An Introduction To Homeopathy

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A brief guide to a popular alternative system of remedies based on a nineteenth-century concept that has no scientific validity.

In 1800, conventional medicine was a disaster. Doctors weakened patients with bloodletting and purging, they poisoned them with mercury and other harmful substances, and they often killed more patients than they cured. Dr. Samuel Hahnemann was looking for safer, more effective ways to help his patients. He had an epiphany after he took a dose of cinchona bark and developed symptoms similar to those of malaria, the disease cinchona was supposed to treat. He extrapolated from this one observation to conclude that if any substance causes a symptom in healthy people it can be used to treat the same symptom in sick people. He formulated this as the first law of homeopathy, *similia similibus curentur*, usually translated as "like cures like." He diluted his remedies so that they would no longer cause symptoms; this led to his second law of homeopathy, the law of infinitesimals, which states that dilution increases the potency of a remedy. When he observed that his remedies worked better during house calls than in his office, he attributed it to jostling in his saddle bags, so he added the requirement of "succussion," specifying that remedies must be vigorously shaken (not stirred) by striking them against a leather surface at every step of dilution.

Homeopathic remedies are usually labeled with the notation X or C, corresponding to ten and one hundred. 15C would mean 1 part of remedy in 100 parts of water, then 1 part of the resulting solution in 100 parts of water, and so on.
that one part of remedy was diluted in 100 parts of water, one part of the resulting solution was again diluted in 100 parts of water, and the process was repeated fifteen times. Hahnemann died before Avogadro’s number was available to calculate how many molecules are present in a volume of a chemical substance. Today we can calculate that by the thirteenth 1:100 dilution (13C), no molecules of the original substance remain. Hahnemann typically used 30C remedies. At 30C, it would take a container thirty million times the size of Earth to hold enough of the remedy to make it likely that it would contain a single molecule of the original substance. The most popular homeopathic cold and flu remedy is sold as a 200C dilution, and there are even higher dilutions. Above the 1,000C level there are remedies designated as multiples of M, where 1M=1,000C.

An example will clarify the mind-boggling implausibility of homeopathy. If coffee keeps you awake, according to homeopathy dilute coffee will put you to sleep. The more dilute, the stronger the effect. If you keep diluting it until there isn’t a single molecule of coffee left, it will be even stronger. The water will somehow remember the coffee. If you drip that water onto a sugar pill and let the water evaporate, the water’s memory will somehow be transferred to the sugar pill, and that memory of coffee will somehow enable it to function as a sleeping pill.

Later in his career, in order to explain the failures of homeopathy, Hahnemann came up with the idea that all disease is due to three miasms: syphilis, sycosis (gonorrhea), and psora (scabies, or itch). These could be inherited or the result of an infection; they had to be cleared before the homeopathic remedy could work.

Anything could be a homeopathic remedy. Soluble materials could be diluted in water or alcohol. Nonsoluble materials could be ground into powder (triturated) and diluted with sugar (lactose powder). Among remedies listed in the homeopathic Materia Medica are powder ground from pieces of the Berlin Wall, eclipsed moonlight, the south pole of a magnet, dog’s earwax, tears from a weeping young girl, rattlesnake venom, and poison ivy.

To find out which remedy does what, they are tested—not by controlled scientific studies but instead by “provings.” Healthy people ingest the substance and report everything that happens to them (for example, “my big toe itched at midnight, I got heartburn after eating a big meal, I felt angry”). There is no attempt to separate the ordinary vicissitudes of everyday life from symptoms caused by the substance. These reports are then compiled into a Repertory where the homeopath can look up a patient symptom or characteristic to see what remedies had been associated with it in the provings. For instance, there are twenty-nine listings for a patient’s facial expression, including astonished, bewildered, anxious when a child is lifted from a cradle, besotted, cold, and so on. A single remedy is listed for “cold”; seventeen are listed for “besotted.”

The homeopath then consults a second book, a Materia Medica, for a list of symptoms that are associated with each remedy. For natrum muriaticum, the book lists symptoms in all these areas: mind, head, eyes, ears, nose, face, stomach, abdomen, rectum, urine, male/female, respiratory, heart, extremities, sleep, skin, fever, and modalities. Examples of symptoms listed under those categories include eyelids heavy; anemic headache of schoolgirls; constipation; diarrhea; sensation of coldness of heart; palms hot and perspiring; hangnails; dreams of robbers; oily skin; warts on palms of hands; chill between 9 and 11 am, and so on for many pages. What is natrum muriaticum? Common table salt.

The initial consultation with a homeopath typically lasts an hour. He inquires about every conceivable aspect of the patient’s life; keep in mind that for an accurate homeopathic diagnosis he must know about matters such as whether your eyelids are heavy or whether you have dreamed about robbers.

