

A Review of Homeopathic Research in the Treatment of Respiratory Allergies

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Abstract

There are conceptual and historical links between homeopathic medicine and modern allergy desensitization treatment. Conventional allergy desensitization and homeopathic treatment both utilize small doses of substances that might cause symptoms in order to prevent or treat a hypersensitive state. Homeopathy has historically been associated with allergy treatment. This article reviews evidence from controlled trials for the use of homeopathy in respiratory allergies. Several clinical trials, many of which were published in “high impact” conventional medical journals, describe significant effects of homeopathic treatment in allergic patients. Most of these clinical studies have been deemed to be high quality trials, according to the three most commonly referenced meta-analyses of homeopathic research. Basic *in vitro* experimental studies also provide evidence that the effects of homeopathy differ from placebo. (*Altern Med Rev* 2010;15(1):48-58)

Introduction

A small footnote in medical history involves a Scottish homeopathic physician, C.H. Blackley, who in 1871 first identified pollen as the cause of hay fever.¹ Another historical fact is that one of three physicians who founded the American Academy of Allergy was a San Francisco homeopathic physician, Grant L. Selfridge.² Selfridge was also the first to conduct a botanical and pollen survey in western United States.

The primary precept of various modern allergy treatments derives from the homeopathic principle of treating “like with like,” suggesting the primary principle of homeopathy has unconsciously been part of mainstream medicine. Homeopathic medicine is a type of nanopharmacology or “medical biomimicry” in which extremely small and specially prepared doses of various substances from the plant, mineral, animal, or chemical

kingdom are prescribed to treat specific syndromes they are known to cause in overdose.³ As opposed to pharmacological agents prescribed to inhibit or suppress a patient’s symptoms, homeopathic medicines are prescribed to mimic and augment the patient’s immune response and natural defenses.⁴

Homeopathic Research

There is actually a larger body of clinical^{3,5,6} and basic science^{7,8} research that has tested homeopathic medicines than most people realize. Several clinical trials have demonstrated the efficacy of homeopathic medicines for treatment of serious illnesses, such as profuse tracheal secretions in critically ill patients suffering from chronic obstructive pulmonary disease⁹ and severe sepsis.¹⁰ Furthermore, the homeopathic treatment of influenza and influenza-like syndrome has undergone four large clinical trials, the results of which the Cochrane Review refers to as “promising.”¹¹

Although *The Lancet* published a review of homeopathic research that suggested no significant differences between homeopathic treatment and placebo,¹² there were significant problems with this analysis, including inadequate external validity of the small number of trials selected and significant bias in choosing the limited number of trials to evaluate.¹³⁻¹⁶ Shang et al recognized one trial on polyarthritis as “high quality.” This trial, however, was discarded because the reviewers asserted there was no comparable trial in allopathic medicine – a surprising claim that there has never been a double-blind, placebo-controlled trial on patients with polyarthritis.¹² It was also surprising the researchers chose to include a large clinical trial using a single homeopathic medicine (Thyroidinum 30C) in the treatment of weight loss, even though

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there is no evidence this remedy in this potency is typically prescribed for weight loss.

More comprehensive reviews of this body of clinical research show that the results reported in *The Lancet* are less definitive than the review suggests. These recent reviews show that several high quality trials testing homeopathic medicines were not included in the analysis, that the definition of “large” clinical trial was different for allopathic (n=146) than homeopathic (n=98) trials, and that the designation of large trials seemed to be post hoc.¹⁴⁻¹⁶

Homeopathy and Allergies

Although the homeopathic principle of similars may be utilized in conventional allergy desensitization shots, there are substantial differences between conventional and homeopathic allergy treatment. First, desensitization shots are only used in the prevention of allergy symptoms, whereas homeopathic medicines are used for prevention or treatment of allergies. Second, homeopathic medicines utilize much smaller doses. Although sometimes the substance to which the person is allergic is prescribed in a homeopathic dilution, more frequently a medicine is given based on its ability to cause the similar complex of symptoms (beyond just the allergy symptoms) the sick person is experiencing.

