and spermiatic characteristics of four purebred bulls (bulls A, B, C and D) were evaluated. The bulls received individualised homeopathic treatment mixed into their feed. It was administered once per day and semen was collected. Successful collection, freezing, effective doses, and the number of doses of semen per collection, were compared before and after homeopathic treatment. The rates of successful collection were 97.14%, 100%, 96.67% and 30.77% pretreatment and 95.45%, 100%, 94.67% and 96.77% at post-treatment for bulls A, B, C and D, respectively. The average number of doses per ejaculate pre and post-treatment were 102.67 (SD 74.41) vs. 300.08 (SD 180.58), 0 vs. 234.78 (SD 96.12), 0 vs. 105.12 (SD 54.98), 0 ± vs. 107.37 (SD 52.12) respectively. What this displayed was that the use of homeopathy improved the production of viable doses of semen from bulls with previous freezing problems and poor semen quality.

104. Aubry E, et al. **Early Udder Inflammation in Dairy Cows Treated by a Homeopathic Medicine (Dolisovet): a Prospective Observational Pilot Study.** *Homeopathy*, 2013, 102, 139-144. French researchers in this study set out to assess the effects of a topical homeopathic combination product containing Belladonna 1X, Calendula mother tincture, Echinacea 1X and Dulcamara 1C, on mastitis in dairy cows. Data from 31 cows with udder quarters identified as being inflamed by an automated milking system (AMS) was assessed to evaluate the effect of the product on selected parameters of mammary inflammation. Inflamed quarters were identified when milk quality started to deteriorate, via an alert generated by the AMS, on the basis of electrical conductivity (EC). Milk yield and EC were retrieved five to seven days prior to the AMS alert, on the day of the alert, and for the following seven days. The product was administered twice daily for two consecutive days, commencing on the day of the AMS alert. A significant reduction in EC was observed at 4-7 days following the first treatment and an increase in milk yield was also observed following the first treatment.

105. Jyothilakshmi V, et al. **Preliminary Investigation on Ultra High Diluted B. vulgaris in Experimental Urolithiasis.** *Homeopathy*, 2013, 102, 172-178. An Indian research group from the University of Madras and the Central Council for Research in Homeopathy focused on the anti-urolithiasis potential of homeopathically prepared *Berberis vulgaris* 200C in rats. Animals with urolithiasis were given *Berberis v. 200C*, 20 ml/100 g body weight/day for 28 days. Urine and serum samples were analysed for calcium, magnesium, phosphorus, uric acid and creatinine. Enzyme markers for renal damage (alkaline phosphatase, lactate dehydrogenase, leucine aminopeptidase and g-glutamyl transpeptidase) were assessed in kidney and urine and renal tissues were analysed for oxalate content. Compared to untreated controls, rats treated for urolithiasis with *Berberis v 200C* exhibited a statistically significant reduction in most of the parameters measured.

106. Sampath S, 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, 160-171. Researchers from India's Central Council for Research in Homeopathy and University of Madras, looked into the effects on diabetes of homeopathic medicines prepared from *Syzygium Jambolanum* and *Cephalandra Indica*- two medicines with a long history of use in diabetes in humans. Homeopathic preparations of *Syzygium* and *Cephalandra* in mother tincture, 6C and 30C, were used to examine the molecular mechanism of antidiabetic effects in the skeletal muscle of rats with type-2 diabetes mellitus. Positive (metformin and streptozotocin) and

negative (diluent) controls were also used. After 30 days of treatment, fasting blood glucose, serum insulin and insulin signalling molecules in the skeletal muscle (gastrocnemius) were measured. The rats given the homeopathics showed a significant decrease in serum insulin and lipid profile as well as low levels of insulin receptor (IR), v-akt murine thymoma viral oncogene homolog (Akt), p-Aktser473 and glucose transporter-4 (GLUT4) protein expression ( $p < 0.05$ ) with a significant increase in fasting blood glucose level ( $p < 0.05$ ), compared to the controls. Treatment with homeopathic medicines significantly increased the serum insulin and expression of these proteins ( $p < 0.05$ ) with a significant decrease in fasting blood glucose ( $p < 0.05$ ).

107. Eyles D. **Amelioration of Pain and Distress in Tail-Ringed Lambs Using Homeopathy.** *Homeopathy*, 2014,103, 1, 68. In this randomised triple blind controlled trial UK researchers dealt with the issue of pain experienced by lambs as a result of processes used in tail-docking. 54 lambs were randomly assigned to receive a homeopathic complex of Aconite, Arnica and Hypericum, all at 200C potencies, or a negative (diluent) control. The behaviour of each lamb was recorded on a standardised form, every minute for 20 minutes. Every movement was categorised according to the degree of stressed behaviour exhibited and counted using check marks, each time that type of movement occurred in each minute. The scores for each minute were then totalled to give a score for the whole 20 minutes of study. At the end of the 20 minute recording period, the final distress scores for the lambs given the complex group were approximately 35% lower than the distress score recorded for the placebo group.

108. Santana F, et al. **Modulation of Chronic Inflammation Response to Leishmania (L.) amazonensis by Thymulin 5CH in Mice.** *Homeopathy*, 2014, 103, 1, 64. Brazilian scientists from the Universidade Paulista and Universidade de Santo Amaro, sought to assess the effects of homeopathically prepared Thymulin 5C on protozoal infections in mice. Mice suffering from an infection with *Leishmania (L.) amazonensis* were treated with Thymulin 5C or diluent (negative control) for 60 days. An analysis was then made of the inflammatory cells and spleens, as well as the lymph nodes of the mice. Treated mice exhibited an increase in B1 stem cells in relation to other cell types, and a more organised and pronounced inflammatory response in the infection site, with a decrease in the number of parasites per field ( $p=0.05$ ). The results show that Thymulin 5C is able to improve B1 stem cell activation and *Leishmania (L.) amazonensis* phagocytosis efficiency in mice.

109. Ferraz FN, et al. **Different Forms of Administration of Biotherapy 7dH in Mice Experimentally Infected With Trypanosoma Cruzi Produce Different Effects.** *Homeopathy*, 2011, 100, 237-243. Brazilian researchers set out to determine the outcome of using 7dH (7X) homeopathic potencies of *T. cruzi* on mice infected with the same species of parasite. The parasite itself is associated with Chagas disease in humans. Mice were assigned to receive the homeopathic medicine at various times before developing the infection (5, 7, 20 or 30 days), water as a negative control or benznidazole as a positive control, before developing the infection. On analysis of the results it was found that, when compared to the controls, pretreatment with the homeopathic medicine at days 7 and 30 before the development of the infection had a statistically significant effect.

110. Guedes JPR, et al. **Ultra High Dilution of Triiodothyronine Modifies Cellular Apoptosis in Rana Catesbeiana Tadpole Tail In-vitro.** *Homeopathy*, 2011, 100, 220-227. Triiodothyronine, otherwise known as T3, has a well-defined role as a metabolic stimulant. This randomised and blinded Brazilian research was designed to investigate the effects of a 10C homeopathic potency of T3 on the action of material doses of T3, on the growth of tadpole tails in comparison to both positive (material doses of T3) and negative (unsuccussed diluent) controls. Specifically, the researchers wanted to find out if the 10C homeopathic potency blocked the action of T3 in regard to apoptosis of the tadpole tails;

a measure of the maturation of tadpoles into frogs. The results displayed a statistically significant reduction in the action of T3 as a result of the influence of the homeopathically potentised T3.

111. Tunngunga IB, et al. **Therapeutic evaluation of drug *Crotalus horridus* 200C against ehrlichiosis-infected dogs in Mizoram.** *Ind J Res Hom*, 2016, 10, 42-51. The aim here was to study the effect of the homeopathic medicine, *Crotalus horridus* 200C, on ehrlichiosis in dogs in an endemic area of Aizawl district of Mizoram state of India. 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 h* at 4 pills orally for 20 days. Clinical improvement of affected dogs was recorded after therapy. 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 protocols before and after treatment. All parameters were compared with a healthy control group (T3). The results from the PCR and blood tests showed a statistically significant association between the use of *Crotalus h* and recovery from canine ehrlichiosis.

112. Brustolin Aleixo CF, et al. **Beneficial immunomodulatory and neuro digestive effect in *Trypanosoma cruzi* infection after *Lycopodium clavatum* 13c treatment.** *Microb Pathog*, 2017, 112, 1-4. This work evaluated the effects of *Lycopodium clavatum*, at 13C potency, on Wistar rats infected with *T. cruzi*. Rats were allocated into groups: IC (infected control group) and Ly (treated with *Lycopodium* 13C). The cytokines dosage (IFN- $\gamma$ , IL-12, IL-10, IL-4), quantification and morphometry of myenteric neurons were evaluated. The treatment with *Lycopodium* modified the immune response, with an increase of IFN- $\gamma$  on day 10 and IL-12 on day 24, a decrease of IL-10 concentration on day 10, and a subsequent increase of this cytokine and IL-4 on day 24, affording a bigger number of myenteric neurons compared to IC group. Thus, the use of *Lycopodium* was associated with an improved immune response in rats infected with *T. cruzi*, reducing the pathogenic progression of digestive Chagas disease.

113. Hanif K, et al. **Homeopathic medicine *Mercurius solubilis* treatment improves cerebral blood flow and memory in experimentally induced dementia in rats.** *Ind J Res Hom*, 2017, 11, 58-63. Researchers from the CSIR in India investigated the effect of Merc. sol in various homeopathic potencies (6C, 30C, 200C, and 1M) administered for 17 days on learning, memory and cerebral blood flow (CBF) in rats with impaired learning and memory functions. The Morris water maze test was used to evaluate the learning and memory function on the 14th, 15th, and 16th days of the study. A laser doppler flow meter was used to measure CBF on the 17th day. An analysis of the results showed a statistically significant improvement in cerebral blood flow and memory in the subjects.

114. de Paula Coelho C, et al. **Homeopathic medicine *Cantharis* modulates uropathogenic *E. coli* (UPEC)-induced cystitis in susceptible mice.** *Cytokine*, 2017, 92, 103-109. This randomised, blinded, placebo controlled trial was designed to study the effects of *Cantharis* 6C, a homeopathic medicine, on *E. coli*-induced cystitis in mice. 24 adult susceptible female BALB/c mice suffering from *E. coli* cystitis were offered *Cantharis* 6C or vehicle (placebo) by free access into the drinking water (1:100), for 24 h and assessed via immunohistochemistry for anti-CD3, CD79, MIF, NK and VEGF antibodies; the cytokines present in the bladder washing fluid were measured using a LUMINEX-Magpix KIT. Mann-Whitney and Fisher exact test were used as statistical analysis. The use of *Cantharis* 6C was associated with an increase in IL12p40, IFN- $\gamma$  and decreased IL10 concentrations in the bladder fluid ( $p \leq 0.05$ ); in the bladder mucosa, it increased the ratio between B and T lymphocytes (31%) and between B lymphocytes and MIF+ macrophages (57%,  $p \leq 0.05$ ). In the pelvis, instead, it

decreased the B/T cells ratio (41%,  $p \leq 0.05$ ) and increased the M1/M2 macrophage ratio (42%,  $p \leq 0.05$ ). The inverted balance of inflammatory cells and cytokines in bladder and pelvis mucosa showed specific local immune modulation induced by *Cantharis 6C*.

115. Umesh B, et al. **Homeopathy and lipopolysaccharide-induced release of pro-inflammatory cytokines: In-vitro and in vivo evidence.** *Ind J Res Hom*, 2017, 11, 158-69. In this joint UAE and Indian collaboration, workers investigated the effects of homeopathic mother tinctures, 6C, 30C and 200C potencies of *Arnica montana*, *Thuja occidentalis* and *Bryonia alba* against LPS-induced cytokine release from RAW-264.7 cells and human whole-blood culture. Lipopolysaccharide (LPS)-induced cytokine release and oxidative stress are validated experimental parameters used to test anti-inflammatory activity. For in vivo evaluations, mice were orally treated with 0.1 ml drug dilutions twice a day for 5 days followed by an intraperitoneal injection of 0.5 mg/kg LPS. After 24 h, the mice were assessed for serum levels of pro-inflammatory cytokines and nitric oxide levels. The extent of oxidative stress was determined via assays of reduced glutathione, malondialdehyde, superoxide dismutase and catalase. The homeopathic medicines significantly reduced in-vitro LPS-induced release of tumour necrosis factor, interleukin-1 (IL-1) and IL-6 from the RAW-264.7 cells and human whole blood culture. These drugs also protected mice from the LPS-induced oxidative stress in liver tissue.

116. Mazon-Suastegui JM, et al. **Homeopathy outperforms antibiotics treatment in juvenile scallop *Argopecten ventricosus*: effects on growth, survival, and immune response.** *Homeopathy*, 2017, 106, 1, 18-26. *Vibrio alginolyticus* is a common mollusc pathogen. The use of increasingly potent antibiotics has led to bacterial resistance and increased pathogenicity. The effects of homeopathic complexes in the growth, survival, and immune response of the Catarina scallop *Argopecten ventricosus* were assessed. The experimental design included two homeopathic formulas: the homeopathic complex Passival, consisting of *Passiflora incarnata* 30C, *Valeriana officinalis* 30C, *Ignatia amara* 30C and *Zincum valerianicum* 30C plus *Phosphoricum acid* 30C (treatment TH1) or *Silicea terra* 30C (TH2), two antibiotics (ampicillin = AMP, oxytetracycline = OXY), and two reference treatments (without homeopathic or antibiotic treatment = CTRL, ethanol 30° GL = ETH). Additionally, a negative control CTRL- (untreated/uninfected) is included in the challenge test. Juvenile scallops ( $4.14 \pm 0.06$  mm, 13.33 mg wet weight) were cultivated in 4 L tanks provided with aerated, filtered ( $1 \mu\text{m}$ ), and UV-sterilized seawater that was changed every third day. They were fed a blend of the microalgae *Isochrysis galbana* and *Chaetoceros calcitrans* ( $150,000$  cells  $\text{mL}^{-1}$  twice a day). All treatments were directly added to the tank water and then 500 mL challenge units were inoculated with  $1 \times 10^7$  CFU/mL ( $\text{LD}_{50}$ ) of *V. alginolyticus*. Juveniles grew significantly larger and faster in height and weight with TH2 compared to the ETH and CTRL ( $P < 0.05$ , ANOVA). Higher concentrations of proteins occurred in scallops exposed to TH2 ( $160.57 \pm 7.79$  mg  $\text{g}^{-1}$ ), compared to other treatments and reference treatments. Higher survival rates during the challenge bioassay occurred with TH1 (85%), compared to AMP (53%), OXY (30%), and CTRL (0%), and superoxide dismutase ( $P < 0.05$ ) was significantly higher in scallops treated with TH1, compared to other treatments and reference treatments. This showed that the use of the homeopathic treatments was associated with improved growth, survival and enhanced survival against *V. alginolyticus* in juvenile *A. ventricosus*.

117. Ahmad S, Rehman T, Ababsi WM. **In vivo evaluation of antipyretic effects of homeopathic ultrahigh dilutions of *Typhoidinum* on baker's yeast-induced fever in comparison with Paracetamol.** *Ind J Res Hom*, 2017, 11, 170-6. This Pakistani study looked at the effectiveness of some homeopathic medicines in fever in comparison with the effects of Paracetamol. A baker's yeast fever model in rabbits was used in the study. Rabbits were divided into four different groups ( $n = 6$ ). Rectal temperature was measured before and after fever induction hourly. After fever induction, medicines were administered orally. Paracetamol and *Typhoidinum* in 200C and 1M potencies were given orally. ANOVA followed by post hoc test was used for the statistical analysis of the results, which

were considered statistically significant at  $P \leq 0.05$ . The results of the study revealed the significant effectiveness of Typhoidinum in 200C and 1M potencies in baker's yeast-induced fever ( $P = 0.05$ ). Typhoidinum in both potencies showed less significant results as compared to Paracetamol. However, all the medicines' effects were significant compared to the negative control.

