

# Is complementary medicine plausible?

In the second article in a series on complementary medicine, **Edzard Ernst** asks if it is all just too implausible to be taken seriously

Complementary medicine may be popular with consumers but, by and large, the “establishment” remains sceptical, and that includes pharmacists. One of the opponents’ favourite arguments is that the plausibility of complementary medicine is close to zero. Many pharmacists maintain that there is no way these treatments can possibly work, simply because conventional science has no way of explaining how they work. And, more often than not, the theories that underpin a given treatment fly in the face of science. Does this mean that all of these treatments are a useless waste of time, money and effort?

## A sceptical view

I have to admit, some complementary medicine treatments are discouragingly far-fetched. Take traditional acupuncture, reflexology, homoeopathy or (Bach) flower remedies as examples. Traditional acupuncturists believe that the life energy (“Qi”), flowing around the body in channels called meridians, governs our health. By inserting needles into points along meridians, they hope to rebalance Qi and, in turn, help cure disease.<sup>1</sup> And not just some diseases, but practically any disease. Utterly implausible, sceptics say — nobody has ever demonstrated the existence of meridians, life energy or specific acupuncture points.

Reflexologists believe that our organs are mapped out on the soles of our feet.<sup>2</sup> Massaging the liver spot, for instance, influences the function of the liver (according to their conviction). Again, this is hugely implausible. There are no anatomical connections between areas on our feet and our inner organs, which would be a necessary precondition for all this to work.

Homoeopathy, my third example of an utterly implausible treatment, is based crucially on the principle of ultra-high dilutions. According to homoeopaths, step-wise dilution of the initial prescription to the point where no molecules remain, renders a homoeopathic remedy not less and less strong but more and more potent.<sup>3</sup> Most non-homoeopaths therefore regard homoeopathy with “scepticism about [its] plausibility”.<sup>4</sup>

Finally, proponents of (Bach) flower remedies are convinced that a set of emotional states critically determines our health. For each emotional problem they suggest a remedy made out of flowers.<sup>5</sup> Similar to homoeopathic medicines, these remedies are so dilute that no pharmacological action is

## Honeysuckle essence is a flower remedy reputed to be of use to people stuck in the past or feeling homesick

conceivable. Flower remedies are thus thought to work via subtle “energies”, which no one has yet measured or defined. Can anyone think of something less plausible than that?

## How important is plausibility?

But plausibility is not everything. Centuries ago, it used to be the most important basis for deciding whether a treatment was trustworthy — more important than the question of whether it actually helped patients or not. Purging (inducing vomiting or diarrhoea) and blood-letting, for instance, were thought to be effective, mainly because they plausibly agreed with the theory that our health was governed by four humours, which were believed to determine how our physiology and pathophysiology function. Thus patients were purged for any ailment, and many suffered more from the cure than from the disease.

But that was long ago. Today, we are wiser. We know that a treatment may be plausible but ineffective while others could be implausible yet effective. We know of many examples of treatments that work despite our failure to understand how. Aspirin, for instance, helped millions before we found out about its mode of action.

Both simple common sense and medical history teach us that medical interventions can work even if we do not yet understand exactly how. It follows that acupuncture, for example, could be effective. Never mind the implausibility of its ancient Chinese theory. In fact, modern neurophysiological research has come up with several hypotheses that explain its mechanism of action. One is that inserting needles in our skin releases endorphins in our brain which act like painkillers and feel-good factors.<sup>1</sup> Similarly, homoeopathy might be partly explained through the structural state of a solution that builds up during the potentiation (dilution) process.<sup>6</sup> In

other words, the biological implausibility of these therapies could be simply due to the fact that we have not done our research properly or choose to remain ignorant of the emerging facts.

Moreover, there is also another sort of plausibility that is in favour of many complementary therapies even though hard-nosed scientists love to ignore it: history of use and thousands of years of experience. Acupuncture, reflexology, homoeopathy, etc, have all been in use for many years. During

this time, a large body of experience has accumulated. Surely this cannot be totally worthless.

Many complementary therapies have been “field tested” for hundreds of years on millions of people. The resulting evidence amounts to a kind of plausibility that science neglects at its peril. It certainly does not prove efficacy but it can be an important basis for further research. In scientific terms it can be used to formulate a hypothesis (eg, acupuncture alleviates pain or a homoeopathic arnica heals bruises). And that is precisely the true function of plausibility. In medicine, it lends support to the possibility of a clinical benefit without proving it.

## Efficacy trials needed

The effectiveness of medical treatments must be tested through rigorous trials. How they work is certainly interesting but not of primary importance. The main question, particularly in relation to a treatment that has been around for hundreds of years, is whether (not how) it works. That is what evidence-based medicine is, essentially, about. Plausibility has thus become a secondary issue. In complementary medicine we should first ask, does it work? And only then might we ask whether or not it is plausible.

## References

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