They pick the remedy that they deem to be the best match for you. If you get worse, they may tell you aggravations are a good sign. They will reevaluate you at every visit and change remedies as needed until one finally seems to do the trick or your illness runs its course and your symptoms have had time to go away on their own. If the treatment fails, they are never at a loss for excuses; they may tell you it’s your fault because you inactivated the remedy by drinking coffee, not getting enough sleep, using a cellphone, or eating spicy foods.
In his book *Homeopathy: How It Really Works*, Jay Shelton examines all the evidence and concludes that homeopathy often "works," but not because of the remedies. The response to treatment is due to non-remedy factors such as unassisted natural healing, attention, suggestion, placebo effects, regression to the mean, the cessation of harmful or unpleasant treatments, lifestyle-assisted healing, or a difference in the patient's perception of internal versus external reality.

Homeopaths have made numerous attempts to justify their remedies in light of science. They have compared the remedies to vaccines, but vaccines are very different from homeopathic remedies because they contain measurable numbers of antigen molecules, they act by well-understood scientific mechanisms, and their results can be quantified by measuring antibody titers. Homeopaths have appealed to hormesis, a phenomenon whereby a low dose of a chemical may trigger the opposite response to a high dose. But hormesis is questionable, and if it exists in some cases, it's not a universal phenomenon by any means; it also describes a response to a low dose, not to no dose. Defenders of homeopathy have also invoked "water clusters" as a way water might store information; clusters of water molecules do form, but they only last for trillionths of a second, and there's no way they could register or transmit information. They have tried to attribute homeopathy's effects to quantum entanglement, with ill-informed Chopra-like speculations that would leave a quantum physicist rolling on the floor with laughter. They have done fatally flawed experiments trying to prove that water can remember, as if that alone would somehow validate clinical treatments. The most famous was Jacques Benveniste’s study, published in *Nature* (see http://en.wikipedia.org/wiki/Jacques_Benveniste), demonstrating that he could detect the biological effect of antibodies after they had been diluted out of a solution. A subsequent *Nature* investigation showed that the positive results were all from one technician and were best explained by poor controls and inadequate blinding procedures; attempts to replicate his findings failed (Maddox et al. 1988).

Homeopaths sometimes argue that because homeopathy is individualized, it can't be tested in randomized controlled trials or judged by the same standards as conventional medicines. They are wrong: it can. Homeopaths could individualize their prescriptions as usual, the remedies could be randomized and coded by a second party, and they could be dispensed by a blinded third party who didn't know whether what he was handing out was what the homeopath ordered or a substitute. Homeopaths involved in designing homeopathy studies have conspicuously chosen not to design them this way.

The implausibility of homeopathy wouldn't matter if it could be shown to work. When penicillin was first used, no one understood how it worked; however, it was immediately obvious that it did work, so doctors started using it right away, and only much later figured out that it kills bacteria by interfering with their ability to manufacture cell wall components. If the evidence for homeopathy's effectiveness were as strong as the evidence for penicillin, it would have readily been adopted into mainstream medicine.

There have been a number of positive clinical studies of homeopathy, but the effects have been inconsistent and small in magnitude. We know that there are many reasons an ineffective treatment may appear to work in a study. The better the design of a homeopathy study, the more likely it is to have negative results, and the best-designed studies have been consistently negative. Systematic reviews fail to support homeopathy. A 1997 meta-analysis published in the *Lancet* concluded that homeopathy worked better than placebo but was not effective for any single clinical condition (online at http://www.ncbi.nlm.nih.gov/pubmed/9310601). That's like saying that broccoli is good for everyone—but not men, women, or children! In 2002 Edzard Ernst did a systematic review of systematic reviews (Ernst 2002) that showed homeopathy was no better than placebo.

Homeopaths love to cite statistics from nineteenth-century cholera and typhoid epidemics where patients treated with homeopathy were more likely to survive than patients treated with conventional medicine. Those historical successes are easily explained. Doctors of the time were using remedies that often actively caused harm, but homeopathic remedies did nothing so of course the results were better. Homeopathy was just a way of avoiding iatrogenic harm. Conventional medicine has made a lot of progress since then. The "What's the Harm?" website offers numerous modern examples of patients who died because they chose homeopathy over conventional treatment that could have saved their lives.

One real danger of homeopathy is in the area of vaccines. Unlike real vaccines, homeopathic vaccines contain no antigen and are injected with saline, so they provide no protection.
molecules, so they can’t possibly produce immunity. People are deluded into believing they are protected from vaccine-preventable diseases when they are actually putting themselves at risk and putting others in their community at risk by decreasing the herd immunity. In a United Kingdom study, experimenters posed as patients planning a trip to Africa and asked homeopaths what they should do to prevent malaria. Ten out of ten homeopaths advised homeopathic “protection” instead of conventional malaria prophylaxis. One said, “They make it so your energy—your living energy—doesn’t have a kind of malaria-shaped hole in it. The malarial mosquitoes won’t come along and fill that in. The remedies sort it out.” (See http://www.badscience.net/2006/09/newsnightssense-about-science-malaria-homeopathy-sting-the-transcripts/.)