118. Ahmad S, Abbasi WM, Rehman T. **Evaluation of antipyretic activity of Belladonna and Pyrogenium ultrahigh dilutions in induced fever model.** *J Complement Integr Med*, 2018, Oct 17, doi: 10.1515/jcim-2018-0127. This work was conducted to evaluate the effectiveness of the homeopathic medicines Belladonna (Bell) and Pyrogenium (Pyro) in the treatment of fever in rabbits. 42 rabbits were allocated to 7 groups- normal control, negative control, standard control (paracetamol), Pyro 1000C, Pyro 200C, Bell 1000C and Bell 200C, and treated for fever. Assessment was via hourly rectal temperature monitoring and the medicines were administered once a day. Pyro in both potencies significantly reduced fever in rabbits compared to the negative control group, while both potencies of Bell were ineffective. Paracetamol and Pyro 1000C reduced fever by  $1.2^{\circ}\text{C}$  ( $39.7 \pm 0.1$  to  $38.5 \pm 0.1$ ), while Pyro 200C reduced fever by  $1^{\circ}\text{C}$  ( $39.7 \pm 0.5$  to  $38.7 \pm 0.2$ ).

119. Magar S, et al. **Ultra-diluted Toxicodendron pubescens attenuates pro-inflammatory cytokines and ROS- mediated neuropathic pain in rats.** *Nature Sci Rep*, 2018, Sept 10, 18, 1, 13562. The researchers here evaluated the anti-nociceptive efficacy of homeopathically prepared Rhus toxicodendron (Rhus tox) 8X, 12X, 24X and 30X, in neuropathic pain. Initially, in-vitro assay using LPS-mediated ROS-induced U-87 glioblastoma cells was performed to study the effect of Rhus tox on reactive oxygen species (ROS), anti-oxidant status and cytokine profile. Rhus tox decreased oxidative stress and cytokine release with a restoration of anti-oxidant systems. Chronic treatment with Rhus tox for 14 days ameliorated neuropathic pain revealed as inhibition of cold, warm and mechanical allodynia, along with improved motor nerve conduction velocity (MNCV) in constricted nerves. Rhus tox decreased the oxidative and nitrosative stress by reducing malondialdehyde (MDA) and nitric oxide (NO) content, respectively along with up regulated glutathione (GSH), superoxide dismutase (SOD) and catalase activity in sciatic nerve of rats. Notably, Rhus tox treatment caused significant reductions in the levels of tumour necrosis factor (TNF- $\alpha$ ), interleukin-6 (IL-6) and interleukin-1 $\beta$  (IL-1 $\beta$ ) as compared with CCI-control group. A protective effect of Rhus tox against CCI-induced sciatic nerve injury in histopathology study was exhibited through the maintenance of normal nerve architecture and inhibition of inflammatory changes. Overall, the neuroprotective effect of Rhus Tox in neuropathic pain suggests the involvement of anti-oxidative and anti-inflammatory mechanisms.

120. Ferrari de Andrade L, et al. **Inhalation therapy with M1 inhibits experimental melanoma development and metastases in mice.** *Homeopathy*, 2016 105, 1, 109-18. Researchers looked at the efficacy of M1, a complex of potentised material referred to by the researchers as a "homeopathic medicine", in the treatment of metastatic melanoma in mice. An analysis of the results showed a statistically significant association between the use of M1 and a reduction in the tumour growth, tumour proliferation and angiogenesis via the inhibition of myeloid derived suppressor cells (MDSC) positive for angiotensin II type 1 receptor (AT1R).

121. Remya V, Kuttan G. **Homeopathic remedies with antineoplastic properties have immunomodulatory effects in experimental animals.** *Homeopathy*, 2015, 104, 3, 211-9. This work focused on the immune modulating effects in mice of homeopathically prepared Thuja occidentalis, Carcinosinum and Ruta graveolens, in potencies of 30C, 200C and 1M. The homeopathic preparations were administered orally for 10 consecutive days. Haematological parameters (total white blood cell count, differential count and haemoglobin content), haematopoietic parameters (bone marrow cellularity and  $\alpha$ -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. The team observed significant enhancement of haematological parameters including total WBC count, haematopoietic parameters such as bone marrow cellularity and the number of  $\alpha$ -esterase positive cells, and other parameters of immune response such as circulating antibody titre and the number of plaque forming cells, particularly with higher dilutions of Thuja and Ruta. Enhanced proliferation of B and T lymphoid cells was also observed. No toxic effects were observed.

122. Sikdar S, et al. **Post-cancer Treatment with Condurango 30C Shows Amelioration of Benzo[a]pyrene-induced Lung Cancer in Rats Through the Molecular Pathway of Caspa- se-3-mediated Apoptosis Induction.** *Pharmacopuncture*, 2013, 16, 3,11-22. DNA hypermethylation induces cancer progression involving the CpG island of DNA and causes an inactivation of tumour suppressor genes. In this study, the DNA hypermethylation status of lung cancer and the ability of homeopathically prepared Condurango 30C, compared to placebo, to modulate DNA methylation, were ascertained by an analysis of lung cancer-specific tumour suppressor genes. DNA methylation status was determined by PCR-SSCP analyses in lung cancer-specific tumour suppressor genes (p15, p16 and p53) using H460-NSCLC cell and BaP-induced lung cancer of rats. Compared to placebo, Condurango 30C-treated DNA showed a significant decrease in band intensity of p15 and p53 genes especially in methylated condition in-vitro, at IC50 dose (2.43 $\mu$ l/100 $\mu$ l). SSCP analysis of p15 and p53 genes in Condurango 30C-treated DNA also suggests that Condurango 30C can decrease methylation, in-vitro. In addition, an inhibition of p15 hypermethylation was observed in post-cancer treatment of rats with Condurango 30C. In summary, it was shown that Condurango 30C can trigger epigenetic modification in lung cancer via the modulation of DNA hypermethylation.

123. Mazon-Suastegui JM, et al. **Evaluation of Homeopathic Phosphoric Acid, Silica and Pathogenic Vibrio on Digestive Enzyme Activity of Longfin Yellowtail Fish (*Seriola rivoliana*).** *Homeopathy*, 2020, 109, 1, 3-13. This research aimed to observe the effect of homeopathically prepared *Vibrio parahaemolyticus* (ViP) and *V. alginolyticus* (ViA) and the homeopathic compound Similia (Phosphoricum acidum and Silicea terra) on the digestive enzyme activities of *Seriola rivoliana* juveniles under usual culture conditions. Biochemical analysis was used to study the effect of highly diluted substances (7C potency) prepared from ViP and ViA (Treatment 1: T1) and the homeopathic compound Phosphoricum acidum and Silicea terra (Treatment 2: T2) on changes in the main digestive enzymes on weaning-state fish (WS; 30 days post-hatching [DPH]) and early juveniles (EJ; 62 DPH) versus a reference control group that received no homeopathic medicines. Treatment T2 significantly increased the activity of trypsin and lipase and decreased the activity of amylase, whereas treatment T1 increased the activity of chymotrypsin and reduced the activity of aminopeptidase-N in WS fish. Except for alkaline phosphatase, which was significantly reduced in the intestine, no significant differences in enzymatic activity were found between treated EJ fish and controls. The fish of the WS group had a higher growth rate with the T2 treatment.

124. Pacheco PA, et al. **Evaluation of Parasitological Homeopathic Complex in the Control of Gastrointestinal Nematodes in Peripartum Sheep.** *Homeopathy*, 2019, 108, 4, 248-55. 3 randomised groups containing 16 ewes in the critical peripartum period of increased susceptibility to nematodes animals each were assigned as follows: 'H10' received 10 g homeopathic complex added to concentrated food per day; 'H20' received 20 g homeopathic complex added to concentrated food per day; 'C' (control group) did not receive a homeopathic complex. Animals were tested to evaluate the effect of homeopathy on several health parameters during a period of 110 days. the parasite that prevailed in the copro-cultures of both treatments throughout the experiment was *Haemonchus contortus* (78.26%). Packed cell volume averages did not present statistically significant differences between the treatments (24.5, 24.4 and 23.9% to C, H10 and H20, respectively;  $p < 0.05$ ). For total white cell count, lower mean values ( $\pm$  standard error of mean) were observed for the H20 treatment (5,490.9  $\pm$  0.02/ $\mu$ L;  $p < 0.05$ ), whereas the H10 (5,919.4  $\pm$  0.02/ $\mu$ L) and control (6,098.5  $\pm$  0.02/ $\mu$ L)

presented higher and similar averages ( $p > 0.05$ ). The values for erythrocytes, monocytes, and lymphocytes did not show differences between treatments ( $p > 0.05$ ). Body weight was greater in the H10-treated animals compared with control. For the faecal egg count (FEC) of Trichostrongylidae and Strongyloides spp., respectively, the averages of the H20 treatment (1,523.0 and 30.6) were not different from control (1,616.0 and 31.6) and H10 (1,038.0 and 27.6); for Trichostrongylidae, however, H10 presented a lower FEC than the control ( $p = 0.02$ ). For Cooperia, H10- and H20-treated animals showed FEC reductions of 97% and 98%, respectively. What this showed was that H20 treatment in peripartum sheep resulted in greater body weight and lower leukocyte count. H10 was associated with lower FEC for Trichostrongylidae.

125. Eizayaga FX, et al. **Effects of Ultra-Low-Dose Aspirin in Thrombosis and Haemorrhage.** *Homeopathy*, 2019, 108, 3, 158-68. This article is a review of the totality of articles published by the Laboratory of Hematology of the Faculty of Pharmacy of the University of Bordeaux, reporting different doses and dilutions of aspirin, different kinds of inhibitors, transgenic mice and animal models of disease such as portal hypertension and cirrhosis. Homeopathic dilutions of aspirin, notably 15C, have shown a pro-thrombotic effect in humans and in in-vivo animal studies. Longitudinal studies in rats have also shown an initial anti-thrombotic effect followed by a pro-thrombotic effect of aspirin several days after a single high-dose administration. This pro-thrombotic effect seems to act by inhibiting the cyclooxygenase (COX)-2 pathway in studies performed with COX selective inhibitors and in knock-out mice without COX-1 or COX-2. This effect may explain the thrombo-embolic complications described after aspirin withdrawal for the purposes of surgery or after non-compliance with anti-platelet therapy, and it may be beneficial in normalising primary haemostasis and decreasing haemorrhage in animal models of portal hypertension and cirrhosis.

126. de Barros GP, et al. **Effect of Homeopathic Medicines and a Nosode on Larvae of Cochliomyia hominivorax (Diptera: Calliphoridae).** *Homeopathy*, 2019, 108, 3, 177-182. Cochliomyia hominivorax is the major fly causing primary myiasis in livestock animals in Brazil; its larvae develop in the host's living tissues, causing mutilations, which can even lead to death. This study evaluated how the emergence of adult insects is affected by the use of the homeopathic medicines Sulfur 12C and Pyrogenium 12C, and the nosode produced from C. hominivorax larvae at potencies 8C and 12C, on third-stage larvae of a C. hominivorax colony. Control groups were distilled water, alcohol, no substance, and the organophosphate insecticide trichlorfon. For each group, 10 replicates were performed. Emergence rate of adult insects was evaluated by descriptive statistics followed by analysis of variance. Homogeneity of variances was verified by *F*-test and group means were compared with Tukey's test. Mortality rates in control groups were 2.7% for 30% (v/v) alcohol, 4.3% for distilled water, 3.2% for no substance ( $p > 0.05$ ). In the trichlorfon group, the mortality rate of larvae was 90.8%. For Sulfur 12C, the mortality of larvae was 94.6%, and for Pyrogenium 12C it was 98.6%. The latter three means were not statistically different from each other or from the mean found for the trichlorfon group. The mortality rates of larvae were 61.3% and 66.6% for nosode C. hominivorax 8C and 12C, respectively ( $p > 0.05$ ).

## Plant studies

1. Baumgartner S, Thurneysen A, Heusser P. **Growth stimulation of dwarf peas (*Pisum sativum* L.) through homeopathic potencies of plant growth substances.** *Forsch Komplementarmed Klass Naturheilkd*, 2004, 11, 5, 281-92. In an effort to determine the effects of homeopathically potentised plant growth substances on the shoot growth characteristics of dwarf peas, plant cultures were immersed for 24 hours in solutions containing 4 different plant growth substances in 12X to 30X potencies. These were compared to cultures grown in a control substance. At shoot length measurement after a 14 day growth period, the cultures grown in the potentised growth substances

showed a measurable effect on the seed growth characteristics when compared to the control substance, the most notable of these, gibberellin 17X, producing the largest growth stimulation.

2. Baumgartner S, et al. **Reproducibility of dwarf pea shoot growth stimulation by homeopathic potencies of gibberellic acid.** *Complement Ther Med*, 2008, 16, 4, 183-91. In this Swiss study, which was slight variation of previous work done in this area by Hamman and others, dwarf pea seedlings in 4 batches containing seeds taken from adult plants in 1997, 1998, 1999 and 2000, were exposed to 17X and 18X potencies of Gibberellic acid (GA) and cultivated under controlled conditions, alongside dwarf pea seedlings that had received the same level of exposure to 2 negative control substances. GA in material doses is often used commercially to break periods of dormancy in seeds and has the capacity to stimulate the growth of seedlings and it's an endogenous component of some seeds and is involved in the growth of seeds and alpha amylase activity within the plant.. After 14 days all of these seedlings had their lengths measured and at this point it was found that the controls had performed as predicted, the 1997 seedling batch previously exposed to GA 17X and GA 18X had exceeded the growth rate of the controls by an average of 11.2% and the 1998 batch responded with a mixture of either stimulation or suppression of growth. Batches from 1999 and 2000 failed to respond to either potency of GA.

3. Binder M, Baumgartner S, Thurneysen A. **The effects of a 45x potency of arsenicum album on wheat seedling growth -- a reproduction trial.** *Forsch Komplementarmed Klass Naturheilkd*, 2005, 12, 5, 284-91. In a repeat performance of the previous trial, wheat seedlings previously exposed to sub-lethal doses arsenic were cultivated in either Arsenicum album 45X, water 45X or un-potentised water, and the seedling height measured at 7 days. The experiment was independently reproduced 8 times and after the results were collated the wheat seedlings cultivated in Arsenicum 45X showed a significant reduction in height when compared to the 2 controls.

4. Bornoroni C. **Synergism of Action between Indolacetic Acid and Highly Diluted Solutions of Calc carb on the Growth of Oat Coleoptiles.** *Berlin J on Res in Hom*, 1991, 1, 4-5275-278. This study demonstrated that Calc carb 5X significantly increased the growth stimulating effects of the plant growth stimulant, indole acetic acid.

5. Brizzi M, et al. **A biostatistical insight into the As(2)O(3) high dilution effects on the rate and variability of wheat seedling growth.** *Forsch Komplementarmed Klass Naturheilkd*, 2005, 12, 5, 277-83. Wheat seedlings previously stressed with sub-lethal doses of arsenic, a substance known to be lethal to this plant, were treated with various potencies of Arsenicum album (5X, 15X, 25X, 35X and 45X), equivalent potencies of water and equivalent un-succussed dilutions of arsenic trioxide. The stem lengths of the seedlings was assessed at day 7 and it was found that the 45X potencies of *Arsenicum* and the water but not the diluted arsenic trioxide induced an increase in seedling height.

6. Endler PC, Pongratz W. **Homoeopathic Effect of a Plant Hormone?** *Berlin J on Res in Hom*, 1991, 1, 3, 148-150. This study showed that Indole Butyric Acid, known at material levels to enhance the growth of new roots and leaves from plant slips, at a 33X potency, continued to provide an enhancement of growth

7. Jones RL, Jenkins MD. **Plant Responses to Homoeopathic Medicines.** *British Homeopathic Journal*, 1981, 70, 3, 120-146. The authors of this work set out to study the effects of various homeopathic potencies of Silver nitrate on the growth characteristics of the leaf sheaths of wheat. On analysis of the results they found that potencies of silver nitrate were in fact able to either inhibit or stimulate growth, depending upon the potency applied.

8. Scherr C, et al. **Effects of Potentised Substances on Growth Rate of the water plant Lemna gibba.** *Complementary Therapies in Medicine*, 2009, 17, 2, 63-70. Claudia Scherr and colleagues at the Research Institute of Organic Agriculture in Frick, Switzerland, conducted this randomised, controlled and blinded study to determine the extent to which various homeopathically potentised substances could influence the growth of Duckweed (*Lemna gibba*) when compared to controls. To do this, Duckweed was grown in 14X to 30X homeopathic potencies of *Argentum nitricum*, *Lemna minor* and Gibberelic acid (a known plant growth regulator), over a period of 7 days. Measurements were taken over 0-3 days, 3-7 days and 0-7 days. Succussed and un-succussed water controls were used. Neither controls produced any statistically significant effect and the potencies that caused the most pronounced reduction in growth when compared to controls were those of Gibberelic acid, particularly the 15X, 17X, 23X and 24X potencies.