Classically trained homeopaths often prescribe a “constitutional medicine,” a homeopathic remedy individually chosen based on the constellation of physical and psychological symptoms the person is experiencing, not just the allergy symptoms. Finding a person’s constitutional medicine requires the individualized care of a professional homeopath. Homeopaths contend this approach to prescribing homeopathic medicines has the potential to provide significant relief of acute and chronic ailments, sometimes leading to significant improvement or a cure of the person’s allergy state.¹⁷

From a homeopathic perspective, one of the great misunderstandings about allergies is the assumption that the allergen (e.g., the cat dander, pollen, or house dust mite) is “the problem.” Instead, the allergen is the trigger and the allergic person’s body is the loaded gun. Rather than treating and suppressing the person’s symptoms or avoiding the allergen as a means of staying healthy, homeopaths seek to find the homeopathic medicine that will strengthen the individual’s defense

system. No studies, however, have evaluated the efficacy of long-term homeopathic “constitutional” treatment. Instead, clinical trials have evaluated the use of homeopathic medicines for treating various acute allergy symptoms, usually over a one- to three-month period.

Clinical Research Evaluating the Homeopathic Treatment of Respiratory Allergies

A body of clinical evidence and laboratory findings suggests a biological and clinical effect from homeopathic medicines in the treatment of respiratory allergies. Because the quality of a clinical trial is important to its evaluation, reference to the quality of the trial by reviewers is discussed. There have been three meta-analyses of homeopathic clinical trials published in high impact journals.^{5,12,18} These reviews of homeopathic research will be referred to below with reference to which trials have been deemed to be high quality.

Several clinical studies utilize an “isopathic” approach to using homeopathic medicines. That is, rather than using a substance as a medicine that causes “similar” symptoms as the ill individual, the isopathic approach uses a substance that causes the “same” symptoms as the sick person’s (the prefix “iso” means same, while “homeo” means similar). Examples of such isopathic treatment are the use of homeopathic doses of house dust mite to treat house dust mite allergies or the use of common flowers or grasses, known to cause symptoms of hay fever, to treat people suffering from hay fever.

To date, no studies have compared the isopathic and classical homeopathic methods of allergy treatment, although in both methods the medicinal substance undergoes the same pharmacological manufacturing processes of dilution and succussion.

Rhinitis/Hay Fever Studies *Galphimia glauca: Alone or in Combination*

A randomized, controlled trial (RCT) of hay fever patients compared the effectiveness of a homeopathic preparation of *Galphimia glauca* (Galphimia 6C) or placebo four times daily while symptoms persisted.¹⁹ What is particularly interesting about this study is the researchers also compared these two preparations with a dose of Galphimia diluted 1:10 six times without the common procedure of succussion of the solution after each dilution. This

study of 132 subjects showed that only the correctly manufactured homeopathic medicine that was both diluted and succussed was effective in reducing nasal and ocular symptoms.

On the first follow-up visit (two weeks after treatment commenced), ocular symptoms were improved in 70 percent of Galphimia 6C (dilution and succussion) subjects, 49 percent of Galphimia dilution-only subjects, and 55 percent of placebo subjects. Nasal symptoms were improved in 60 percent of Galphimia 6C subjects, 40 percent of Galphimia dilution-only subjects, and 41 percent of placebo subjects. On the second follow-up visit (four weeks after treatment commenced), ocular symptoms were improved in 80 percent of Galphimia 6C subjects, 66 percent of Galphimia dilution-only subjects, and 65 percent of placebo subjects. Nasal symptoms were improved in 78 percent of Galphimia 6C subjects, 51 percent of Galphimia dilution-only subjects, and 58 percent of placebo subjects. Statistical significance was found only in the nasal symptoms after the first visit ($p=0.024$).

These same researchers also conducted a multi-center RCT to examine the effectiveness of Galphimia 4X for hay fever; the average time of observation was 5.5 weeks.²⁰ Galphimia was found to be more effective than placebo ($p<0.01$). Therapeutic success was reported in 34/41 patients (83%) taking Galphimia and 21/45 control patients (47%). Three meta-analyses of homeopathy defined this trial as high quality.^{5,12,18}

This team of researchers has conducted four RCTs with homeopathic Galphimia and consistently found it to be effective.²¹ A 1991 meta-analysis in the *BMJ* defined five trials by Wiesenauer et al as high quality,¹⁸ a 1997 meta-analysis defined four trials as high quality,⁵ and a 2005 meta-analysis defined one trial as high quality.¹²

Another team of researchers tested a homeopathic combination nasal spray, consisting of *Galphimia glauca*, *Luffa operculata*, histamine, and sulphur, compared with Cromolyn sodium spray, an over-the-counter conventional medicine for hay fever. In this 42-day RCT, 146 hay fever subjects self-administered the homeopathic or control medicine four times daily and found the two treatments were equally effective.²² Although the 2005 meta-analysis¹² was recent enough to have included this trial, it was not included because it compared a homeopathic medicine with a conventional drug, not a placebo.