There are other risks. Sometimes a homeopathic remedy is not dilute enough and has actual harmful physiological effects. A homeopathic teething remedy was recalled in 2010 because it contained varying amounts of belladonna and children taking it had suffered seizures consistent with belladonna poisoning. In 2014 several homeopathic products were recalled because they contained actual drugs: measurable amounts of penicillin. (See http://www.fda.gov/safety/medwatch/safetyinformation/safetyalertsforhumanmedicalproducts/ucm390002.htm.)

Homeopathy is big business. The homeopathic flu remedy Oscillococcinum is one of the ten top-selling drugs in France, and it brings in $15 million a year in the United States. This one is particularly illogical, since the original substance never actually existed. A French doctor looked through a microscope at blood samples from victims of the 1918 Spanish flu epidemic and observed the phenomenon known as Brownian motion, where visible particles are jostled by collisions with water molecules. He didn’t recognize it as Brownian motion but imagined he had discovered a hitherto-unknown oscillating bacterium. He christened it Oscillococcus; then he imagined he saw the same bacteria in a sample of duck liver. The Oscillococcinum sold today is a 200C dilution of a smidgen of a Muscovy duck’s heart and liver. The liver is long gone but the quack is still evident.

Too many people assume that anything on the shelves of a store must have been approved as safe and effective by the government and that false or misleading advertising claims are strictly prohibited and promptly punished. Unfortunately, this is not true. In the United States, prescription drugs must be proved safe and effective before the FDA will approve them for marketing, but homeopathic remedies are not required to undergo any kind of testing. The whole homeopathic pharmacopoeia was grandfathered in without question. Homeopathic remedies were exempted from federal regulations governing other medications by legislation passed in 1938 at the instigation of senator and homeopath Royal Copeland.

As early as 1842, it was obvious to thinking people like Oliver Wendell Holmes that homeopathy was pseudoscientific nonsense. He exposed its silliness in his classic essay "Homeopathy and Its Kindred Delusions," which is available on the Internet and is still well worth reading. Homeopathy has also been referred to as "Delusions About Dilutions." James Randi has a standing offer of $1 million to anyone who can distinguish a highly dilute homeopathic remedy from plain water, and he’s in little danger of losing his money.

So, why is it still being used? There are several reasons. Many consumers have no understanding of what homeopathy actually is and even many medical professionals have only a vague impression that a homeopathic remedy is some kind of mild natural herbal remedy. The remedies are harmless, whereas real medicines have real side effects. The remedies are much less expensive than prescription drugs. Patients love the long appointments and individual attention that they don’t get from their medical doctors. Or they enjoy the independence of choosing their own homeopathic remedy and treating themselves. Or they trust the testimonials of friends who believe it cured them. Or they have tried it and have become convinced that it works. Unfortunately, when people rely on personal experience, they are just not very good at determining whether a remedy works: that’s why we need science.

For Further Reading


"Homeopathy and Its Kindred Delusions" by Oliver Wendell Holmes. A classic of critical thinking about medicine. Full text available online at http://www.quackwatch.org/01QuackeryRelatedTopics/holmes.html.


The Homeowatch website (http://www.homeowatch.org/).


For Further Reading
Harriet Hall, MD, a retired Air Force physician and flight surgeon, writes and educates about pseudoscientific and so-called alternative medicine. She is a contributing editor and frequent contributor to the Skeptical Inquirer and contributes to the blog, Science-Based Medicine. She is author of Women Aren't Supposed to Fly: Memoirs of a Female Flight Surgeon and coauthor of the 2012 textbook Consumer Health: A Guide to Intelligent Decisions.
Samuel Hahnemann introduced this term to homeopathy in his little book called, "Chronic Diseases." It took him twelve years of study to write this book. He wanted to understand how come many patients were not responding to what he considered to be well chosen remedies. I am sure this is way more than you expected in an introduction to homeopathy, but if you have read all the way through, you now have a very good basis to understand homeopathy as it was conceived by Samuel Hahnemann and as it has been evolving in recent years. Please remember that for constitutional homeopathic prescribing you should consult a professional homeopath or a doctor who is knowledgeable in homeopathy. Homeopathy: an introduction to the essential concepts of unitary homeopathy by Frederik Schroyens, M.D. Unitary homeopathy (often called classical homeopathy) must be differentiated from all other so-called forms of homeopathy. The hallmarks of unitary homeopathy are: A thorough interview to discover the totality of signs and symptoms. This total picture is our most important guide to the medicine. By "signs" we mean that which can be objectively assessed by the physician. By "symptoms" we mean what the patient himself feels subjectively. How a homeopathic medicine acts is found out by administering it to healthy volunteers and recording the symptoms the volunteers report. By