9. Bonfim FPG, et al. **Germination and vigor of lettuce seeds (*Lactuca sativa* L.) pelleted with homeopathic preparations Alumina and Calcarea carbonica subjected to toxic levels of aluminium.** *Int J High Dilution Res*, 2010, 9, 33, 138-146. Researchers from three different universities in Brazil were involved in this study that adds to previous work looking at the effects of homeopathically prepared materials on plants. Lettuce seedlings intoxicated with aluminium were exposed to homeopathically prepared Alumina 6C, Alumina 12C, Calc carb 6C, Carb 12C, or two controls. Outcomes were assessed using germination percentage, germination speed index and radicle length. On analysis and when compared to controls a statistically significant association was found between all of the homeopathically prepared substances and germination speed index, radicle length and germination index.

10. Marques RM, Marques-Silva GG, Bonato CM. **Effects of high dilutions of *Cymbopogon winterianus* Jowitt (citronella) on the germination and growth of seedlings of *Sida rhombifolia*.** *Int J High Dilution Research*, 2008, 7, 22, 31-35. This research comes from the State University of Maringa, in Parana, Brazil and was performed to ascertain the effects of various homeopathically prepared potencies of citronella against *Sida rhombifolia*, an invasive weed endemic in Southern Brazil and many other parts of the world, including Northern Australia. *Sida* seedlings were exposed to 3C, 6C, 12C, 24C and 30C homeopathic potencies of citronella and a control substance. These plants were then monitored for root system growth, shoot length, total fresh mass, germination percentage and germination speed. This process was carried out 5 times and on analysis of the measurements it was found that all of the citronella potencies increased all parameters measured. Specifically, the 3C and 24C potencies had the greatest effect on root length, the 6C and 12C potencies had the greatest effect on shoot length, the 6C had the greatest effect on total biomass growth, and the 12C on germination percentage and germination speed.

11. Gangar HU. **Management and Control of Genetic Processes in Cotton Plants through Homoeopathy.** *Ind J Res Hom*, 2007, 1, 1, 1-5. In this Indian research, the effects of homeopathically prepared solutions on a broad range of parameters, using plants as the subjects, were measured. The homeopathic solutions were used in CM (100,000C) potencies and made from differing source materials. These were then assessed for their capacity to influence growth, germination, flowering and fruiting of cotton plants, compared to inactive dilutions applied in the same manner. In all cases, the homeopathically prepared solutions had a clear and objective effect on the parameter assessed. Work was also done here which confirmed that different potencies of different homeopathic drugs have a remedy-specific electrical charge.

12. Rossi F, et al. **Application of homeopathic remedy *Carbo vegetabilis* and development of plants of Lettuce.** *Int J High Dilution Research*, 2006, 5, 17, 23-30. A significant amount of work has been done to determine the effect effects of homeopathically prepared substances have on plants. This

study sought to investigate the effect of a number of different potencies of the homeopathic product, Carbo vegetalis, on the development of seedlings of the lettuce, *Lactuca sativa*. Lettuce seedlings housed in an environment likely to induce stress, a shaded greenhouse and a greenhouse in full sun, were exposed to Carbo veg 6C, 12C, 30C, 100C or one of 2 control substances. An analysis of the results confirmed the action of Carbo veg in these environments, with the 100C have the most notable effect on seedlings grown in the stressed environment.

13. Sukul S, Mondal S, Sukul NC. ***Sepia 200 cH in 1:1,000 dilution counteracts the effect of salt stress in cowpea seedlings but vehicle 90% ethanol proves ineffective in the same dilution.*** *Int J High Dilution Res*, 2012, 11, 41, 237-246. Work carried out at the Department of Botany, Visva-Bharati University in West Bengal, looked at the influence of homeopathically prepared Sepia 200C on the very common problem experienced by those growing cowpea in soil with rising salinity levels- salt stress. To do this, the team grew cowpea seedlings over moist filter paper in Petri dishes and divided them into 4 groups: (1) control in sterile water, (2) in 50 mM NaCl solution, (3) seeds pretreated with 90% ethanol diluted with water 1:100 and then transferred to 50 mM NaCl solution, and (4) seeds pretreated with Sep 200C diluted with water 1:100 and transferred to 50 mM NaCl solution. The data were analyzed by ANOVA followed by Student's t-test and this showed that, compared to controls, Sepia 200C significantly increased the growth, sugar, chlorophyll, protein and water content of the seedlings, thereby confirming that it counteracted the effects of salt stress.

14. Trebbi G, et al. ***Phytopathological and nutraceutical evaluation of cauliflower plants treated with high dilutions of arsenic trioxide.*** *Int J High Dilution Res*, 2012, 11, 40, 161-162. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). The fungus, *Alternaria brassicicola*, is a common cause of dark leaf spot disease in cauliflower (*Brassica oleracea* L.). In this study, researchers from the University of Bologna tested the antifungal capacity of homeopathically prepared Arsenic trioxide 35X and Cuprum metallicum 5X and compared to controls. 2 experiments were performed. In the first, spore suspensions were prepared in the test substances and their inhibiting effect on germination was recorded microscopically after incubation at 25°C for 5 hours. In the second experiment, the same treatments were tested on plants artificially inoculated with the fungus. To do this the test field in which the plants were to be grown was divided into plots according to a complete randomized block design. In the first trial, plants were artificially inoculated and treated every week; the infection level was evaluated on cauliflower heads. The second trial was performed on the same field with the aim to induce a natural infection, mediated by infected crop residues. Measurement endpoints concerned the evaluation of some physiological parameters along with the glucosinolate content on cauliflower heads. On analysis, the team found that Arsenic 35X and Cuprum 5X induced a significant decrease of mean infection level (-50%). In addition, physiological and nutraceutical analyses of healthy heads demonstrated that Arsenicum induced a significant increase of both head size and glucosinolate content.

15. Betti L, et al. ***Effectiveness of ultra high diluted arsenic is a function of succussion number as evidenced by wheat germination test and droplet evaporation method.*** *Int J High Dilution Res*, 2013, 12, 44, 127-128. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 127. This Italian research was performed to determine what effect, if any, the number of successions used in the preparation of a homeopathic medicine, has on its activity. Previous research has shown that homeopathically prepared potencies applied to arsenic-stressed wheat seeds stimulates their germination rate. In this study multiple replications of this model were employed using controls and a 45X homeopathic potency of arsenic trioxide succussed 4, 8, 16, 32, 40, 70 and 100 times. On analysis of the results it was shown that increasing the number of the succussions increased the activity of the arsenic 45X.

16. Banerjee P, Sukul S. **Cuprum Sulphuricum - a homeopathic drug can combating toxic effect of Cu, promote seed germination and peroxidase activity in Vigna unguiculata.** *Int J High Dilution Res*, 2013, 12, 44, 129-130. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 129. High concentration of copper can cause toxic effects in some plants due to its redox properties and can catalyze free radicals, such as reactive oxygen species and peroxide compounds. This Indian study was performed to examine the effect of homeopathically prepared copper sulphate 200C on seed germination of *Vigna unguiculata*. 3 sets of 100 seeds were prepared for germination. 2 sets were soaked in copper sulphate 200C and the third in a control substance. All were then exposed to material doses of copper sulphate. The seedling weight and length of germinating axis were observed after 24 hours, 48 hours and 72 hours. Water uptake percentages were recorded, total protein, chlorophyll, soluble and insoluble sugar were measured and the activity of peroxidase was determined. The results confirmed that in all the parameters observed, copper sulphate 200C-treated seeds showed significant changes as compared to controls.

17. Sukul NM, Chakraborty I, Sukul A. **Potentized Cina reduces root-knot nematode in infestation of cucumber and the antinematode effect is transmitted through water.** *Int J High Dilution Res*, 2013, 12, 44, 133-134. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 133. Root-knot nematodes belonging to *Meloidogyne incognita* are responsible for substantial loss in yield of vegetable crops all over the world. Chemical nematicides are expensive, cause environmental pollution and leave toxic residues in crops. In this Indian research, homeopathically prepared Cina was investigated for its properties as a nematicide and whether these properties could be dispersed through water. To do this, aseptically germinated seeds of cucumber, (*Cucumis sativus* L) were grown in sterilised pots. The pots were divided into 5 groups (10 pots per group): (i) uninoculated untreated, (ii) inoculated untreated, (iii) inoculated and treated with Cina 200C, (iv) inoculated and treated indirectly by connection with wet cotton threads to group (iii) and (v) inoculated and treated with Ethanol 200C as a remedy control. Groups (ii), (iii), (iv) and (v) were inoculated with the second stage larvae of *Meloidogyne incognita* when the plants were at six leaf stage. Just before inoculation plants of group (iii) and (iv) were connected leaf by leaf by wet cotton threads encased in polythene tubes. Then plants of group (iii) were directly pretreated by foliar spray with Cina 200C diluted with distilled water (1:500). Two days after inoculation plants of group (iii) were treated again with Cina 200C in a similar way. After 2 weeks all the plants were harvested and measured for shoot length, shoot weight, root length, root weight, numbers of leaves per plant, leaf area, root gall number per plant, nematode population in roots and rhizospheric soil, leaf chlorophyll content, leaf sugar, protein content and root protein content. Analysis of the data showed a strong association between the use of Cina 200C, a reduction in nematode population, and a significant reduction in their effects. The data also showed that these effects were transferred through water.

18. Fagan V, et al. **High dilution of Belladonna affect the mycelial growth of *Corynespora cassiicola* in-vitro.** *Int J High Dilution Res*, 2011, 10, 36, 245-248. Proceedings of the XXV GIRI Symposium and VIII CBFH; 2011, Sep 04-07; Foz do Iguacu (Brazil) 245. In this work from the State University of Maringá in Brazil, researchers sought to trial the use of homeopathically prepared Belladonna against the growth of spores from the fungus *Corynespora cassiicola*, which is associated with Target Spot disease, a problem that causes infection in various crops such as soybeans and is endemic to Brazil. This is a significant issue for organic farmers who are prohibited from using agricultural chemicals to control it. To test the effectiveness of this protocol, agar growth plates were produced and to these were added filtered Belladonna in 6X, 12X, 24X or 30X potencies or a filtered control (distilled water). The fungal isolate was peaked and grown and a disc of the fungal mycelia placed in the centre of each plate. The plates were incubated and checked daily for fungal growth from the disc for 12 days. The results showed that all of the potencies of Belladonna were effective in

reducing the mycelial growth of the fungus when compared to control, with the best results achieved with the 30X potency.

19. Barbosa IS, et al. **Evaluation of the effects of homeopathic medicines on the germination seeds of *Brassica oleracea* L. ar. *Italica*.** *Int J High Dilution Res*, 2012, 11, 40, 213-214. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). Scientists from the Federal Institute of Rio de Janeiro in Brazil, in an effort to reduce the dependence on agricultural chemicals, designed an experiment to determine the effects of homeopathically prepared Phosphorus on the germination of seeds from *Brassica oleracea* (Broccoli). Broccoli seeds were grown in multiple sets and exposed to Phosphorus 6C, 30C, 200C or 2 controls, every 2 days for 10 days, and assessed for germination percentage and germination speed index. An analysis of the results showed that when compared to the controls, seeds under the influence of Phosphorus 6C showed a significant increase in germination speed.

20. Datta S, et al. **Potentized Sucrose alters growth, sugar, protein and chlorophyll content in cowpea seedlings.** *Int J High Dilution Res*, 2013, 12, 44, 137-138. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 137. Scientists from Calcutta University performed this work to measure the effects of homeopathically prepared sucrose on various physiological parameters in cowpea seedlings. To do this, cowpea seeds were sterilized and allowed to germinate in petri dishes over moist filter papers. Immediately after germination they were divided into two groups. While one group was treated with *Sucrose* 30C diluted with distilled water 1:500, the other group was treated with *Ethanol* 30CH, diluted with water 1:500. After treatment the seedlings were transferred to separate petri dishes and allowed to grow for 72 hours. Samples of seedlings from each treatment group were weighed, kept at 70 degrees Celsius for 24 hours and weighed again. Another sample from each group was analysed for their sugar, protein and chlorophyll content. Leaf and cotyledon sections were examined for changes in the epidermal cells of cotyledons and density and morphology of stomata. It was shown that Sucrose 30C induced significant changes in water content, chlorophyll, sugar and protein content in the seedlings as compared to the control. Sucrose 30C also increased stomata density in the leaves significantly and there was a marked change in the structure of epidermal cells of cotyledons.

21. Jager T, et al. **Comparative Study of Two Bioassays with Weakened Duckweed and Yeast Treated with Homeopathic Preparations.** *Homeopathy*, 2014, 103, 1, 71. Swiss and German researchers in this study examined the hypothesis that more complex organisms show stronger reactions to homeopathic medicines than less complex ones by comparing the response to two homeopathic preparations of Arsenic (As5+) stressed bioassays with duckweed (*Lemna gibba*, a multicellular autotrophic organism) and yeast (*Saccharomyces cerevisiae*, a singlecellular heterotrophic organism). For duckweed, growth rates of leaf area and leaf number were evaluated. For yeast, growth kinetics were determined by measuring slope, yield and Et50 (point in time when yield was half maximum) of the sigmoid growth curve. The experiments with duckweed and yeast were performed in parallel (same day, same location and identical homeopathic preparations). After screening 17 substances, three homeopathic preparations (*Arsenicum album*, *nosode*, and *Gibberellic acid*) were chosen for a repeated experimental series. Five independent experiments were conducted for each medicine with both organisms in parallel. Potency levels used were in the range of 17X to 33X for duckweed and 17X to 30X for yeast. To control for test system stability, systematic negative control experiments were conducted over the complete experimentation period. All experiments were blinded and randomised. The systematic negative control experiments did not yield any significant effects. The application of potentised *Arsenicum album* in the duckweed bioassay yielded the largest effects compared to water controls without medicines for the parameters, leaf area and leaf number ( $p < 0.001$ ). Potentised *nosode* preparations also had significant effects on duckweed's leaf area and leaf number

( $p < 0.01$ ). Growth was enhanced across all potency levels. In the yeast system the three homeopathic medicines did not show any significant effects on any growth curve parameter. The results obtained are in line with the hypothesis, that more complex organisms show stronger reactions to homeopathic remedies than less complex organisms..

22. Dinelli G, et al. **Different Approaches in Homeopathic Basic Research: Plant-Based Bioassays and Evaporation-Induced Crystallization.** *Homeopathy*, 2016, 105, 12. Italian researches from the University of Bologna carried this work out to confirm the effects of homeopathically prepared Arsenic in the form of As<sub>2</sub>O<sub>3</sub> 45X on the growth of wheat seedlings. The results demonstrated a significant increase of germination rate and stalk growth with respect to control. Further work was done using this model to determine the effects of temperature, the time taken for the germination effects to become apparent, succussion number and potency level, as well as gene expression, on the wheat-germination effects of As<sub>2</sub>O<sub>3</sub>. From these experiments it was shown that As<sub>2</sub>O<sub>3</sub> 45X heated to 20 degrees C, 40 degrees C and 70 degrees C, induced a significant increase of germination rate vs. control, losing its effectiveness at 100 degrees C. As<sub>2</sub>O<sub>3</sub> 45x induced a stimulating effect on germination, that reached significance only after three months from beginning treatment. In regard to the number of succussions used to prepare the As<sub>2</sub>O<sub>3</sub>, a significant increase of germination was obtained starting from 32 succussions between each dilution step for As 45x. Homeopathic potencies from 5X to 60X were prepared and the data showed an oscillatory trend, with some potencies inducing a significant decrease (35X), while others a significant increase of germination rate (5X, 30X, 40X, 45X, 55X, 60X). In regard to gene expression, a massive reduction of gene expression levels to values comparable to those of the control group, induced by As<sub>2</sub>O<sub>3</sub> 45x, was observed for several functional classes of genes. In an extension to this, the research team sought to verify whether the droplet evaporation method (DEM) for crystal formation can be applied to assess the effectiveness of homeopathic medicines. They studied the shape characteristics of the polycrystalline structures formed during droplet evaporation of wheat seed leakages. The results showed that As<sub>2</sub>O<sub>3</sub> 45x increased the local connected fractal dimension levels and bilateral symmetry exactness values in the polycrystalline structures, as compared to the water treatment.