Isopathy: Pollens and Other Seasonal Allergens

A four-week, double-blind clinical trial comparing homeopathic preparations with placebo was conducted in the Phoenix metropolitan area during the regional allergy season of February to May.²³ Subjects (40 men or women, ages 26-63) diagnosed with moderate-to-severe seasonal allergic rhinitis were given a homeopathic preparation (6X) of common allergens in the U.S. Southwest. Study outcomes included allergy-specific symptoms using the rhinoconjunctivitis quality-of-life questionnaire (RQLQ), functional quality of life using the Medical Outcomes Study Short Form-36 (MOS SF-36), and the work productivity and activity impairment (WPAI) questionnaire. Scales from the RQLQ, MOS SF-36, and WPAI questionnaires showed significant positive changes between baseline and four weeks in the homeopathic group compared to the placebo group ($p<0.05$). Subjects reported no adverse effects during the intervention period. These preliminary findings indicate potential benefits of homeopathic intervention in reducing symptoms and improving quality of life in patients with seasonal allergic rhinitis in the southwestern United States. Although this study was published in a conventional pharmacology journal prior to Shang's 2005 meta-analysis, it was not reviewed.¹²

David Reilly, MD, in conjunction with the University of Glasgow and the Glasgow Homeopathic Hospital, conducted a series of clinical trials of homeopathic medicines for treatment of allergic disorders. The first was a pilot study of 36 subjects suffering from hay fever.²⁴ An RCT was conducted using a 30C potency of mixed grass pollens. Subjects given the treatment experienced a significant reduction in allergy symptoms ($p=0.002$).

The successful pilot study led the researchers to conduct a larger RCT of 144 hay fever patients.¹ Published in *The Lancet*, this study found homeopathically prepared doses of mixed grass pollens in the 30C potency were effective in significantly reducing hay fever symptoms compared to patients given a placebo ($p=0.02$). The Kleijnen¹⁸ and Linde⁵ meta-analyses deemed this trial to be of high quality (in fact, both meta-analyses deemed this trial to be tied for the highest quality trial testing homeopathic medicines); Shang,¹² without explanation, did not consider it to be a high quality trial.

The unique design of this study included a one-week placebo run-in for all subjects. The homeopathic treatment of people with chronic

diseases, including respiratory allergies, typically finds an “aggravation of symptoms” (also called a “healing crisis”) occurs shortly after initial treatment. After it dissipates the patient tends to experience a significant degree of symptom relief. This study was no exception, with more homeopathy patients (n=21) experiencing a 50-percent or greater increase in symptoms from week 1 to week 2 (using a visual analogue scale [VAS]) than those in the placebo group (n=11; $p < 0.05$). In the final analysis, however, the homeopathy group experienced greater symptom improvement compared to the placebo group. The mean change in VAS symptom score from baseline to the end of the trial in homeopathy subjects was significant compared to those in the placebo group ($p = 0.0004$). The VAS daily symptom score goes from -100 (representing improvement) to +100 (representing symptom increases). The homeopathy group experienced a 17.2-point decrease in VAS symptom score, representing symptom improvement, while placebo subjects experienced only a 2.6-point decrease in VAS symptom score between the placebo run-in week to the end of the fifth week ($p = 0.02$).¹

This study allowed all subjects to use an antihistamine when symptoms warranted. Although a similar number from each group (47, homeopathy; 45, placebo) took an antihistamine at least once during the trial, significantly more subjects in the homeopathy group (16 of 47) than the placebo group (9 of 45) discontinued these drugs by the end of the five-week trial. The mean number of antihistamine tablets taken by placebo subjects at the end of the trial was double that of the homeopathy group ($p = 0.03$).¹

