

How does homoeopathy work?

In the second part of his major article on homotoxicology, Professor Michael Kirkman, C.I.Biol, Director of Academic Affairs UKGB International Society of Homotoxicology and ICM Adviser in Homotoxicology, addresses the issue of homoeopathy and its possible mechanisms.

Exactly how homoeopathy works we don't know – at this time. That said, let me pose the question: how many drugs do doctors recommend or prescribe with an unknown mechanism of action?

Dr Edward Calabrese, PhD, at the University of Massachusetts in Amherst, as well as US biomedical scientist Allen Kratz, have written extensively on this subject in very conventional journals. The hormesis hypothesis states that most, if not all, chemical and physical agents, such as radiation, have the capacity to stimulate biological effects at doses below the toxicity threshold, while causing toxicity at doses above the threshold. This concept is validated by the Arndt-Schulz Law of pharmacology, which essentially says the same thing and is often used to explain the beneficial effects of microdoses of potentially toxic substances that are often used in homoeopathy.

A second theory is the systemic memory mechanism of water, which simply states that water can 'remember' – that is, it can be imprinted with the memory of a substance. This may explain the effects of homoeopathic drugs well beyond Avogadro's number (12C or 24X). This concept is also being researched with modern analytical procedures. There is much that we still do not know about something so apparently simple as water.

The American Association of Homoeopathic Pharmacists (AAHP) in their pharmacy c.e.u. Program, an Introduction to Modern Concepts of Homoeopathic Pharmacy, presents the following "possible mechanisms of action" of homeopathic drugs.

Possible mechanisms of action

The human body is wonderfully adaptive and is constantly maintaining its equilibrium and harmony. This process of adjustment is continuous. The endocrine and nervous systems are involved in mediating these adjustments, though all of the body's systems are involved in a complex process designed to maintain homeostatic equilibrium.

These adjustments are our "symptoms". When we fall and bruise ourselves, the area becomes tender and discoloured. These symptoms, while mild, are the healing processes for the damage done to the injured tissue. Inflammation occurs, damaged cells collect, the lymphatic system and lymphocytes mobilise to phagocytise dead cells and debris and remove it from the area. In the case of a viral infection, the same process of inflammation occurs, the immune system is activated, antibodies are formed and systems develop. The symptoms may include fever, runny nose, sneezing, cough, headache, body aches. All of these symptoms represent the body's efforts to overcome and eliminate the viral infection.

Symptoms are therefore a positive phenomenon. They are the body's way of telling us that it is coping with stimuli or stress being applied to it. Homoeopathy utilises these symptoms to assist the body in its efforts to regain its balance and state of health through the application of the "law of similars".

Many of the concentrations used in homoeopathic drugs may at first glance seem to be so dilute as to have no possible physiological effect. But it is important to put these concentrations in perspective by comparing them with the normal concentrations at work in our bodies. Our body typically deals with ion concentrations in lymphatic fluid and serum of

10^{-3} g/ml. Hormone concentrations range from 10^{-6} to 10^{-18} g/ml depending on the hormone and the tissue where it is being measured.

From this it is apparent that most of the lower homeopathic potencies correspond with the natural physiological concentrations found in the body. Higher homeopathic potencies, which correspond to extremely low concentrations, utilise mechanisms for their actions that are not understood.

In a series of experiments continued over 35 years, Kolisko reported that wheat seed growth was promoted by low dilutions of various metallic salts, inhibited by somewhat higher dilutions and stimulated again at dilutions higher than Avogadro's number.

Other experiments, using techniques from physics, have also reported that homeopathically dilute substances display measurable differences that may seem paradoxical due to the small concentrations present. Nuclear magnetic resonance experiments conducted in 1963 measured three solutions: a) 87% ethanol on water, b) sulphur 12X (prepared with a succussion at each step), and c) an equivalent dilution of sulphur 12X prepared without succussion. The authors were able to distinguish the properly prepared sulphur 12X from the others and concluded "some form of energy is imparted by succussion to a homeopathic drug, resulting in a slight change of the alcohol in these dilutions. There is a structural change in the solvent as the potency is made from the tincture to a higher dilution".