23. Marotti I, et al. **Transcriptome Profiling Of Wheat Seedlings Following Treatment With Ultrahigh Diluted Arsenic Trioxide.** *Evid Based Complement Altern Med*, 2014:851263. doi: 10.1155/2014/851263. This Italian study, conducted by workers from the University of Bologna and others, was done to test whether 7-day-old wheat seedlings, grown from seeds either poisoned with a sublethal dose of As<sub>2</sub>O<sub>3</sub> (Arsenic trioxide or Arsenicum album) or un-poisoned, showed significant differences in gene expression profiles after the application of homeopathically prepared As<sub>2</sub>O<sub>3</sub> compared to water (control). The results provided evidence for a strong gene modulating effect of ultrahigh diluted As<sub>2</sub>O<sub>3</sub> 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 homeopathically prepared As<sub>2</sub>O<sub>3</sub> treatment induced a re-equilibration of those genes that were up-regulated during the oxidative stress by bringing the expression levels closer to the basal levels normally occurring in the control plants.

24. Gupta VK, et al. **Dose-dependent effect of homoeopathic drug Zinc sulphate on plant growth using Bacopa monnieri as model system.** *Ind J Res Hom*, 2014, 8, 19-23. Indian researchers analysed the effects of a homeopathic preparation of Zinc sulphate on plants through in-vitro assay using Bacopa monnieri as a model plant system. Six homeopathic potencies (1X to 6X) of Zinc sulphate were used along with the control (MS basal agar medium). The samples were evaluated by adding a fixed amount (100 µl) 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. 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.

25. Lutz B, et al. **Development of a whole plant bioassay to test effects of potentized calcium carbonate in pillule formulation.** *Complement Ther Med*, 2018, Oct, 40, 13-21. The aim here was to assess a preclinical test system to identify and investigate the effects of homeopathically potentised substances, specifically, a plant bioassay and its capacity to distinguish homeopathic remedies from placebo, applied as sucrose pillules. Pea seeds (*Pisum sativum* L) were soaked for 24 hours in water with dissolved homeopathic or placebo pillules, or in water only. Shoot length was measured 14 days after planting and treatment groups were compared by analysis of variance (ANOVA). The stability of the system was validated by systematic negative control experiments. A screening of 13 potentised preparations showed that Calcium carbonicum influenced pea shoot growth ( $p < 0.05$ ). 3 independent series of main experiments were performed with homeopathically potentised Calcium carbonicum to assess reproducibility. A meta-analysis of all data revealed significant effects of Calcium carbonicum 12C and 30C on pea shoot growth.

26. Jager T, et al. **Effects of Homeopathic Preparations of Mercurius corrosivus on the Growth Rate of Severely Mercury-Stressed Duckweed Lemna gibba L.** *Homeopathy*, 2019, 108, 2, 128-38. Duckweed (*Lemna gibba* L.) was severely stressed with mercury(II) chloride for 48 hours. Afterwards plants grew in either Merc-c. (seven different potency levels, 24X to 30X) or water controls (unsuccussed and succussed water) for 7 days. Growth rates of the frond (leaf) area were determined using a computerised image analysis system for different time intervals between the measurements on days 0, 3 and 7. 3 independent experiments with potentised Merc-c. each were evaluated. Additionally, 3 water control experiments were analysed to investigate the stability of the experimental set-up (systematic negative control [SNC] experiments). All experiments were randomised and blinded. Unsuccussed and succussed water did not significantly differ in terms of duckweed growth rate. The SNC experiments did not yield any significant effects, providing evidence for the stability of the experimental system. Data from the two control groups and the seven treatment groups (Merc-c. 24x-30x) were each pooled to increase the statistical power. Duckweed growth rates for day 0 to 3 were reduced ( $p < 0.05$ ) after application of Merc-c. compared with the controls. Growth rates for day 3 to 7 were not influenced by the homeopathic preparations.

## In-Vitro Studies

1. Aziz DM, Enbergs H. **Stimulation of bovine sperm mitochondrial activity by homeopathic dilutions of monensin.** *Homeopathy*, 2005, 94, 4, 229-32. Mitochondrial activity is an important marker for the health of sperm. It's linked to sperm motility and in research laboratories monensin is commonly used as an inhibitor for sperm mitochondrial activity. The researchers in this study examined the effects of the 5X to the 14X homeopathic potencies of monensin on the activity of the mitochondria of sperm taken from mature bulls. All of the potencies produced a stimulatory effect on the bull sperm mitochondrial activity, with the 9X producing the strongest of these effects

2. Belon P, et al. **Inhibition of Human Basophil Degranulation by Successive Histamine Dilutions.** *Inflammation Research*, 1999, 48, Supplement 1, S17-18. In this controversial, blinded multi-centre trial (which confirmed earlier studies published in Nature in 1988), homeopathic potencies of histamine were found to substantially reduce the potential for degranulation by sensitised basophils when exposed to allergens.

3. Belon P, et al. **Histamine Dilutions Modulate Basophil Activation.** *Inflammation Research*, 2004, 53, 5, 181-8. In this study, which was a replication of work by Jacques Benveniste published in Nature

in 1988, the researchers attempted to use homeopathic dilutions of histamine to inhibit the activation of human basophils exposed to an inflammatory mediator. The study was carried out blind in 4 separate laboratories. Histamine dilutions equivalent to 30X and 38X were found to inhibit basophil activation and subsequent histamine release.

4. Casaroli-Marano RP, Alegre J, Campos B. **Infrared Changes in Potentised Solutions.** *Revista Homeopatica*, 1998, 38, 5- 12. In this experiment, 70% alcohol/water solutions were serially diluted 1 in 100 up to 30 times, with and without succussion at each step. On examination of each of these significant spectral differences were found between the solutions that were succussed and those that were not, indicating that dilution and succussion may produce structural changes to the molecules in the solution. This may provide further evidence for the possibility of a "memory" of water.

5. Chirila M, et al. **The Action of Succussed Substances on the Human Lymphocytes and PMN Granulocytes in-vitro Stimulated with Phytohaemagglutinin (PHA) and Zymosin Opsonised (ZO).** *Berlin Journal on Research in Homoeopathy*, 1991, Congress Report, 1, 3, 166-167. Peripheral blood lymphocytes were taken from people with a history of allergy to bee products (Group 1), and from people who were immunosuppressed (Group 2). These cells were incubated in culture media supplemented with a succussed water control, various homoeopathic potencies of bee venom (for Group 1 cells), or cortisone (for Group 2 cells), and the cells were grown. The proliferation of Group 1 cells was inhibited by the potencies of bee venom, indicating that these remedies may be useful in the management of allergies to bee products. The effects of the potencies of cortisone on the Group 2 cells varied from stimulation to inhibition.

6. Chirumbolo S, et al. **Effects of Homoeopathic Preparations of Organic Acids and Minerals on the Oxidative Metabolism of Human Neutrophils.** *British Homeopathic Journal*, 1993, 82, 4, 237-244. The in-vitro adhesion and superoxide production of human neutrophils were monitored in the presence of various homoeopathic medicines. Of these, Sulphur 6X, Manganum phos 6X and 8X, and Magnesium phos 6X and 8X all lead to a 15-30% increase in these parameters.

7. Delbancut A, et al. **Mechanistic Approach to the Effect of High Dilutions of Cadmium to Protect from Cytotoxic Cadmium doses in Renal Tubular Cell Cultures.** *International Research Group on Very Low Dose and High Dilution Effects*, 1993 Giri Meeting, reported in *British Homeopathic Journal*, April, 1994, 83, 84-100, Material concentrations of cadmium have strong toxic effects on renal tubules. The researchers involved in this study found that pre-treatment with homeopathic cadmium 40X, and subsequent exposure to material concentrations of cadmium, led to a significant reduction in cadmium induced damage.

8. Enbergs H. **Effects of the homeopathic preparation Engystol on interferon-gamma production by human T-lymphocytes.** *Immunol Invest.* 2006, 35, 1, 19-27. In one of the few experiments carried out in this area to date, researchers conducting this study collected T-lymphocytes from 30 healthy human volunteers to investigate the ability or otherwise of a homeopathic combination product to increase the production of interferon-gamma from these cells. After exposure to various concentrations of this combination, when compared to control cells, interferon-gamma producing cell levels were increased by a means of 20.9% to over 24% with no dose-dependence of the effect at the concentrations tested.

9. Fougeray S, et al. **Effect of High Dilutions of Epidermal Growth Factor on in-vitro Proliferation of Keratinocyte and Fibroblast Cell Lines.** 6<sup>th</sup> Giri Symposium, Munich, Oct 1992, reported in *British Homeopathic Journal*, 1993, 82, 2, 125. In this experiment, it was shown that 19X and 45X

homeopathic potencies of Epidermal Growth Factor inhibited the proliferation of Keratinocyte and Fibroblast Cell Lines.

10. Fleisbach A, Fejfar V, Spranger J. **Effects of Homoeopathic Potencies: Growth of *Saccharomyces cerevisiae* in Potentised Copper Sulphate Dilutions.** *British Homeopathic Journal*, 2000, 89, Supplement 1, S65. Material concentrations of copper sulphate inhibit the growth of *Saccharomyces cerevisiae* and in this study, researchers determined what effect if any a homeopathic medicine made from copper sulphate would have on this organism. On exposure to homeopathically potentised copper sulphate, a potency dependant inhibition or enhancement of growth was seen.

11. Gebhardt R. **Antioxidative, antiproliferative and biochemical effects in HepG2 cells of a homeopathic remedy and its constituent plant tinctures tested separately or in combination.** *Arzneimittelforschung*, 2003, 53, 12, 823-30. This laboratory study examined the effect of a homeopathic combination product and its separate components for antioxidative, antiproliferative and biochemical effects on liver cells grown in laboratory tissue-culture. Protective effects against oxidation of the cells by tert-butyl hydroperoxide were shown by *Cardus*, *China* and *Nux mosch*, and the combination provided the same level of protection as these 3 individual remedies combined. *Cardus*, *Chelidonium*, *Colocynthis* and *Veratrum alb* all showed an antiproliferative effect against cell proliferation agents on the cells and the combination exhibited the same effect. *Cardus* and the combination both increased the conjugation effectiveness of glutathione.

12. Glatthaar-Saalmuller B, Fallier-Becker P. **Antiviral Action of *Euphorbium Compositum* and its Componentants.** *Forschende Komplementarmedizin Und Klassische Naturheilkunde*, 2001, 8, 207-212. In this in-vitro study, human cell cultures were infected with influenza A virus, respiratory syncytial virus, human rhinovirus or herpes simplex virus type 1, and then treated with *Euphorbium compositum*, a homeopathic complex. Various anti-viral drugs such as acyclovir, rabavirin and amatadine were used as positive controls against which to compare the results of the complex. When compared with control cells exposed to the same concentration of ethanol used in the complex, the homeopathic complex showed anti-viral properties comparable to the effects of the drugs against respiratory syncytial virus and herpes simplex virus type 1.

13. Glatthaar-Saalmuller B, Fallier-Becker P, Weiser M. **Influence of homeopathically processed Coenzyme Q10 on proliferation and redifferentiation of endothelial cells.** *Forsch Komplementarmed Klass Naturheilkd*, 2004, 11, 5, 267-73. CoEnzyme Q10, known for its ability to regulate cell metabolism and proliferation, was assessed for its ability to promote the same functions after being homeopathically potentised. Undifferentiated human umbilical vein endothelial cell cultures were exposed to various potencies of CoQ10 (5X to 10X) The cell division rate was then assessed by flow cytometry and cell differentiation determined by von Willebrand factor expression. The 7X to 10X potencies of CoQ10, and particularly the 8X potency, increased cell proliferation while none of the potencies appeared to enhance cell differentiation.

14. Moss VA, Roberts A, Simpson K. **Action of Remedies on Movement of Macrophages and Leucocytes.** *Homeopathy*, 2002, 91, 2, 113-114. Laboratory measurements of guinea pig macrophages and human leucocytes exposed to the homoeopathic remedies *Belladonna*, *Hepar sulph*, *Pyrogenium*, *Silica* and *Staphylococcinum*, showed that these remedies caused an increase in the movement of these cells through a Boyden micropore filter. This may indicate that the remedies produce an increase in this aspect of immune competence.

15. Oberbaum M, et al. **Antiviral activity of Engystol: an in-vitro analysis.** *J Altern Complement Med*, 2005, 1, 5, 855-62. Cultured tissue cells infected with herpes simplex virus 1 (HSV-1), human

rhinovirus (HRV), adeno 5 (A5V) and respiratory syncytial virus were exposed to Engystol, a homeopathic combination product. These cells were then assayed for virus clearance using plaque reduction, virus titration and Elisa methods. The results of these assays showed an 80% reduction in HSV-1 specific proteins, a 73% reduction in A5V specific proteins and a reduction in infectivity of RSV by 37% and HRV by 20%.

16. Pathak S, et al. **Ruta 6 selectively induces cell death in brain cancer cells but proliferation in normal peripheral blood lymphocytes: A novel treatment for human brain cancer.** *Int J Oncol*, 2003, 23, 4, 975-82. In this uncontrolled study, 15 people suffering from various intracranial tumours were treated with a combination Ruta 6C and homeopathic calcium phosphate. All forms of tumours, particularly gliomas, were found to regress under treatment with these medicines and the trial subjects also exhibited an increase in normal peripheral blood lymphocytes. Further examination of a possible mechanism for the tumour-killing effect of this combination found that it was due to cancer cell telomere erosion, causing a selective early death of these cells.

17. 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, 4, 439-444. In this study, potentised dilutions of *Apis mellifica* and Histamine were found to significantly reduce basophil degranulation in-vitro.

18. Ramachandran C, et al. **Investigation of cytokine expression in human leukocyte cultures with two immune-modulatory homeopathic preparations.** *J Altern Complement Med*, 2007, 13, 4, 403-7. The aim of the researchers from Miami Children's Hospital in Florida who carried out this study was to determine the effects of homeopathics on cellular signalling pathways, specifically, the effects of 2 anti-influenza homeopathic combination products on normal human leukocyte cultures. When the researchers compared the effects of the homeopathic combinations to 20% ethanol solvent controls, it was found that exposure to either of the homeopathic combinations stimulated the production of pro- and anti-inflammatory cytokines by these cells.

19. Singh LM, Gupta G. **Antiviral Efficacy of Homeopathic Drugs against Animal Viruses.** *British Homeopathic Journal*, 1985, July, 74, 168-174. Researchers at the Indian Central Drug Research Institute in Lucknow carried out this study to determine the inhibiting effects, if any, of various potencies of 10 homeopathic remedies on chicken embryo virus and simliki forest virus, a virus capable of causing encephalitis, paralysis and death in mice. Homeopathic typhoidinum 200C, hydrophobinum 1M, tuberculinum 1M, nux vomica 200C and malandrinum 1M all produced 100% inhibition of the chicken embryo virus.

20. Sukul NC, Sukul A, Sinhababu SP. **Potentised Mercuric Chloride and Mercuric Iodide enhance Alpha Amylase activity in-vitro.** *Homeopathy*, 2002, 91, 4, 217-220. In part a repetition of a trial published in 1954, researchers determined that Mercuric chloride 30C and Mercuric iodide 30C, both of which theoretically should contain no molecules of either of the original substance, were able to promote the hydrolysis of starch in-vitro. This tends to support the view that the water molecules in the remedy retain the "memory" of the original molecule through the homeopathic potentiation process.

21. Sunila ES, et al. **Dynamized Preparations in Cell Culture.** *Evid Based Complement Alternat Med*, 2009, 6, 2, 257-263. This article describes a series of tests carried out at the Amala Cancer Research Centre in Kerala, India, on cells grown in the laboratory using various homeopathically prepared medicines to ascertain their effects on these cells. Mother tincture, 30C and 200C potencies of various substances as well as potentised alcohol controls were separately added to the individual growth media in which certain lymphoma, carcinoma, fibroblast and ovary cells were grown. After analysing

the effects of these materials on the various cell cultures, it was found that some of these caused significant cell death during short and long term incubation when compared to alcohol controls. It was also found that some of the test materials inhibited thymidine uptake in lung fibroblasts (therefore inhibiting growth), Thuja, Hydrastis and Carcinosin specifically, induced cell death in lymphoma cells, and Carcinosin was able to induce the expression of p53, which has been found to be capable of causing tumour suppression.

22. Walchli C, Baumgartner S, Bastide MJ. **Effect of low doses and high homeopathic potencies in normal and cancerous human lymphocytes: an in-vitro isopathic study.** *Altern Complement Med*, 2006, 12, 5, 421-7. The aim of this study was to determine the effect of pretreatment with either low doses, or homeopathic potencies, of cadmium chloride on the ability of normal lymphocyte or cancerous lymphocyte cultures to withstand exposure to toxic doses of cadmium. Normal lymphocytes exposed to toxic levels of cadmium which were pretreated with either low dose of cadmium or potentised cadmium showed a significant increase in viability. This effect was the same in the cancerous lymphocytes except that these cells showed no increase in viability after pre-treatment with potentised cadmium.