Another RCT evaluated the effect of homeopathic medicine in 51 patients with perennial allergic rhinitis in four general medical practices and a hospital ear, nose, and throat outpatient clinic.²⁵ A placebo (n=27) or a 30C potency of the substance to which the individual was found most allergic by conventional skin testing (n=24) was given in three doses; one subject in the treatment group was lost to follow-up. The treatment group experienced an average 21-percent improvement in nasal airflow from baseline compared to a two-percent improvement in the placebo group during the third and fourth week (mean difference 19.8 L/min; 95% confidence interval [CI] 10.4-29.1; $p = 0.0001$). Although both groups reported symptom improvement from baseline on VAS, the difference was not statistically significant. A

greater initial aggravation of rhinitis symptoms (within 48 hours) was observed in the homeopathic treatment group compared to the placebo group (29% versus 7%; $p = 0.04$). Most symptom aggravations were short-lived, averaging four days. Symptom aggravations were predictive of a later positive response to treatment. Despite the fact it was published in the *BMJ* with an editorial (discussed below), Shang’s review (without explanation) did not consider this to be a high quality study.¹²

Addition of these results to those of three previous trials (n=253) shows a mean 28-percent symptom reduction from homeopathy compared to three percent for placebo (95% CI: 4.2-15.4; $p = 0.0007$).²⁵ An editorial in the *BMJ* noted that based on this series of trials, “It may be time to confront the conclusion that homeopathy and placebo differ.... This may be more plausible than the conclusion that their trials have produced serial false positive results.”²⁶

Asthma Studies

An eight-week trial published in *The Lancet* examined the use of homeopathy for the treatment of asthma.²⁷ After a four-week placebo run-in, 28 subjects were randomized in double-blind fashion to receive either placebo or a 30C potency of the allergen to which the individual was most sensitive as determined by conventional skin testing; each subject received a treatment pack of three vials. The most commonly reactive substance was house dust mite. Significant benefit was noted within the first week in subjects in the homeopathy group; 9 of 11 homeopathic subjects experienced improvement compared to 5 of 13 in the placebo group. The overall difference in improvement between groups over four weeks of treatment was 33 percent. The homeopathy group also experienced a greater reduction in bronchial reactivity on PC_{20} – a test of the amount of a bronchial irritant necessary to reduce forced expiratory volume in one second (FEV_1) by 20 percent. The homeopathy group experienced a median 53-percent increase in histamine resistance compared with a median seven-percent decrease in the placebo group. The Linde meta-analysis defined this trial as high quality,⁵ while Shang¹² did not.

A meta-analysis of the three trials conducted at the University of Glasgow,^{1,25,27} strengthened the evidence that homeopathy provides more therapeutic benefit than placebo ($p = 0.0004$).²⁷

A group of British physicians sought to replicate the eight-week asthma study described above. A 16-week study of 202 asthma patients found statistically significant improvements from baseline in the two primary outcomes measured – FEV₁ and quality of life – in subjects given either house dust mite 30C or placebo; there were no statistically significant differences between groups.²⁸ There were also no statistically significant differences between the treatment and placebo groups in secondary outcome measures, although during the third week the homeopathic group experienced a deterioration in some of the secondary outcome measures, including the morning peak expiratory flow (p=0.025), score on asthma VAS (p=0.017), and mood (p=0.035). Although there was reduced conventional bronchodilator usage in the homeopathic patients, the difference was not statistically significant.

Reilly et al responded²⁹ by noting numerous differences between the two asthma studies.^{27,28} Of critical significance is the fact that the latter study²⁸ gave only three doses of the homeopathic medicine in a 24-hour period, then nothing more for the remainder of the 16-week trial; whereas, subjects in the earlier study were provided three doses over a four-week treatment period (although the original trial lasted eight weeks, every subject was given a placebo during the first four weeks).

Reilly also noted other differences between the two trials, including less rigorous admission criteria for the patients in the newer study²⁹ and different selection criteria. The original study's recruitment was exclusively restricted to patients attending a hospital-based specialist center, suggesting the newer study utilized healthier subjects for whom it is more difficult to show improvement. The original study also used an asthma specialist with expertise in interpreting allergy skin testing, thereby providing more precision in determining to which substance the subject was most allergic. The second study also lacked a run-in placebo period for all patients.