One possibility is that homeopathic dilutions assist the body to reactivate enzyme and endocrine systems by interacting with regulatory and biofeedback mechanisms. Homeopathic concentrations are in the proper range for interacting with the receptor sites at the level of cellular membranes, enzymes and neural synapses.

Researchers have stated that the length of the bond between molecules increases in length with repetitive succussion sites. Bond length is a measure of bond strength since it takes more energy to hold the molecules together at greater distances. The kinetic energy of the succussion process becomes transformed into potential energy held within the molecules in the form of molecular bonding.

Current thought is that low dilutions (1X - 12X) work on organs and tissue and are used in acute conditions or for drainage. Drainage remedies facilitate or enhance the function of the detoxifying organs, such as liver, kidneys or lymphatic systems. They are claimed to have a stimulatory effect on the system.

The intermediate dilutions (12X - 30X) are thought to act in a regulatory fashion, with a slight stimulation of intermediary metabolism in order to achieve homeostasis. Potencies above 30X are used for emotional and mental symptoms or for the constitutional nature of the individual.

Some individuals feel that homeopathic medicines work in a manner similar to vaccines. Others claim that their action is due to the specific resonance that each drug possesses; this specific and consistent energy pattern under electromagnetic resonance imaging can be measured, so this may be part of the answer. Still others claim an action similar to the phytotherapeutic effect for low dilutions of herbs. However, if the symptoms of the body are viewed as total dysregulation and an attempt is made to find the appropriate homeopathic drug(s) based on similarity with symptoms, it could be theorised that homeopathics are able to affect receptors in a way to re-establish normal function.

That a full understanding of how homeopathy works may only come from our increased appreciation of the complexity of water's extraordinary properties is borne out by some recent research.

Scientists discover that dilution increases size of water clusters

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A chance discovery so unexpected it defies belief threatens to re-ignite debate about a scientific basis for homoeopathy (*New Scientist*, 10 Nov, 2001).

A team in South Korea discovered a whole new dimension to what happens when you dissolve a substance in water and then add more water.

Conventional wisdom says that the dissolved molecules simply spread further and further apart as a solution is diluted. But two chemists have found that some do the opposite: they clump together, first as clusters of molecules, then as bigger aggregates of those clusters. Far from drifting apart from their neighbours, they got closer together.

The discovery has stunned chemists and could provide the first scientific insight into how some homoeopathic remedies work. Homoeopaths dilute to "infinity" until no molecules of the remedy remain. The Korean findings might at last go some way to reconciling the potency of these less dilute solutions with orthodox science.

German chemist Kurt Geckeler and his colleague Shashadhar Samal stumbled on the effect while investigating fullerenes at their lab in the Kwangju Institute of Science and Technology in South Korea.

Dilution typically made the molecules cluster into aggregates 5 to 10 times as big as those in the original solutions. The growth was not linear and it depended on the concentration of the original. According to Geckeler, the history of the solution is important. The more dilute it starts, the larger the aggregates. Also, it only worked in polar solvents like water, in which one end of the molecule has a pronounced positive charge while the other end is negative.

But the findings may provide a mechanism for how some homoeopathic medicines work. Diluting a remedy may increase the size of the particles to the point where they become biologically active.

Fred Pearce, of University College London, who tried to repeat Prof Jacques Benveniste's similar dilution experiments in Paris, agrees. But it could offer some clues as to why other, less dilute homeopathic remedies work, he says. Large clusters and aggregates might interact more easily with biological tissue.

The two chemists were at pains to double-check their astonishing results. Initially, they had used the scattering of a laser to reveal the size and distribution of the dissolved particles. To check, they used a scanning electron microscope to photograph films of the solutions spread over slides. This, too, showed that dissolved substances cluster together as dilution increased.

"It doesn't prove homoeopathy, but it's congruent with what we think and is very encouraging," said Dr Peter Fisher, director of medical research at the Royal London Homoeopathic Hospital. "The whole idea of high dilution homoeopathy hangs on the idea that water has properties which are not understood," he says. "The fact that the new effect happens with a variety of substances suggests it's the solvent that's responsible. It's in line with what many homoeopaths say, that you can only make homoeopathic medicines in polar solvents."

Geckeler and Samal are anxious that other researchers follow up their work. If it is replicated, it will be groundbreaking.

The next part of Professor Kirkman's article will appear in the February issue.