23. Witt CM, et al. **The In-Vitro Evidence for an Effect of High Homeopathic Potencies--a Systematic Review of the Literature.** *Complementary Therapies in Medicine*, 2007, 15, 2, 128-38. This was essentially a meta-analysis of all of the in-vitro studies that have attempted to demonstrate a homeopathic effect to date, carried out by Professor Claudia Witt and colleagues at the Department of Epidemiology and Health Economics, Charité University Medical Center in Berlin, Germany. The aim here was to search all appropriate databases for relevant studies, determine which studies met the quality criteria set by the researchers, and then to determine which, if any of these, exhibited a statistically significant effect in this area. 67 papers were identified that met the quality criteria and of these, 73% found that an effect from high potencies can be demonstrated. The majority of these studies involved the effects of potentised substances on basophils. Replication of some of these studies has been carried out.

24. Khuda-Bukhsh AR, et al. **Analysis of the capability of ultra-highly diluted glucose to increase glucose uptake in arsenite-stressed bacteria Escherichia coli.** *Journal of Chinese Integrative Medicine*, 2011, 9, 8, 901-912. Scientists from the University of Kalyani in India and Boiron Labs in France conducted this analysis to determine the effects of homeopathically prepared glucose 30C on glucose uptake in E.coli. The bacteria were stressed by exposure to sodium arsenite thus increasing their glucose uptake. They were then exposed to a 1% glucose solution, 3% glucose solution, homeopathically prepared glucose 30C, or an inactive control. Glucose uptake, specific activities of hexokinase and glucokinase, membrane potential, intracellular adenosine triphosphate (ATP) and expression of glucose permease in E. coli were then analysed at two different time intervals. On examination of the results it was shown that when compared to controls, glucose 30C was associated with changes similar to those induced by the 1% and 3% glucose solutions.

25. de Oliveira CC, et al. **Developments on drug discovery and on new therapeutics: highly diluted tinctures act as biological response modifiers.** *BMC Complement Altern Med*, 2011, Oct 26; 11:101. In this trial, researchers from the Universidade Federal do Paraná in Brazil used mice as well as human and mouse derived immune cells to determine the effects of three combinations of homeopathically prepared substances on various immune functions of the cells in-vitro and the mice in vivo. Human leukemia cells, cancer cells and normal human macrophages were cultured and exposed to the three combinations, labelled as M1, M2 and M8. Mice were exposed to M1, M2 and M3 and their macrophages, lymph nodes and bone marrow cells assessed with specific reference to cell viability, oxidative response, lipid peroxidation, bone marrow and lymph node cells immunophenotyping.

Assessment on all human derived cells was via cytotoxicity, cytokines released and NF kappa B activation after in-vitro treatment. Controls were used, multiples of tests were carried out and the researchers were blinded to the sources of the materials tested. On final analysis and in comparison to controls, no cytotoxicity to the homeopathic complexes were seen and all three complexes were associated with a significant stimulation of specific aspects of both in-vitro and in vivo immune functions.

26. Ive EC, Couchman IM, Reddy L. **Therapeutic Effect of Arsenicum album on Leukocytes.** *Int J Mol Sci*, 2012, 13, 3, 3979-87. Scientists from South Africa's Durban University of Technology performed this in-vitro study to determine the effects of various succussed and unsuccussed homeopathically prepared Arsenic trioxide (Arsenicum album) on human T lymphocytes grown in tissue culture. Cells were intoxicated with arsenic trioxide and then exposed to succussed and unsuccussed Arsenicum 6C, succussed and unsuccussed Arsenicum 30C, succussed and unsuccussed Arsenicum 200C or a control substance for 24, 48 or 72 hours. Cells were assessed for viability at baseline and at these three data points. After the counts from these data points were assessed it was shown that when compared to controls, all of the homeopathically prepared Arsenicum potencies provided a statistically significant increase in cell viability. These results were unaffected by whether the material was succussed or unsuccussed, but were affected by the length of exposure time to the remedy.

27. De A, et al. **Potentized homeopathic drug Arsenicum Album 30C inhibits intracellular reactive oxygen species generation and up-regulates expression of arsenic resistance gene in arsenine-exposed bacteria Escherichia coli.** *Zhong Xi Yi Jie He Xue Bao*, 2012, 10, 2, 210-27. In more useful work from India's University of Kalyani, researchers looked into the effects of homeopathically prepared Arsenic trioxide (Arsenicum album) on arsenic toxicity in E. coli. The bacteria were grown in a sub-bacteriocidal concentration of sodium arsenite and exposed to Arsenicum 30C or several controls via a randomised schedule and were assessed for glucose uptake, specific activities of hexokinase, lipid peroxidase, superoxide dismutase and catalase, intra- and extra-cellular sodium arsenite content, cell growth, cell membrane potential, DNA damage, intracellular reactive oxygen species, adenosine triphosphate, free glutathione content and expressions of arsB and ptsG genes. On analysis and in comparison to the controls used, it was found that the use of Arsenicum 30C was associated with a reduced arsenic toxicity in E. coli by inhibiting the generation of reactive oxygen species and increasing the tolerance to arsenite.

28. Coelho Moreira CO, et al. **Lymphocyte proliferation stimulated by activated Cebus apella macrophages treated with a complex homeopathic immune response modifiers.** *Homeopathy*, 2012, 101, 1, 74-9. In more work done to validate the effects of the homeopathic combination, Canova, researchers at Brazil's Universidade Federal do Pará investigated the in-vitro effects of this product on macrophages and the subsequent effects of these upon lymphocytes. Macrophages from tufted capuchin monkeys in culture were exposed to Canova. These macrophages were then co-cultured with peripheral blood lymphocytes. The analysis of Canova effects in the cultured lymphocytes was performed according to the cell cycle phase using flow cytometry and further assessed by enzyme-linked immunosorbent assay for Interferon gamma and Interleukin-5 cytokines. On examination of the results it was shown that the use of Canova was associated with an increase in the number of proliferation lymphocytes and in the levels of interferon gamma and interleukin-5 cytokines.

29. Guimarães FS, et al. **Stimulation of lymphocyte anti-melanoma activity by co-cultured macrophages activated by complex homeopathic medication.** *BMC Cancer*, 2009, Aug 22, 9, 293. This study, carried out by a team from Brazil's Universidade Federal do Paraná, sought to determine the effects of a complex of homeopathically prepared ingredients on the in-vitro response to melanoma cells. To do this, mouse lymph node lymphocytes were co-cultured with macrophages in the presence

or absence of the homeopathic complex, and B16F10 melanoma cells; a particularly aggressive melanoma cell line. When compared to controls, it was found that the lymphocyte and macrophage cultures exposed to the homeopathic complex had greater anti-melanoma activity, reducing melanoma cell density and increasing the numbers of lysed tumour cells.

30. Frenkel M, et al. **Cytotoxic effects of ultra-diluted remedies on breast cancer cells.**

*International Journal of Oncology*, 2010, 36, 2, 395-403. This University of Texas study was done to determine the in-vitro cytotoxic effects of homeopathically potentised Carcinisin 30C, Conium 3C, Phytolacca 200C, Thuja 30C, and succussed and unsuccussed negative solvent controls on MCF-7 and MDA-MB-231 human breast adenocarcinoma cell lines in tissue culture and a normal human cell line in tissue culture. On analysis, it was shown the use of homeopathically prepared Carcinisin and Phytolacca were associated with a reduction in the viability of the adenocarcinomatous cells, an increase in the rate of cell death, a preferential loss of telomeric DNA and early apoptosis induction from and of these cells.

31. Venard C, et al. **Comparative Analysis of Gelsemine and Gelsemium sempervirens Activity on Neurosteroid Allopregnanolone Formation in the Spinal Cord and Limbic System.** *Evid Based Complement Alternat Med*, 2011, 2011:407617. Scientists at France's University of Strasbourg built on previous work done on Gelsemium by exposing rat limbic and spinal cord tissue to 5C, 9C and 15C homeopathic preparations of Gelsemium and gelsemine, one of Gelsemium's active constituents, to determine their effects on pain and anxiety at a cellular level. During this process it was shown that the 5C potencies of both remedies, and to a lesser extent the 9C potencies of both remedies, increased the conversion of progesterone to allopregnanolone in these tissues, indicating that exposure to these remedies was associated with an analgesic and anxiolytic effect.

32. Guimaraes F de SF, et al. **In-vitro and in vivo anticancer properties of a Calcarea carbonica derivative complex (M8) treatment in a murine melanoma model.** *BMC Cancer*, 2010, 10, 113 doi:10.1186/1471-2407-10-113. This Brazilian study adds to previous work done to determine the anticancer effects of a combination product containing 10 homeopathically potentised substances, of which Calc carb 5C is the primary ingredient. B16F10 melanoma cells (a particularly aggressive cell line) in tissue culture were co-cultured with macrophages and lymphocytes. These were exposed to the homeopathic combination product and the results compared with an uninoculated control. On analysis it was shown that the homeopathic combination product was associated with an increase in the capacity of the lymphocytes in the tissue culture to destroy growing cancer cells, as well as an increase in the proportion of CD25+ lymphocytes and an increase in lymphocyte viability.

33. Burbano RR, et al. **Lymphocyte proliferation stimulated by activated human macrophages treated with Canova.** *Homeopathy*, 2009, 98, 1, 45-8. In this study, researchers from the Universidade Federal do Pará in Brazil add to work previously done in this area by using a homeopathic mixture referred to as Canova (homeopathically potentised Aconitum napellus, Arsenicum album, Bryonia alba, Lachesis muta, Thuja occidentalis) to determine its effect on the mitotic index of phytohaemagglutinin-stimulated human lymphocytes. These lymphocytes were cultured in media containing Canova and their mitotic index was compared with lymphocytes cultured without it. The mitotic index is a measure of the proliferation status of a cell population. On analysis of the results it was found that the addition of Canova to the culture media was associated with an increase in the proliferation (mitotic) index.

34. Patil CR, et al. **Immunomodulatory activity of Toxicodendron pubescens in experimental models.** *Homeopathy*, 2009, 98, 3, 154-9. This adds to previous work done in this area and focuses on the capacity of raw and homeopathically prepared Rhus tox to modulate immune functions, using parameters such as chemotaxis, oxidative processes and phagocytosis as a means of measuring

outcomes. Mother tincture, 6C, 30C, 200C and 1M homeopathically prepared potencies of Rhus tox were used and all homeopathic potencies, apart from the 200C and 1M, as well as mother tincture, were found to intensify immune function.

35. Gupta G, Srivastava AK. **In-vitro activity of Thuja occidentalis Linn. against human pathogenic aspergilla.** *The Homoeopathic Heritage*, 2002, 27, 1, 5-12. This Indian research investigated whether or not homeopathically prepared Thuja has an in-vitro fungicidal effect on pathogenic *Aspergillus niger* and *flavus*. Pathogenic strains of these organisms were grown by standard laboratory means and were exposed to 30C, 200C, 1M, 10M and 50M homeopathically prepared potencies of Thuja occidentalis as well as two negative controls (water and ethanol) and a positive control (Ketoconazole). After incubation the cultures were measured to determine the extent of growth inhibition. All of the Thuja potencies showed some effect against both species of aspergillus, but when compared to the negative controls, the 30c and 200C potencies showed the greatest effect. In addition, the 30C potency proved to have a 93% equivalence to Ketoconazole and the 200C exhibited an 89% equivalence.

36. Queiroz AO, et al. **Evaluation of Trypanosoma cruzi 30dH biotherapeutic: an in-vitro study.** *Int J High Dilution Research*, 2006, 5, 17, 14-16. In this Brazilian study, researchers set out to determine whether or not exposure to a 30X homeopathically prepared medicine made from *Trypanosoma cruzi* had any effect on specific IgM and IgG antibody production in mice. The study confirmed the effect of this preparation and found that pretreatment with the *Trypanosoma cruzi* 30X was associated with a 50% reduction in mortality, an increase in specific antibody and a reduction in the numbers of the parasite in the blood of mice infected with this organism.

37. Chirumbolo S, et al. **Inhibition of CD203c membrane up-regulation in human basophils by high dilutions of histamine: a controlled replication study.** *Inflamm Res*, 2009, 58, 11, 755–764. This is one of quite a few studies that have been carried out to investigate the action of homeopathically prepared histamine on human basophils. In this paper, various homeopathic potencies of histamine and water controls were tested for their capacity to influence the responsiveness of basophils to anti-IgE antibodies. Assays were carried out using flow cytometry. After the results had been collected and calculations performed, it was revealed that histamine, homeopathically prepared to 2C, 12C, 14C, 15C and 16C, when compared to water controls, had a significant inhibitory capacity on the functions of human basophils.

38. Montagnier L, et al. **Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences.** *Interdiscip Sci Comput Life Sci*, 2009, 1, 2, 81–90. In this ground-breaking work by Nobel Prize winning scientist, Luc Montagnier, it was shown that bacterial DNA, at dilutions equivalent to those seen in 18X homeopathic potencies, has the capacity to emit objectively detectable and specific electromagnetic signals. This work goes some way towards confirming the notion that even at high dilutions, physical substances are capable of leaving an electromagnetic remnant of their physical form. In discussions on these findings, Montagnier was quoted as saying, "I can't say that homeopathy is right in everything. What I can say now is that the high dilutions are right. High dilutions of something are not nothing. They are water structures which mimic the original molecules."

39. Malarczyk E, Kochmanska-Rdest J, Wilkolazka AJ. **Influence of very low doses of mediators on fungal laccase activity - nonlinearity beyond imagination** *Nonlinear Biomedical Physics*, 2009, 3, 10, doi:10.1186/1753-4631-3-10. In this work, carried out in the Biochemistry Department of the Maria Curie-Skłodowska University in Poland, scientists looked at the capacity of very low doses of biochemical mediators to facilitate the action of the enzyme laccase, which is normally used in various

industrial applications. These mediators, ABTS and HBT, are normally used at material levels to facilitate the action of the enzyme, but in this study, it was shown that several homeopathic potencies of these mediators, homeopathically potentised to the equivalent of 1C to 10C, had the capacity to increase the activity of laccase. The potencies associated with the highest level of activity were HBT 7C and 8C, and ABTS 4C and 5C.

40. Hostanska K, et al. **Effect of two homeopathic remedies at different degrees of dilutions on the wound closure of 3T3 fibroblasts in *in-vitro* scratch assay.** *Int J High Dilution Res*, 2012; 11, 40, 164-165. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). Swiss scientists performed this trial to determine the extent to which two homeopathic combination products (Similisan Arnica plus and SIM WuS) could influence the activity of cultured fibroblasts, and thereby demonstrate a possible role in wound healing. In doing this, cell proliferation, cell migration and the wound closure promoting effect of the homeopathic preparations and negative controls were investigated on mouse fibroblasts. Cell viability was determined by WST-1 assay, cell growth was assessed using BrdU uptake, cell migration by chemotaxis assay and wound closure by CytoSelect Wound Healing Assay Kit which generated a defined wound area. All assays were performed in three independent controlled experiments. On analysis of the results, compared to the control, it was found that cell viability and proliferation were unaffected by either of the homeopathic combinations. Similisan did exert a stimulating effect on fibroblast migration (32% vs 15% for the control). Similisan also promoted *in-vitro* wound closure by 60% vs 22% for the control.

41. Coelho CP, et al. **Effect of homeopathic treatment used in commercial boar semen diluent on sperm viability.** *Int J High Dilution Res*, 2012, 11, 40, 174-176. Proceedings of the XXVI GIRI Symposium; 2012, Sep 20-22; Florence (Italy). This Brazilian study sought to determine the effects of homeopathically potentised material, Pulsatilla 6C, Avena sativa 6C, or a combination of the two, on the quality of boar semen. Semen samples were obtained from two 18 month old sexually mature boars and one dose of two globules of each of the test materials, plus a control, were added to individual aliquots of 100 mL of diluted boar semen, which were then chilled. All samples were labeled in codes for blinding. On analysis of the results the team discovered that when compared to controls, Pulsatilla 6C produced a statistically significant improvement in the quality of cooled and stored pig semen.