This latter study²⁹ was not included in Shang's analysis,¹² despite the fact it was published in a conventional medical journal with a high impact factor.

White et al performed a double-blind RCT to compare the effects of individualized homeopathic remedies to placebo in 96 children with mild-to-moderate asthma, as an adjunct to conventional treatment.³⁰ The primary outcome measured was the active quality of living subscale of the Childhood Asthma Questionnaire administered at

baseline and 12 months. Other outcome measures included subscales of the same questionnaire, peak flow rates, use of medication, symptom scores, days off school, asthma events, global assessment of change, and adverse reactions. The authors found no clinically relevant or statistically significant changes in the active quality of life score (QoL). Other subscales, notably those measuring severity, indicated relative improvements albeit small. There were no differences between groups for other measures. The authors conclude this study provides no evidence that adjunctive homeopathic remedies, as prescribed by experienced homeopathic practitioners, are superior to placebo in improving the quality of life in children with mild-to-moderate asthma.

The above study was highly criticized by Fisher et al who noted its conclusions did not adequately reflect the shortcomings of the trial.³¹ The authors³⁰ state, "There was no evidence of a clinically relevant change in QoL score," but fail to mention that none was expected since the QoL scores were normal at entry (no treatment could have provided statistically significant improvements in such cases). Fisher's greatest concern was that the bias in the interpretation of the results would carry through to future meta-analyses and reviews.³¹

Miscellaneous Respiratory Allergies

Another RCT conducted during the month of May evaluated the use of homeopathic doses of birch (*Betula*) tree pollen for people with birch pollen allergy.³² Although no statistically significant difference between the treatment and placebo groups was found during the first and last weeks, between May 8-18 a clinical difference was revealed between the groups, with those receiving *Betula* 30C having fewer and less serious symptoms; for some days these differences were statistically significant. The homeopathic treatment group also reported more symptom aggravation than the placebo group. Shang's 2005 review did not rate this trial as high quality.¹²

A study of 88 Norwegian patients with hypersensitivity illnesses, including asthma, eczema, urticaria, hay fever, and other allergies, found homeopathy was at least as effective as conventional medical treatment.³³ The retrospective, comparative study evaluated clinical practices of general practitioners (GPs) and classical homeopaths. The two groups of patients had no statistically significant differences in age, school education, or duration of hypersensitivity symptoms.

Fifty-four homeopathic patients and 34 GP patients completed a questionnaire. Most patients treated conventionally experienced symptom relapse when medications stopped, while only one-third of patients in the homeopathy group experienced a relapse ($p=0.002$). Only one patient in 10 taking conventional treatment experienced symptom improvement after stopping medication, compared to improvement in 23 of 33 homeopathy patients. Patients in the homeopathic group reported a greater improvement in general state of health, with 57 percent improving compared to 24 percent in the conventional group ($p=0.004$). Homeopathic patients also experienced substantially more positive change in psychological state ($p<0.0001$). Regarding quality of life, 53 percent in the homeopathy group improved compared to 15 percent in the conventional group. This trial was too recent to have been rated by the three meta-analyses.

Two Israeli physicians conducted a retrospective analysis of patients with respiratory allergies who had received individually chosen homeopathic medicines in a complementary medicine clinic affiliated with an Israeli health maintenance organization.³⁴ The clinic's database revealed that when evaluating drug usage three months before homeopathic treatment and three months after, 27 of 31 patients who used conventional allergy medications (antihistamines, steroids, and decongestants) reduced usage of these drugs after homeopathic treatment; two patients experienced an increase in drug usage, and two patients showed no change. Patients used an average of 3.1 medications before homeopathic treatment and 1.6 after ($p=0.001$). A 60-percent reduction in drug costs was observed after homeopathic treatment, amounting to an average savings of \$24 per patient in a three-month period.

Although the above study was not double-blind or placebo controlled, it provides a glimpse into real-world health care. These results suggest the use of homeopathic medicines for individuals suffering from allergies can lead to reduced usage of conventional drugs and is more cost effective. This trial was not included in the Shang review because it was not placebo-controlled.¹²

Laboratory Evidence

In addition to clinical trials, several laboratory studies have shown powerful effects of various homeopathic doses on biochemical markers related to respiratory allergies, specifically basophils. Basophils with surface IgE play a role in allergic

responses, releasing chemical mediators that cause allergic symptoms when IgE binds to its specific allergen.