42. 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. The aim of this work was to determine if homeopathically prepared Thuja 30C could ameliorate benzo(a)pyrene (BaP)-induced DNA damage, stress and viability of perfused lung cells from mice. To do this, perfused normal lung cells from mice were cultured and exposed to BaP for 24 h. Thereafter, the intoxicated cells were either treated with Thuja 30C or a negative control. Assessment was via the measurement of reactive oxygen species (ROS) accumulation, total glutathione (GSH) content, and the production of heat shock protein (hsp)-90 as well as cell viability and other test parameters. It was shown that, when compared to the control, Thuja 30C significantly increased cell viability of BaP-intoxicated cells. Thuja 30C inhibited BaP-induced stress levels, by down-regulating ROS and hsp-90, and increasing GSH content. Thuja 30C itself had no DNA-damaging effect, and no direct drug-DNA interaction. However, it showed quite striking ability to repair the DNA damage caused by BaP.

43. Chakraborty I, et al. **High dilutions of homeopathic remedies induce relaxation of rat aorta precontracted with Noradrenalin.** *Int J High Dilution Res*, 2013, 12, 43, 44-51. Indian researchers looked at the effects of homeopathically prepared Aurum metallicum 30C and Lycopodium virginicum 30C on the isolated aorta of rats in an effort to determine the possible effectiveness of these medicines in

the management of hypertension. Isolated rings of aortic tissue were fixed in fluid and attached to a computer-monitored isometric transducer and then precontracted using noradrenalin. They were then exposed to the homeopathically prepared materials or a control substance and assessed for their extent of relaxation. The results showed that when compared to the control, both medicines produced significant relaxation of the aortic strips.

44. Rajan A, Bagai U. **Antimalarial potential of homeopathic medicines against schizont maturation of *Plasmodium berghei* in short-term *in-vitro* culture.** *Int J High Dilution Res*, 2012, 11, 41, 224-236. Scientists from the Department of Zoology in the Panjab University at Chandigarh in India performed this *in-vitro* experiment to discover what effect, if any, various dilutions of homeopathically prepared materials would have on the viability of *Plasmodium berghei*, a parasite commonly implicated in malaria, when compared to the action of chloroquine. Using the *in-vitro* schizont maturation inhibition assay, *P. berghei* was cultured, and at the intra-erythrocyte phase of its life cycle, exposed to mother tincture, 6C, 30C or 200C homeopathic preparations of *China officinalis*, *Chelidonium majus* or *Arsenicum album*, or material doses of chloroquine. Significant reduction of the growth of intra-erythrocyte stages of *P. berghei* was observed with the decreasing dilutions of mother tincture and the various potencies of *China*, *Chelidonium* and *Arsenicum*, exhibiting a dose-dependent effect. Maximum schizont maturation inhibition (80%) was observed with *China* mother tincture, *China* 30C and *Chelidonium* 30C, with chloroquine providing an inhibition of 95%. *Arsenicum* 30C provided an inhibition of 75%.

45. Bandyopadhyay B, et al. **Decreased intensity of Japanese Encephalitis virus infection in chick chorioallantoic membrane under influence of ultradiluted *Belladonna* extract.** *Ind J Res Hom*, 2010, 4, 2, 1-6. The inner membrane of the chicken egg (the chorioallantoic membrane) has long been used as a platform for viral research, with pock formation on these membranes registering the presence of viral growth. This tool was used by a team of Indian researchers looking at the potential of homeopathically prepared *Belladonna* to prevent the growth of Japanese Encephalitis virus (JEV). To do this, membranes were inoculated with *Belladonna* 3C, 15C, 30C, 200C or a control substance. They were then inoculated with JEV and incubated at 37 degrees Celsius for 14 days and examined for pock formation. When compared to the controls, it was found that the use of all of the *Belladonna* potencies was associated with a significant reduction in viral pock formation, indicating an inhibition of growth.

46. Naoual B, Stéphane C, Terzan L. **Assessment of anti-inflammatory activity of homeopathic *Arnica Montana*.** *Int J High Dilution Res*, 2013, 12, 44, 121-2. Proceedings of the XXVII GIRI Symposium; 2013, Sep 03-04; Bern (Switzerland) 121. This study was done in two parts; *in-vitro* and *in-vivo*. The aim of the *in-vitro* trial was to measure the effect of *Arnica montana* 5C on the expression of intracellular cell adhesion molecule (ICAM-1) in human umbilical vein endothelial cells (HUVECs). Intercellular adhesion molecule-1 (ICAM-1) plays an important role in the inflammatory process and immune response. These cells were cultured and exposed to either *Arnica* or a placebo and assayed for molecular expression, after which it was shown that *Arnica* significantly attenuated ICAM-1 expression in endothelial cells compared to placebo, thereby displaying a significant endothelial anti-inflammatory effect. The *in-vivo* part looked at the effect of different homeopathic potencies of *Arnica montana* versus placebo, in the regeneration of skeletal muscle and inflammatory parameters in rats after injury. The results for this part of the study weren't quite as successful as the *in-vitro* arm but did show an increase in the ratio of M2 to M1 macrophages, indicating a reduction in inflammation.

47. da Silva RMRJ, et al. **Analysis of *in-vitro* activity of high dilutions of *Euphorbia tirucalli* L. in human melanoma cells.** *Int J High Dilution Res*, 2011, 10, 36, 183-193 Proceedings of the XXV GIRI Symposium and VIII CBFH; 2011, Sep 04-07; Foz do Iguacu (Brazil) 183. Brazilian researchers set out to determine what effects, if any, homeopathically prepared potencies of latex and tincture of *Euphorbia*

tirucalli have on the proliferation of cultured human melanoma cells. The cultured cells were exposed to 5C, 15C and 30C homeopathic potencies of the latex and mother tincture as well as an ethanol and water control, and monitored via MTT assay for 24 to 72 hours. Compared to the control, all of the test solutions appeared to exert a proliferation inhibition, with the Euphorbia tirucalli 30C prepared from mother tincture exhibiting the strongest inhibition (32.1%).

48. Huh YH, Kim MJ, Yeo MG. **Homeopathic Rhus toxicodendron treatment increased the expression of cyclooxygenase-2 in primary cultured mouse chondrocytes.** *Homeopathy*, 2013, 102, 4, 248-53. In this in-vitro research, cultures of mouse chondrocytes were exposed to 4X, 30X, 30C and 200C homeopathic potencies of Rhus toxicodendron. Assessments were then made of the expression of collagen type II, a marker protein of chondrocytes, and cyclooxygenase-2 (COX-2), which is responsible for the biosynthesis of prostaglandin E2 (PGE2) and the regulation of the inflammatory response, using biochemical and immunological methods such as reverse transcription polymerase chain reaction (RT-PCR), quantitative (or real-time) RT-PCR (qRT-PCR) and immunoblot assays. The anti-inflammatory effects of the remedies were significant. All of the Rhus tox potencies, most notably the 30X, increased the mRNA expression of COX-2, and mRNA expression in both RT-PCR and qRT-PCR analyses. The 4X, 30X and 30C potencies inhibited collagen type II expression, suggesting that Rhus tox induced the dedifferentiation of chondrocytes. In addition, treatment with 30X Rhus tox significantly increased PGE2 release compared with other homeopathic dilutions of Rhus tox.

49. Arora S, et al. **Anti-proliferative effects of homeopathic medicines on human kidney, colon and breast cancer cells.** *Homeopathy*, 2013, 102, 4, 274-82. This study set out to investigate the potential cytotoxicity of homeopathic mother tinctures and 30C, 200C, 1M and 10M homeopathic potencies of Sarsaparilla, Ruta graveolens and Phytolacca decandra, against cell lines deriving from tumours of particular organs. Sarsaparilla was tested against ACHN cells from human renal adenocarcinoma as well as non-malignant Madin-Darby canine kidney (MDCK) cells. Ruta was tested against COLO-205 cells from human colorectal carcinoma, and Phytolacca was tested against MCF-7 cells from human breast carcinoma. Cytotoxicity was measured using the 3-(4, 5-dimethylthiazolyl)-2, 5-diphenyltetrazolium bromide (MTT) method, anti-proliferative activity by trypan blue exclusion assay, apoptosis determined by dual staining the cells with ethidium bromide (EB) and acridine orange (AO) dyes. On analysis it was found that all of the remedies tested (particularly the mother tinctures), produced cytotoxicity and a decrease in cell proliferation. Signs of apoptosis were evident including cell shrinkage, chromatin condensation and DNA fragmentation. The MDCK cells were unaffected by any of the Sarsaparilla potencies.

50. Bigagli E, et al. **Effects of Extreme Dilutions of Apis mellifica Preparations on Gene Expression Profiles of Human Cells.** *Dose-Response*, January-March, 2016, 1-7. Using whole-genome transcriptomic analysis, the authors of this work investigated the effects of a wide range of homeopathic preparations of Apis mellifica on the gene expression profiles of human cells. RWPE-1 cells, a non-neoplastic adult human epithelial prostate cell line, were exposed to Apis preparations (3C, 5C, 7C, 9C, 12C, 15C, and 30C) or to controls for 24 hours. Non-exposed cells were also checked for gene expression variations. The 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 when compared to non-exposed reference cells but not to reference solvent solutions.

51. Aziz DM, Schnurrbusch U, Enbergs H. **Effects Of Two Homeopathic Complexes On Bovine Sperm Mitochondrial Activity.** *Homeopathy*, 2012, 101, 2, 99-102. Workers from Boon and Leipzig Universities evaluated the effects of two homeopathic combination products on bovine sperm mitochondrial activity. To do this, bovine sperm viability, acrosomal integrity and sperm chromatin

structure, were assessed in-vitro before and after exposure to the homeopathic combination products. An analysis of the results showed that the homeopathic combinations stimulated the mitochondrial activity of bovine sperm without effects on their viability, acrosomal integrity or chromatin structure. The authors proposed the possibility that this translates into improved fertilization capacity in artificial insemination and should be further investigated.

52. Mohammadi R, Amini K, Charehsaz S. **Homeopathic Treatment for Peripheral Nerve Regeneration: an Experimental Study in a Rat Sciatic Nerve Transection Model.** *Homeopathy*, 2012, 101, 141-146. A research team composed of workers from Canada and Iran looked at the effects of homeopathic treatment with *Hypericum perforatum* 30C on peripheral nerve regeneration. Rats undergoing surgery were given either *Hypericum* 30C twice daily for 1 week or no homeopathic treatment, and assessed at 4, 8 and 12 weeks after the surgery. An analysis of the results showed that, when compared to what was seen in the untreated rats, the use of *Hypericum* 30C was associated with faster and better recovery of affected nerves. In addition, it was shown that the number and diameter of the myelinated fibres in the test rats were significantly higher than in the control group.

53. De Oliveira SM, et al, **Mercurius Solubilis: Actions on Macrophages.** *Homeopathy*, 2011, 100, 228-236. Brazilian scientists from the University of Parana investigated the effects of 6C, 12C, 30C and 200C homeopathic potencies of *Merc sol* on the functions of macrophages from mice. The animals were given the *Merc sol* potencies in their drinking water for 7 days and the macrophages in cell culture were similarly exposed. The macrophages from the mice and the cell cultures were assessed for their morphological activation, interferon gamma release, and interleukin 4 production, as well as their production of nitric oxide, superoxide and hydrogen peroxide production. All of these functions reflect the level of immune and homeostatic activity of these cells, and an analysis of the results from the macrophages from both the mice and the cell cultures showed that the homeopathic potencies of *Merc sol* modulate reactive oxygen species, reactive nitrogen species and cytokine production, which are central mediators of the immune system, wound healing and hormesis.

54. Oliosio D, et al. **Arnica Montana Effects on Gene Expression in a Human Macrophage Cell Line. Evaluation by Quantitative Real-Time PCR.** *Homeopathy*, 2016, 105, 131-147. This work from Italy examined the mechanism of action of various potencies of homeopathically prepared *Arnica* (2C to 15C) on wound healing. Quantitative Reverse Transcription Polymerase Chain Reaction (PCR) analysis was used to study the changes in the expression of a customised panel of key genes, mainly cytokines, receptors and transcription factors. The results showed that for macrophages differentiated towards the wound healing phenotype, *Arnica* affected the expression of several genes, in particular, CXC chemokine ligand 1 (CXCL1), coding for a chief chemokine, and that this exhibited the most consistent increase of expression, while CXC chemokine ligand 2 (CXCL2), Interleukin8 (IL8) and bone morphogenetic protein (BMP2) were slightly up-regulated, suggesting a positive influence of *Arnica* on neutrophil recruitment and on angiogenesis. MMP1, coding for a metalloproteinase capable of cleaving extracellular matrix substrates, was down-regulated.

55. Pastelin LD, Pichardo CO, Vel-azquez GA. **Evaluation of Cytotoxic and Apoptotic Effects of Several Homeopathic Dilutions of Echinacea Angustifolia on Human Breast, Cervical and Prostate Cancer Cells and Genotoxic Study of E. angustifolia MT.** *Homeopathy*, 2016, 105, 8. This Mexican study looked at the in-vitro anti-cancer effects of various homeopathically prepared potencies of *Echinacea* (mother tincture, 6C, 30C, 200C, and 1M) on different human cancer cell lines- MDA-MB-231 (Breast cancer), HeLa (Cervical cancer) and PC-3 (Prostate cancer). Cytotoxicity was measured using the 3-(4,5-dimethylthiazolyl-2)-2,5-phenyltetrazolium bromide (MTT) method. Apoptosis was determined by Annexin-V with flow cytometry. Cytotoxicity was measured on peripheral blood mononucleated cells (PBMC). Genotoxicity was evaluated by Ames test (in-vitro) and Micronucleus

assay (in vivo). The use of the Echinacea was associated with a viability reduction of between approximately 70 and 89% in the MDA-MB-231 cells, and a viability reduction of between approximately 40 and 96% for HeLa cells, when compared to controls. No viability reduction was seen in the PC-3 cells.

56. do Nascimento HF, et al. **In-vitro Assessment of Anticytotoxic and Antigenotoxic Effects of Canova.** *Homeopathy*, 2016, 105, 3, 265-269. This research sought to determine the in-vitro antigenotoxic and anticytotoxic effects of a combination of homeopathically prepared ingredients (Canova) on human lymphocytes exposed to N-methyl-N-nitrosourea (NMU). NMU is an N-nitroso compound, with genotoxic/mutagenic properties. Samples of human lymphocytes that were subjected to different concentrations of a mixture containing Canova and NMU were used. The genotoxicity/antigenotoxicity of Canova was evaluated by the comet assay, anticytotoxicity was assessed by quantification of apoptosis and necrosis using acridine orange/ethidium bromide. An analysis of the results showed that Canova significantly reduced DNA damage induced by NMU and significantly reduced the frequency of NMU-induced apoptosis after 24 hour of treatment.

57. Lima LF. **Comparison Between the Additive Effects of Diluted (rFH) 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, Apr, 25, 39-44. This study compared 2 types of recombinant follicle stimulating hormone (rFSH)- diluted and homeopathically potentised, on in-vitro development of ovine follicles. In the first experiment, ovarian fragments were cultured for 1 or 7 days in  $\alpha$ -MEM(+) in the absence or presence of different concentrations of diluted rFSH to determine the best concentration. In the second experiment, the effect of diluted and potentised rFSH (rFSH 6C), alone or in combination, was studied. 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. In experiment 2, compared to controls, rFSH 6C 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, rFSH 6C induced higher rates of follicle activation at day 1 of culture.

58. Mondal J, Samadder A, Khuda-Bukhsh AR. **Psorinum 6X Triggers Apoptosis Signals in Human Lung Cancer Cells.** *J Integr Med*, 2016, Mar, 14, 2, 143-153. This controlled study was conducted to examine the in-vitro effects of the homeopathic medicine, Psorinum 6X, on cancer cells. Cancer cell lines, including A549, HepG2 and MCF-7, were exposed to homeopathically prepared Psorinum 6X or a control, and the outcomes assessed using a 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay. The cell line that exhibited the greatest level of inhibition was selected and used in further assays to examine cell cycle arrest, cell death (apoptosis), generation of reactive oxygen species (ROS) and change in mitochondrial membrane potential (MMP), with assessment carried out by flow cytometry and fluorescence microscopy. 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. The results showed that Psorinum 6X triggered apoptosis in A549 cells via both up-regulation and down-regulation of relevant signalling proteins, including p53, caspase-3, Bax and Bcl-2.