A series of experiments demonstrates homeopathic doses of *Apis mellifica* (honey bee) and lung histamine inhibit basophil degranulation.³⁵ Apis 8C, 9C, and 10C significantly inhibited basophil degranulation after basophils were activated with high and low doses of anti-IgE. Apis 5C, 7C, 13C, and 20C caused significant inhibition when basophils were activated with low anti-IgE doses. Significant inhibitions were observed at dilutions of lung histamine 5C and 15C (28.8% [$p<0.005$] and 28.6% [$p<0.001$], respectively). Apis 9C significantly decreased basophil degranulation from 50.1 percent to 17.0 percent ($p<0.02$) compared to saline submitted to the same dilution procedure; significant inhibition also occurred after Apis 13C and 20C ($p<0.05$). Apis 10C and lung histaminum 18C caused nearly 100-percent inhibition of basophil activation by small anti-IgE doses.

French immunologist Jacques Benveniste in conjunction with three university laboratories (University of Toronto, Hebrew University of Jerusalem, and University of Milan) conducted a series of studies testing various homeopathic potencies of anti-IgE antibodies on basophil degranulation.³⁶ Benveniste et al found that serial 10-fold dilutions of goat anti-human IgE anti-serum had a statistically significant effect on the degranulation of human basophils at dilutions of 10^{-120} . Efforts to replicate this work were initially unsuccessful.^{37,38}

Hirst et al attempted to reproduce Benveniste's findings.³⁸ Following as closely as possible the methods of the original study, they found no evidence for a periodic or polynomial change of degranulation as a function of anti-IgE dilution. Their results contain a source of variation for which they cannot account, but no aspect of the data was consistent with the previously published claims.

Four independent laboratories, each associated with a university, conducted a different experiment on basophils using various dilutions of histamine. Madeleine Ennis (a Queen's University professor of clinical biochemistry and lead researcher for this group of four laboratories) and her team reported a total of 772 valid data points testing various potencies of histamine¹⁵⁻¹⁹ that showed a highly significant inhibition of anti-IgE induced basophil degranulation ($p<0.0001$).³⁹ One laboratory found no statistical significance ($p=0.065$), while the three other laboratories did find statistical

significance ($p=0.0002$, $p=0.024$, and $p<0.0001$).³⁹

In 2001 these four laboratories tested for inhibition of CD63 (a cell surface marker used to measure basophil degranulation) expression after incubation with histamine 2X, 4X, 6X, 14X, 18X, 20X, and 26X.⁴⁰ Flow cytometry was used to measure basophil activation of CD63 in conjunction with anti-IgE. Significant inhibition of CD63 expression was observed after incubation with histamine at all potencies tested, with the highest inhibition at 20X ($p=0.0005$). The 2X, 4X, and 26X doses showed p values of 0.01; the 20X dose was significant with a p value of 0.001. Heating of the 2X, 30X, and 36X potencies caused a significant decrease in the inhibitory effects on basophil activation ($p=0.039$, $p=0.018$, $p=0.0064$, respectively).

In 2004 these four laboratories conducted a similar study evaluating a total of 2,706 valid data points and testing histamine 28X, 30X, 32X, 34X, and 36X.⁴¹ Using automatic flow cytometry, they measured histamine release and CD63 expression and found a high degree of basophil inhibition ($p=0.0001$). One of the four laboratories found no significant results, while two of three laboratories found inhibition was reversed by the histamine-blocker cimetidine.

Despite these multiple *in vitro* investigations showing histamine has significant effects on basophil activation, a new investigation was conducted by another laboratory without significant results, except at a dilution of 10^{-22} , which had a rather weak but statistically significant inhibition ($p=0.018$).⁴² The researchers recommended additional studies using strictly controlled conditions, the use of several blood donors, and improved methodology.