59. 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, 42-47. A preosteoblastic mouse cell line, MC3T3-e1, was treated with different homeopathic potencies of Rhus tox and 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. The results showed that exposure to

different potencies of Rhus tox increased the expression of Cox2 mRNA, with Rhus tox 30X showing the most prominent increase in mRNA expression. In addition, treatment with Rhus tox 30X significantly increased prostaglandin E2 (PGE2) release compared with other homeopathic potencies. NO generation was dramatically decreased in MC3T3-e1 cells after Rhus tox treatment co-stimulated with lipopolysaccharide. Generally, exposure to homeopathically prepared Rhus tox was associated with a modulation of inflammation in the cell population that was studied.

60. Sikdar S, et al. **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, 17, 1, 59-69. Homeopathically prepared Condurango has a history of use in the treatment of cancer. This study looked at the relative capacity of two different homeopathic potencies of Condurango- 6C and 30C, to influence apoptosis of lung cancer cells in comparison to controls. To do this, 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenylte-trazolium bromide (MTT) assays were conducted on H460-non-small-cell lung cancer (NSCLC) cells by using a succussed ethyl alcohol vehicle as a negative 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 signalling markers were studied. The observations were done in a "blinded" manner. 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 medicines 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. It was also shown that Condurango 30C had greater apoptotic effect than Condurango 6C.

61. Frenkel M, et al. **Cytotoxic Effects of Ultra-Diluted Remedies on Breast Cancer Cells.** *Int J Oncol*, 2010, 36, 2, 395-403. This was an in-vitro study carried out by a joint US and Indian team to determine if homeopathically prepared materials prescribed by a clinic in India have any effect on breast cancer cell lines. The research team studied 4 medicines- Carcinosis 30C, Phytolacca 200C, Conium 3C and Thuja 30C, against two human breast adenocarcinoma cell lines (MCF-7 and MDA-MB-231) and a cell line derived from immortalized normal human mammary epithelial cells (HMLE). The medicines exerted preferential cytotoxic effects against the two breast cancer cell lines, causing cell cycle delay/arrest and apoptosis. These effects were accompanied by altered expression of the cell cycle regulatory proteins, including down-regulation of phosphorylated Rb and up-regulation of the CDK inhibitor p27, which were likely to be responsible for the cell cycle delay/arrest as well as induction of the apoptotic cascade that manifested in the activation of caspase 7 and cleavage of PARP in the treated cells.

62. Gonvalves JP, et al. **Differential effects of Zincum metallicum on cell models.** *Homeopathy*, 2017, 106, 3, 171-180. Researchers sought to investigate experimental end-points using cell-based models to determine the effects of dilutions of Zincum metallicum prepared according to the Brazilian Homeopathic Pharmacopoeia. Murine RAW 264.7 macrophages and melanoma B16-F10 cell lines were cultured according to standard procedures. Cells were treated with either 5C, 6C or 30C Zincum metallicum and control cells with its respective vehicle (5C, 6C, or 30C lactose). Macrophage activation by CD54 immuno-labelling and intracellular reactive oxygen species (ROS) using DCFH-DA (2,7-dichlorodihydrofluorescein diacetate) were detected by flow cytometry. Phagocytic capacity (endocytic index) was quantified by light microscopy. The features of melanoma cells were analysed by colorimetric assays to determine melanin content and cell proliferation rate. All obtained data were submitted to normality test followed by statistical analysis. An analysis of the results found that Zincum metallicum 6C shifted high ROS-producing macrophages to a low ROS-producing phenotype.

Macrophage CD54 expression was increased by *Zincum metallicum* 5C. No changes in endocytic index were observed. Melanoma cells were not affected by any treatment tested.

63. Chikramane PS, et al. **Metal nanoparticle induced hormetic activation: a novel mechanism of homeopathic medicines.** *Homeopathy*, 2017, 106, 3, 135-144. The team conducting this work sought to assess the effects of homeopathically potentised metals on cultured cells to answer the question of whether such negligible metal concentrations elicit a biological response. The effects of metal-based homeopathic medicines (30C and 200C) were analysed at doses between 0.003%v/v and 10%v/v in in-vitro HepG2 cell-line. Upon treatment, cell response was estimated by MTT assay, FACS and total intracellular protein. Experiments were performed to discern whether the hormesis was a cell-activation or a proliferation effect. Remedies at doses containing a few femtograms/ml levels of the starting metals induced a proliferation-independent hormetic activation by increasing the intracellular protein synthesis. The metal concentrations (at fg/ml) were a billion-fold lower than the studies with synthetic NPs (at µg/ml).

64. Khuda-Buksh AR, Mondal J, Shah R. **Therapeutic potential of HIV nosode 30c as evaluated in A549 lung cancer cells.** *Homeopathy*, 2017, 106, 4, 203-213. This research set out to determine if HIV nosode in 30C potency (HIV 30C) has therapeutic potential against lung cancer cells (A549) as compared to WRL-68 normal cells. The effects of HIV 30C were thoroughly tested for its possible anticancer potential on A549 cells (lung cancer); WRL-68 normal liver cells served as control. Three doses, one at LD50 and two below LD-50, were used. Proliferation, migration and senescence assays were made and the generation of reactive oxygen species (ROS) was studied by routine techniques. The ability of HIV 30C to induce apoptosis in A549 cells and its possible signalling pathway were determined using immunoblots of relevant signal proteins and confocal microscopy, including studies on telomerase reverse transcriptase (TERT) and topoisomerase II (Top II) activities, intimately associated with cell division and DNA replication. The results showed that HIV 30C prevented cancer cell proliferation and migration, induced pre-mature senescence, enhanced pro-apoptotic signal proteins like p53, bax, cytochrome c, caspase-3 and inhibited anti-apoptotic signal proteins Bcl2, TERT and Top II, changed mitochondrial membrane potential and caused externalization of phosphatidyl serine. It also induced apoptosis as evidenced from an increase in the numbers of cells with distorted membrane morphology, nuclear condensation, DNA fragmentation, and ROS, which is typical of apoptosis in progress.

65. Gupta G, et al. **Anti-candidal activity of homeopathic drugs: An in-vitro evaluation.** *Ind J Res Hom*, 2015, 9, 79-85. In this study, samples collected from the oral cavities and tongues of patients suspected of suffering from oral candidiasis, were incubated for growth of *Candida*. Fermentation and assimilation tests confirmed the species as *Candida albicans*. The disc method was used to assess the in-vitro anti-candidal effect of several homeopathic drugs in 30C and 200C potencies against the fungi in in-vitro conditions and compared with standard antifungal drug ketoconazole (control), rectified spirit (control/vehicle) and distilled water (vehicle) by "inhibition zone technique". The homeopathic drugs *Benzoicum acidum*, *Apis mellifica*, *Kali iodatum*, *Mezereum*, *Petroleum*, *Sulphur*, *Tellurium*, *Sulphur iodatum*, *Graphites*, *Sepia*, *Silicea* and *Thuja occidentalis* in 30C and 200C potencies were tested against *Candida albicans*. *Mezereum* in 30C and 200C potencies showed maximum inhibition of growth of *Candida albicans* followed by *Kali iodatum* 200C while *Kali iodatum* 30C and *Petroleum* 30C produced minimum inhibition.

66. Ganesan T, et al. **Homeopathic preparation of *Berberis vulgaris* as an inhibitor of Calcium oxalate crystallization: In-vitro evidence.** *Ind J Res Hom*, 2015, 9, 152-157. The aim here was to examine the potential role of the homeopathic preparation of *B. vulgaris* (mother tincture, 6C, 30C and 200C) on in-vitro Calcium oxalate (CaOx) crystallization. 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 spectrophotometric crystallization assays and to ascertain the potential role of *B. vulgaris* in CaOx crystallization. The crystallization studies performed indicate that *B. vulgaris* exert a strong inhibition of CaOx crystallization both at the level of nucleation and aggregation, at all potencies.

67. do Nascimento HFS, et al. **In-vitro assessment of anticytotoxic and antigenotoxic effects of CANOVA®.** *Homeopathy*, 2016, 105, 3, 265-269. Canova (CA) is a complex containing several homeopathic medicines, and is indicated in clinical conditions in which the immune system is impaired and against tumours. N-methyl-N-nitrosourea (NMU) is an N-nitroso compound, with genotoxic/mutagenic properties. This study evaluated the in-vitro antigenotoxic and anticytotoxic effects of CA in human lymphocytes exposed to NMU. Samples of human lymphocytes that were subjected to different concentrations of a mixture containing CA and NMU were used. The genotoxicity/antigenotoxicity of CA was evaluated via the comet assay, anticytotoxicity was assessed by quantification of apoptosis and necrosis using acridine orange/ethidium bromide. The use of CA was associated with a significant reduction in DNA damage induced by NMU and frequency of NMU-induced apoptosis after 24 h of treatment.

68. Wani K, et al. **Evaluating the anticancer activity and nanoparticulate nature of homeopathic preparations of Terminalia chebula.** *Homeopathy*, 2016, 105, 4, 318-26. The objective of this study was to investigate the anticancer activity of homeopathic preparations of Terminalia chebula (TC) and evaluate their nanoparticulate nature. Mother tincture (MT) and other homeopathic preparations (3X, 6C and 30C) of TC were tested for their effect on the viability of breast cancer (MDAMB231 and MCF7) and non-cancerous (HEK 293) cell lines by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. Cell growth assay was performed to analyse the effect of the different potencies on the growth kinetics of breast cancer cells. MT and 6C were evaluated for the presence of nanoparticles by using scanning electron microscopy (SEM) and transmission electron microscopy (TEM). MT decreased the viability of breast cancer (MDAMB231 and MCF7) and non-cancerous (HEK 293) cells. However, the other potencies (3X, 6C and 30C) decreased the viability of only breast cancer cells without affecting the viability of the non-cancerous cells. All of the potencies reduced the growth kinetics of breast cancer cells, more specifically at 1:10 dilution at 24, 48 and 72 h. Under SEM, MT appeared as a mesh-like structure whereas under TEM, it showed presence of nanoclusters. The 6C potency contained 20 nm sized nanoparticles.

69. Samidha J, et al. **Evaluation of melanogenic and anti-vitiligo activities of homeopathic preparations on murine b16f10 melanoma cells.** *European Journal of Pharmaceutical and Medical Research*, 2017,4, 7, 718. In this study, researchers from Mumbai set out to determine what effects, if any, homeopathic medicines had on vitiligo in cell culture using B16F10 melanoma cells, with the aim of increasing melanin production in these cells. The cells were exposed to mother tincture and 30C homeopathic potencies of Hydroquinone, Arsenicum sulphuratum flavum (ASF) or Phosphorous, and assessments made at 48 and 96 hours after exposure. Hydroquinone, ASF and Phosphorous 30C potencies were all associated with an increase in melanin content as compared to cell and vehicle controls, with a statistically significant increase seen with Hydroquinone and ASF. The mother tincture form of all 3 preparations produced a slight increase in the melanin content as compared to controls.

70. Bonafini C, Marzotto M, Bellavite P. **In-vitro effects of Zinc in soluble and homeopathic formulations on macrophages and astrocytes.** *Homeopathy*, 2017, 106, 2, 103-13. Zinc in soluble form ( $Zn^{2+}$ ) and homeopathic Zincum metallicum were tested on macrophages and astrocytes in order

to investigate their potential toxic or therapeutic effects. The team evaluated cell viability (WST assay), cytokine production such as tumour necrosis factor alpha (TNF- $\alpha$ ) and interleukin 10 (IL-10) by enzyme-linked immunosorbent assay (ELISA) and nitric oxide release by Griess reaction. The effect of zinc-depletion and high zinc pre-treatments on cell adaptation capability was also investigated. In THP-1 macrophage cell line and in human primary macrophages, Zn<sup>2+</sup> at sub-toxic doses (30  $\mu$ M) caused a stimulation of TNF- $\alpha$  and IL-10 with different dynamics reaching the maximum peak at the zinc concentration 100  $\mu$ M, before cell death. The highest doses (300  $\mu$ M) dramatically impaired cell vitality. Similar effects on cell viability were obtained also in C6 astrocytes, where Zn<sup>2+</sup> slightly increased nitric oxide release in cells activated by one of the pro-inflammatory stimuli used in a cellular model (interferon gamma plus TNF- $\alpha$ ). Zinc depletion markedly reduced IL-10 production and cell viability. Zincum metallicum did not cause toxicity in any cell type and showed some small stimulation in WST assay that was statistically significant in a few experimental conditions.

71. Betti L, et al. **Number of succussion strokes affects effectiveness of ultra-high-diluted arsenic on in-vitro wheat germination and polycrystalline structures obtained by droplet evaporation method.** *Homeopathy*, 2017, 106, 1, 47-54. The aim of this study was to investigate whether the number of succussion strokes applied after each dilution step when preparing homeopathic treatments influences the effectiveness of ultra-high-diluted (UHD) arsenic trioxide at the 45th decimal dilution/dynamisation (As<sub>2</sub>O<sub>3</sub> 45X). To do this, wheat seeds, previously stressed with ponderal As<sub>2</sub>O<sub>3</sub>, were treated with: As<sub>2</sub>O<sub>3</sub> 45X, H<sub>2</sub>O 45X (dynamised control), or pure water (negative control). The succussion was done manually, and various succussion durations (numbers of strokes) were tested for each treatment. Treatment effectiveness was tested blind using the in-vitro germination test and the droplet evaporation method (DEM). Data were processed by the Poisson test (germination test) and by two-way analysis of variance (DEM). The team evaluated both the in-vitro germination rate, by counting the non-germinated seeds, and the complexity of polycrystalline structures (PCS) (local connected fractal dimension (LCFD)) obtained by evaporating leakage droplets from stressed seeds that had been watered with the different treatments. A highly significant increase in germination rate was noted when the number of strokes (N<sub>S</sub>) was  $\geq 32$  for both As<sub>2</sub>O<sub>3</sub> 45X and H<sub>2</sub>O 45X, and a significant increase in the LCFD of PCS for As<sub>2</sub>O<sub>3</sub> 45X when the N<sub>S</sub> was  $\geq 32$  and for H<sub>2</sub>O 45X when it was 70. Both experimental approaches showed increased effectiveness for treatments prepared with a higher number of succussion strokes.

72. Olsen S. **Effects of ultra-high dilutions of sodium butyrate on viability and gene expression in HEK 293 cells.** *Homeopathy*, 2017, 106, 1, 32-6. Recent research has reported the capability of homeopathic medicines to modulate gene expression in cell cultures and this study examined whether ultra-high dilutions (30C and 200C) of sodium butyrate (SB) can affect the expression levels of genes involved in the acquisition of a senescence-associated secretory phenotype (SASP) in human embryonic kidney (HEK) 293 cells. Cell viability was evaluated using a 3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide (MTT) assay. The expression levels of TNF- $\alpha$ , interleukin (IL)-2, IL-4, IL-6 and IL-10 genes were determined by real-time PCR assay. Exposure to both 30C and 200C SB over 48 hours led to a significant decrease of the level of expression of TNF- $\alpha$  gene, while expression of IL-2 gene was increased when exposed to 30C SB, and expression of IL-10 gene was decreased when exposed to 200C SB. No changes in expression levels of genes were observed in cells treated with both 30C and 200C SB during the first 24 hours. The observed changes in gene expression levels after exposure to 30C and 200C SB during 48 hours suggest that extremely low concentrations of this agent can modulate the transcription of HEK 293 cells.

73. Pasetti TA, et al. **Action of antibiotic oxacillin on in-vitro growth of methicillin-resistant Staphylococcus aureus (MRSA) previously treated with homeopathic medicines.** *Homeopathy*, 2017, 106, 1, 27-31. The team sought to assess the effect of the homeopathic medicine Belladonna

(Bell) and a nosode (biotherapy) prepared from a multi-drug resistant bacterial species, methicillin-resistant *Staphylococcus aureus* (MRSA), on the same bacterium. Bell and MRSA nosode were prepared in 6C and 30C potencies in 30% alcohol and sterile water and tested on MRSA National Collection of Type Cultures (NCTC) 10442. The team assessed in-vitro bacterial growth, deoxyribonuclease (DNAase) and hemolysin activity, and in-vitro bacterial growth in combination with oxacillin (minimum inhibitory concentration - MIC). All values were compared to control: 30% alcohol and water. In-vitro growth of MRSA was statistically significantly inhibited in the presence of Bell and nosode 6C and 30C compared to controls ( $p < 0.0001$ ); and with a combination of Bell or nosode 6C and 30C and oxacillin ( $p < 0.001$ ). Bell 30C and nosode 6C and 30C significantly decreased bacterial DNAse production ( $p < 0.001$ ) and reduced red blood cell lysis. This showed that cultures of MRSA treated with Belladonna or MRSA nosode exhibited reduced growth in-vitro, reduced enzymatic activity and became more vulnerable to the action of the antibiotic, oxacillin.

74. Saha S, et al. **Contribution of the ROS-p53 feedback loop in thuja-induced apoptosis of mammary epithelial carcinoma cells.** *Oncol Rep*, 2014, 31, 4, 1589-98. Workers here examined the antitumorigenic activity of homeopathically prepared *Thuja occidentalis*, and the molecular mechanisms underlying thuja-induced apoptosis of functional p53-expressing mammary epithelial carcinoma cells were elucidated. Cells were treated with thuja or placebo at potencies of 6C or 30C or 200C at different concentrations (10, 15, 20 and 30  $\mu\text{l/ml}$ ) for different time-points (0, 6, 8, 12, 24, 36 and 48 h) to select the optimum time required for cell killing. The 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.

75. Samadder A. et al. **The potentized homeopathic drug, *Lycopodium clavatum* (5C and 15C) has anti-cancer effect on hela cells in-vitro.** *J Acupunct Meridian Stud*, 2013, Aug, 6, 4, 180-7. The purpose of this study was to evaluate whether homeopathically prepared *Lycopodium* 5C (LC5C) and 15C (LC15C) had any effect upon HeLa cells (a commonly used cell cancer line). Cells were exposed to LC-5C, LC-15C or to 30% succussed ethanol (control). The drug-induced modulation in the percent cell viability, the onset of apoptosis, and changes in the expressions of Bax, Bcl2, caspase 3, and Apaf proteins in inter-nucleosomal DNA, in mitochondrial membrane potentials and in the release of cytochrome-c were analysed by utilising different experimental protocols. Results revealed that the administration of LC-5C and LC-15C had little or no cytotoxic effect in normal peripheral blood mononuclear cells, but caused considerable cell death through apoptosis in 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. Thus, the homeopathic remedies LC-5C and LC-15C demonstrated their capabilities to induce apoptosis in cancer cells, signifying their possible use as supportive medicines in cancer therapy.

76. 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. In this study, scientists investigated the anti-cancer effect of various homeopathic potencies of *Ruta graveolens*

(Ruta) on COLO-205 (colon cancer cells) cell line, as evidenced by cytotoxicity, migration, clonogenicity, morphological and biochemical changes and modification in the levels of genes associated with apoptosis and the cell cycle. In COLO-205 cells maximal effects were seen with mother tincture (MT) and 30C potencies, wherein a decrease in cell viability along with a 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. The findings indicate that Ruta showed potential as a therapy against colon cancer.

**77. Bishayee K, Sikdar S, Khuda-Bukhsh AR. Evidence of an Epigenetic Modification in Cell-cycle Arrest Caused by the Use of Ultra-highly-diluted Gonolobus Condurango Extract.**

*Pharmacopuncture*, 2013, 16, 4, 7-13. This work was carried out to determine if homeopathically prepared Condurango 30C was capable of arresting the cell cycles in cervical cancer cells (HeLa cells) by triggering an epigenetic modification through a modulation of the activity of the key enzyme histone deacetylase 2 vis-a-vis the succussed alcohol (placebo) control. The team checked the activity of different signal proteins (p21(WAF), p53, Akt, STAT3) related to deacetylation, cell growth and differentiation by western blot and analysed cell-cycle arrest, if any, by fluorescence-activated cell sorting. After viability assays had been performed with Condurango 30C and with a placebo, the activities of histone de-acetylase (HDAC) enzymes 1 and 2 were measured colorimetrically. While Condurango 30C induced cytotoxicity in HeLa cells in-vitro and reduced HDAC2 activity quite strikingly, it apparently did not alter the HDAC1 enzyme; the placebo had no or negligible cytotoxicity against HeLa cells and could not alter either the HDAC 1 or 2 activity. Data on p21(WAF), p53, Akt, and STAT3 activities and a cell-cycle analysis revealed a reduction in DNA synthesis and G1-phase cell-cycle arrest when Condurango 30C was used at a 2% dose. In summary, Condurango 30C appeared to trigger key epigenetic events of gene modulation in effectively combating cancer cells, which the placebo was unable to do.

**78. Saha S, et al. Calcarea carbonica induces apoptosis in cancer cells in p53-dependent manner via an immuno-modulatory circuit. BMC Complement Altern Med**, 2013, Sep 21;13:230. The authors of this study attempted to evaluate the efficacy of Calcarea carbonica, a homeopathic medicine, as an anti-cancer agent and to delineate the molecular mechanism(s) underlying Calc carb-induced tumour regression via trypan blue dye-exclusion test, flow cytometric, Western blot and reverse transcriptase-PCR techniques. Further, siRNA transfections and inhibitor studies were used to validate the involvement of p53 pathway in Calc carb-induced apoptosis in cancer cells. The results confirmed a significant anti-cancer effect and that Calc carb induced a "two-step" mechanism of the induction of apoptosis in tumour cells, i.e., (1) activation of the immune system of the host; and (2) induction of cancer cell apoptosis via immuno-modulatory circuit in p53-dependent manner by down-regulating Bcl-2:Bax ratio. Bax up-regulation resulted in mitochondrial transmembrane potential loss and cytochrome c release followed by activation of caspase cascade. Knocking out of p53 by RNA-interference inhibited Calc carb-induced apoptosis thereby confirming the contribution of p53.

**79. Ahn KH, et al. Anti-proliferative effect of Klimaktoplan® on human breast cancer cells. Arch Gynecol Obstet**, 2013, 288, 4, 833-8. This study investigated the effects of a combination of potentised substances (Klimaktoplan) referred to by the authors as a "homeopathic product" on the proliferation of breast cancer (MCF-7) and non-malignant mammary epithelial cells (MCF-10A). MCF-7 and MCF-10A cells were cultured in 312.5, 625, and 1,250 µg/ml Klimaktoplan. 17-Beta estradiol (E2) and

medroxyprogesterone 17-acetate (MPA) were used for comparison with Klimaktoplan. E2 only (0.001, 0.01, and 0.1  $\mu\text{M}$ ), and the combination of E2 (0.001, 0.01, and 0.1  $\mu\text{M}$ ) and MPA (0.01, 0.1, and 1  $\mu\text{M}$ ) were tested. Control cells for Klimaktoplan and E2 groups were treated with dimethylsulfoxide (DMSO), and DMSO + ethanol was used for the combination group. Cellular proliferation was evaluated by the formation of insoluble formazan after incubation of 4 days. The results showed that Klimaktoplan had a concentration-dependent anti-proliferative effect on breast cancer cells at 625 and 1,250  $\mu\text{g/ml}$ , while not affecting the proliferation of non-malignant mammary cells at any tested concentration.

80. Toliopoulos IK, et al. **Stimulation of natural killer cells by homeopathic complexes: an in-vitro and in-vivo pilot study in advanced cancer patients.** *Cell Biochem Funct*, 2013, 31,8, 713-8. This research team evaluated the effects of 5 combinations of potentised substances, referred to here as "homeopathic complexes", on the functional activity of natural killer cells (NKC) in advanced cancer patients. These complexes were Coenzyme Compositum, Ubichinon Compositum, Glyoxal Compositum, Katalysatoren and Traumeel. Experimental procedures included in-vitro and in-vivo trials. The in-vitro trials were performed in NKCs isolated from 12 healthy volunteers and incubated with the 5 complexes. The in-vivo trials were performed in 15 advanced cancer patients supplemented for 3 months. All 5 complexes significantly increased the cytotoxic activity of the NKCs at the lowest NKCs/target cell ratio 12:1 ( $p < 0.05$ ). The order of activity was: Ubichinon Compositum, Glyoxal Compositum, Katalysatoren, Traumeel, and Coenzyme Compositum. In the advanced cancer patients, the complexes significantly increased NKCs cytotoxic activity.

81. Preethi K, et al. **Induction of apoptosis of tumour cells by some potentiated homeopathic drugs: implications on mechanism of action.** *Integr Cancer Ther*, 2012, 11, 2, 172-82. The homeopathic medicines, Ruta 200C, Carcininum 200C, Hydrastis 200C, Thuja 200C, and Thuja 1M, were tested for their ability to induce apoptosis as seen by cell morphology, DNA laddering, expression of genes related to apoptosis, and TUNEL assay. Similarly, the effect of these homeopathic medicines on apoptosis was measured by microarray analysis. In addition, the activity of Ruta 200C was compared with that of the mother tincture from which it is derived. An analysis of the results showed that Ruta 200C produced morphological changes in the Dalton's lymphoma ascites tumour cells and induced DNA laddering. Carcininum 200C increased apoptotic gene p53 and Ruta 200C decreased anti-apoptotic gene Bcl2. The administration of these medicines to tumour-bearing mice induced TUNEL-positive cells in the tumour, showing increased apoptosis of tumour cells. A microarray analysis of cells treated with the medicines indicated a strong correlation between the application of the medicines and an increase in the levels of many of the enzymes related to apoptosis. A comparison of the effects of Ruta 200C and mother tincture indicated that the potentiated drugs has a biological activity similar to that of the mother tincture.

82. Sekers S, et al. **Evidence that Extreme Dilutions of Paclitaxel and Docetaxel Alter Gene Expression of In-vitro Breast Cancer Cells.** *Homeopathy*, 2018, 107, 11, 32-39. This study investigated the effects of homeopathic preparations of the taxane anti-cancer drugs, which are not commonly used in homeopathic medicines, on mRNA expression profiles of five key genes (p53, p21, COX-2, TUBB2A and TUBB3) in the breast cancer cell line, MCF-7. To do this, MCF-7 cells were exposed to paclitaxel (Taxol) or docetaxel (Taxotere) preparations (6X, 5C and 15C potencies prepared from pharmacological concentration of 25 nmol/L) for 72 hours. The cell culture groups were evaluated with the trypan blue dye exclusion method for the proliferation/cytotoxicity rates, immuno-staining  $\beta$ -tubulin for microtubule organization, and reverse transcription polymerase chain reaction for gene expression levels. Fold-change in gene expression was determined by the  $\Delta\Delta\text{Ct}$  method. The administration of the preparations had little or no cytotoxic effect on MCF-7 cells, but altered the expression of genes analysed with a complex effect. According to the  $\Delta\Delta\text{Ct}$  method with a five-fold expression difference ( $p < 0.05$ ) as a cut-off level, preparations of paclitaxel and docetaxel showed

differential effects on the studied genes with a concentration-independent activity. Furthermore, the preparations disrupted the microtubule structure of MCF-7 cells, suggesting that they retain their biological activity. In conclusion, the team was able to demonstrate that gene expression alterations occur after exposure to homeopathic preparations of taxane drugs.

83. Dalboni LC, et al. **Biological Actions, Electrical Conductance and Silicon-Containing Microparticles of Arsenicum Album Prepared in Plastic and Glass Vials.** *Homeopathy*, 2019, 108, 1, 12-23. This research was carried out to determine if silica is present in homeopathic medicines produced in glass or plastic vials, had any effect on the activity of the homeopathic medicine contained therein, and what effect, if any, homeopathically prepared Arsenicum album had on macrophage activity. To do this, the research team compared the biological activity, electrical current and silicon microparticle content (by means of scanning electron microscopy/energy-dispersive X-ray spectroscopy) of high dilutions (HDs) of arsenic prepared in plastic and glass vials, to investigate the role of silica in their biological effects in-vitro. Co-cultures of macrophages and yeast (*Saccharomyces cerevisiae*) were treated with different HDs of arsenic prepared in plastic and glass vials. Macrophage morphology, phagocytosis index, nitric oxide (NO), and cytokine production were evaluated. Measurable amounts of silicon microparticles were detected only in the HDs prepared in glass vials, but ultra-centrifugation eliminated them. Specific and non-specific results were observed. Non-specific pro-inflammatory effects were seen in all dilutions prepared in plastic vials, including elevation of pro-inflammatory cytokines, NO and macrophage phagocytic index. Only the 200C potency of arsenic produced a specific decrease in interleukin-6 production in macrophages, and it was independent of the vial type or the presence of microparticles of silica in the medicine samples. In addition, the nature of the vials had an impact on the electric flow in the respective fluids.

84. Kishore L, Singh R. **Effect of *Cephalandra indica* against advanced glycation end products, sorbitol accumulation and aldose reductase activity in homoeopathic formulation.** *Ind J Res Hom*, 2018, 12, 1, 11-19. This study was designed to evaluate the potential of homoeopathic preparations of *Cephalandra indica* L. against oxidative stress. The antioxidant activity of *Cephalandra indica* (mother tincture, 6C and 30C) was evaluated by employing various in-vitro antioxidant methods. The mother tincture, 6C and 30C of *Cephalandra indica* were found to have strong reducing power, 2,2-diphenyl-1-picrylhydrazyl radical, hydrogen peroxide, nitric oxide and superoxide radical scavenging activity. The percentage inhibition of AGE formation by mother tincture, 6C and 30C of *Cephalandra indica* (10–50  $\mu$ l) was found to be 30.34%–91.77%, 29.98%–65.71% and 33.05%–57.75%, respectively. Mother tincture, 6C and 30C of *Cephalandra indica* showed an inhibitory effect against sorbitol accumulation with IC<sub>50</sub> value of 26.12  $\mu$ l, 203.10  $\mu$ l and 897.3  $\mu$ l, respectively, whereas, in aldose reductase inhibition assay, the IC<sub>50</sub> value was 32.54  $\mu$ l, 175.02  $\mu$ l and 834.34  $\mu$ l, respectively. The results revealed that homoeopathic preparations of *Cephalandra indica* exhibit a protective effect against oxidative stress.

85. Prajapati S, et al. **Antimicrobial activity of different homoeopathic drugs and their potencies against 'Aspergillus niger' In vitro.** *Ind J Res Hom*, 2019, 13, 3, 150-8. This study was undertaken with an aim to explore the antimicrobial effect of different homeopathic drugs and its potencies against the *Aspergillus niger*. 15 homeopathic mother tinctures ( $\Theta$ ) and their potencies (3x, 6x, 12x) were tested for their biological activity against the human pathogenic fungi *A. niger* using disc diffusion method according to clinical and laboratory standard (CLSIM44-A) with slight modifications. The diameter of zone of inhibition was measured and compared with vehicle control (Alcohol 90%). The experiment was performed twice to check the reproducibility. Marked antifungal activity was observed with  $\Theta$  of *Zingiber officinale*; the growth of *A. niger* was inhibited and showed maximum zone of inhibition up to  $15.4 \pm 2.88$  mm followed by *Holarrhena antidysenterica* ( $13.2 \pm 1.09$ ) and *Terminalia chebula* ( $10.6 \pm 1.14$ ). Different potencies (3x, 6x and 12x) were also exhibited significant zone of inhibition, especially *Allium cepa* 6x ( $10.4 \pm 0.89$ ), *Caesalpinia bonducella* 6x and 12x ( $12.8 \pm 0.54$  and  $10.4 \pm 1.14$ , respectively),

Eucalyptus globulus 12x ( $11.3 \pm 1.94$ ), Ruta graveolens 12x ( $15.0 \pm 2.23$ ), Thuja occidentalis 6x ( $10.8 \pm 0.83$ ), and Zingiber officinale 3x and 6x ( $13.0 \pm 2.73$  and  $11.4 \pm 2.30$ , respectively) as compared to control.

86. Gayen AL, et al. **Effect of Cuprum metallicum potentised through both serial dilution and succussion in comparison to succussion alone on Escherichia coli bacterial system and electrical properties of poly (vinylidene fluoride-co-hexafluoropropylene) polymer.** *Ind J Res Hom*, 2019, 13, 4, 209-18. The aim here was to compare the effect of the medicine Cuprum metallicum (Cup. met.) potentised through both serial dilution and succussion with succussion alone on selected biological and physical systems. Starting with the medicine Cup. met. at 6C, authors potentised it further to 30C and 200C by serial dilution, followed by succussion (Set A). The same medicine at 6C was also potentised to 30C and 200C by using succussion alone (Set B). The antibacterial property of these two sets was compared on E. coli, a biological system and electrical properties on polymer matrix PVDF-HFP (widely used as charge separator) a physical system. Field Emission Scanning Electron Microscopy shows that the particles get more agglomerated at higher potency in Set B. Antibacterial effect of Cup. met. in Set B at 30C and 200C was observed to be more significant as compared to Set A. Effect of Cup. met. on polymer matrix in Set A varied significantly with the potency as compared to Set B wherein less beta phase crystallization was produced followed by no significant change in electrical properties

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