Recently, Chirumbolo et al performed a repetition trial on basophils, confirming high-dilution effects.⁴³ This group of Italian researchers used a strictly standardized flow cytometry protocol and a new dilution/succussion procedure. Serial centesimal (1:100) histamine dilutions and water controls were tested on human basophil responsiveness to anti-IgE antibodies. Membrane up-regulation of CD203c, which in these experimental conditions proved to be a more consistent activation marker than CD63, was significantly inhibited in samples treated with histamine at dilutions of 2C ($p=0.001$), 12C ($p=0.047$), 14C ($p=0.003$), 15C ($p=0.036$), and 16C ($p=0.009$). Control water dilutions/succussions had no significant effect. This study demonstrates various histamine dilutions inhibit CD203c

up-regulation in anti-IgE stimulated basophils. Repetition trials of published studies on high dilutions are essential for the scientific credibility of homeopathy.

A systematic review of *in vitro* studies testing high potencies of homeopathic medicines evaluated 67 experiments, one-third of which were replication studies.⁷ Nearly three-fourths of these studies found a statistically significant effect; almost three-fourths of the replication trials were also positive. However, the authors of this review noted that at present no single study has withstood all replications.

A team of Italian scientists performed a series of experiments that may explain the inconsistent results from various *in vitro* studies.⁴⁴ Examining the effect of a 45X potency of *Arsenicum album* on growth of wheat seedlings, they found that temperature and the age of the homeopathic solution appear to have an effect. The potential for homeopathic arsenic to counter the negative effect on germination of 0.1-percent As_2O_3 (non-potentized arsenic) was unaltered at 20°C and 40°C degrees, increased at 70°C, and decreased at 10°C, confirming empirical observations of homeopaths that exposure to very low or high temperatures reduces the therapeutic effect of homeopathic medicines. The age of the homeopathic preparation also appeared to be important, with *Arsenicum album* 45X prepared within three months of the study having no significant effect, while the same medicine tested after three months of preparation exhibiting repeated significant effects compared to a control (except at 100°C). The primary conclusion suggested by this experiment is that the efficacy of *Arsenicum album* 45X on wheat germination may be influenced by temperature and age of the medicine. Since no histamine trial cited above stated when the potentized histamine was made, there is the possibility some potentized histamine was used within three months of its manufacture. Based on this new plant research, it appears important for researchers to report the date of manufacture of the potentized medicines used.

Homeopathic Treatment Options

Homeopaths contend that respiratory allergies are best treated by professional homeopaths who prescribe individually selected homeopathic constitutional medicines according to specific and unique genetic history, personal health history, and totality of present physical and psychological symptoms being experienced.

Although homeopaths assert that this method of homeopathic prescribing provides the longest-term benefits, no research confirms this observation.

Based on studies reviewed in this article, possible treatment options aside from conventional classic homeopathic treatment include:

- ◆ Following the studies of the Glasgow researchers, use conventional allergy testing to determine the patient’s most significant allergen and administer a 30C dose of this substance, repeated as needed every month (these products are available through pharmacies that specialize in homeopathic medicine).
- ◆ A combination of several allergens can be administered. For example, two of the Glasgow

hay fever studies used a combination homeopathic medicine that included flowers to which the patients were allergic. Select homeopathic pharmacies can provide homeopathic combinations of mixed pollen, mixed grasses, and mixed molds.

- ◆ Galphimia 4X or 6X could be prescribed alone or in combination with other remedies as long as hay fever symptoms persist.

Indications for prescription of specific homeopathic remedies are derived primarily from toxicological studies called “drug provings,” which are typically single- or double-blind trials conducted on healthy human subjects to determine what symptoms a substance will cause in overdose.

Table 1A. Common Homeopathic Remedies for Respiratory Allergies

Remedy	Common Name	Keynote Symptoms
<i>Allium cepa</i>	Onion	acute, profuse, fluent, burning nasal discharge that is worse in a warm room and better in the open air profuse, bland (non-burning) tearing with reddened eyes; desire to rub eyes frequently raw feeling in the nose with a tingling sensation and violent sneezing; nasal symptoms worse on the left or begin on the left and move to the right side frontal congestive headache may be concurrent with the allergy symptoms, which tend to be exacerbated by exposure to a damp wind
<i>Euphrasia officinalis</i>	Eyebright	indicated for individuals with symptoms opposite <i>Allium cepa</i> profuse burning tears and a bland nasal discharge whites of the eye and the cheeks become reddened from the burning tears, and blinking provides temporary relief eye symptoms worse in the open air; nasal discharge worse at night, while lying down, and in windy weather
<i>Arsenicum album</i>	White arsenic	both tears and nasal discharge burning; nasal obstruction often worse on the right side symptoms more intense after midnight; tossing and turning in bed; anxious, frightened, and restless during breathing difficulties chilly and aggravated in cold air; better in a warm room or from warmth in general thirst for small sips of warm drinks sensitive to light; violent sneezing and may develop asthmatic breathing fastidious to the point that they may feel compelled to clean or bring order to their home or office even during an illness; prefer company to being alone
<i>Nux vomica</i>	Poison nut	irritable disposition; symptoms sometimes begin after being irritated, vexed, or fatigued fluent nasal discharge during the day and congestion at night symptoms worse indoors and better in the open air chilly; sensitive to the cold, being uncovered, and noise, odors, and light; feel better in a warm room and drinking warm fluids frequent sneezing may be experienced, especially on rising in the morning

Table 1B. Common Homeopathic Remedies for Respiratory Allergies

Remedy	Common Name	Keynote Symptoms
<i>Pulsatilla nigricans</i>	Windflower	commonly indicated remedy for women and children nasal discharge during the day and congestion at night (like <i>Nux vomica</i>). gentle, mild, yielding, impressionable, emotional, and moody; desiring attention and sympathy (compared to argumentative nature of <i>Nux vomica</i>) congestion worse in a warm room, hot weather, or while lying down; relieved in cool rooms, open air, or with cool applications aggravated by milk products, rich foods, and fats itching of the roof of the mouth at night and thirtlessness
<i>Natrum muriaticum</i>	Sodium chloride (salt)	nasal discharge is profuse and like egg whites for the first several days, leading to nasal obstruction concomitant symptoms might include herpetic eruption on the lips or a hammering headache in the forehead or behind the eyes symptoms may be worse from exposure to heat and the sun and from 9 to 11 am thirsty; craves salt suppresses emotions, especially grief
<i>Solidago virgaurea</i>	Goldenrod	indicated for individuals allergic to goldenrod
	House dust mite	consider for individuals with allergies to house dust mite, which is the most common allergen in the world today. ⁴⁶
<i>Blatta orientalis</i>	Indian cockroach	some sensitive people develop symptoms of asthma when exposed to cockroaches asthma associated with bronchitis threatened suffocation as a result of a great accumulation of mucus; oppression of chest with great heaviness, and inability to expectorate
<i>Kali bichromicum</i>	Potassium dichromate	thick, stringy, green or yellowish mucus from the nose or throat post-nasal drip and pain at the root of the nose relieved from hard pressure significant benefits in the reduction of tracheal secretions in chronic obstructive pulmonary disease (COPD) patients. ⁹
Histaminum	Histamine	either when no other remedy seems accurate or when other remedies have been tried and haven't worked <i>In vitro</i> studies testing various potencies of this medicine have found significant effects upon basophils. ³⁹⁻⁴¹

Such symptoms can often be alleviated by a homeopathic dose of the same substance. Homeopathic drug provings can be conducted with either crude or diluted/potentized doses of a substance. There is no clearly defined dose-response pattern to homeopathy or a way to determine which individuals will be sensitive to the potentized test medicine. A recent three-armed RCT showed that three medicinal substances

in homeopathic potencies created symptoms known to be caused by each substance. These symptoms were distinct from symptoms experienced by subjects given a placebo.⁴⁵ Although the medicines listed in Tables 1A and 1B have not been researched clinically for treatment of respiratory ailments, they are among the most frequently prescribed homeopathic remedies for hay fever and other respiratory allergies.

Conclusion

Homeopathy appears to offer possible options to conventional treatment of respiratory allergies. Homeopathic doses of specific allergens or individually-selected homeopathic constitutional medicines have been shown to be effective in the treatment of various respiratory allergies, including patients suffering from hay fever, allergic rhinitis, and asthma. While there is evidence

that homeopathic treatment and placebo differ, further research is necessary to evaluate the efficacy of homeopathic treatment in allergic patients.

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Erratum:
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An error occurred in the caption for figure 3. It should read:
 Consumption advisories in meals per month based on U.S. EPA cumulative risk assessment methods for PCBs, toxaphene, and dieldrin for farmed (green) and wild (red) salmon.