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# Think yourself better

Alternative medical treatments rarely work. But the placebo effect they induce sometimes does. This article, published in *The Economist* two months ago, may have a particular relevance for oncology, where understanding the science is so important that it can be easy to overlook the contribution of the human touch.

## Dr Ernst believes that doctors can usefully learn from the chiropractors, homeopaths and Ascended Masters

**O**n May 29th Edzard Ernst, the world's first professor of complementary medicine, will step down after 18 years in his post at the Peninsula Medical School, in south-west England. Despite his job title (and the initial hopes of some purveyors of non-mainstream treatments), Dr Ernst is no breathless promoter of snake oil. Instead, he and his research group have pioneered the rigorous study of everything from acupuncture and crystal healing to Reiki channelling and herbal remedies.

Alternative medicine is big business. Since it is largely unregulated, reliable statistics are hard to come by. The market in Britain alone, however, is believed to be worth around £210m (\$340m), with one in five adults thought to be consumers, and some treatments (particularly homeopathy) available from the National Health Service. Around the world, according to an estimate made in 2008, the industry's value is about \$60 billion.

Over the years Dr Ernst and his group have run clinical trials and published over 160 meta-analyses of other studies. (Meta-analysis is a statistical technique for extracting information from lots of small trials that are not, by themselves, statistically reliable.) His findings are

stark. According to his *"Guide to Complementary and Alternative Medicine"*, around 95% of the treatments he and his colleagues examined – in fields as diverse as acupuncture, herbal medicine, homeopathy and reflexology – are statistically indistinguishable from placebo treatments. In only 5% of cases was there either a clear benefit above and beyond a placebo (there is, for instance, evidence suggesting that St John's Wort, a herbal remedy, can help with mild depression), or even just a hint that something interesting was happening to suggest that further research might be warranted.

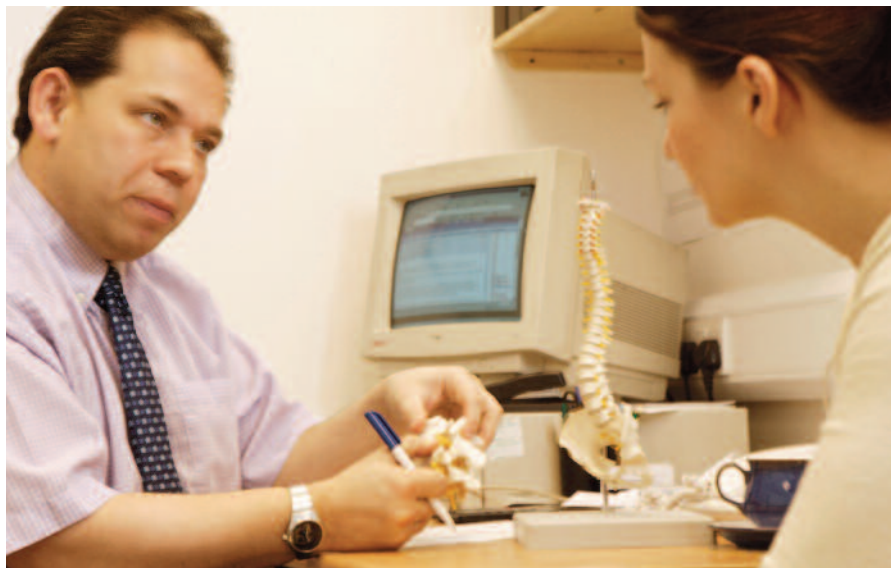
It was, at times, a lonely experience. Money was hard to come by. Practitioners of alternative medicine became increasingly reluctant to co-operate as the negative results piled up (a row in 2005 with an alternative-medicine lobby group founded by Prince Charles did not help), while traditional medical-research

bodies saw investigations into things like Ayurvedic healing as a waste of time.

Yet Dr Ernst believes his work helps address a serious public-health problem. He points out that conventional medicines must be shown to be both safe and efficacious before they can be licensed for sale. That is rarely true of alternative treatments, which rely on a mixture of appeals to tradition and to the 'natural' wholesomeness of their products to reassure consumers. That explains why, for instance, some homeopaths can market treatments for malaria, despite a lack of evidence to suggest that such treatments work, or why some chiropractors can claim to cure infertility.

Despite this lack of evidence, and despite the possibility that some alternative practitioners may be harming their patients (either directly, or by convincing them to forgo more conventional treatments for their ailments), Dr Ernst also

**I will help you feel better. Whether or not their treatments have any merit, the time and attention alternative therapists can spend in consultations, and their sense of assurance and belief in the therapies they are proposing, can make a real difference to the wellbeing of their patients**



## Neuro-imaging shows that this deception stimulates the production of naturally occurring painkilling chemicals

believes there is something that conventional doctors can usefully learn from the chiropractors, homeopaths and Ascended Masters. This is the therapeutic value of the placebo effect, one of the strangest and slipperiest phenomena in medicine.

### MIND AND BODY

A placebo is a sham medical treatment – a pharmacologically inert sugar pill, perhaps, or a piece of pretend surgery. Its main scientific use at the moment is in clinical trials as a baseline for comparison with another treatment. But just because the medicine is not real does not mean it doesn't work. That is precisely the point of using it in trials: researchers have known for years that comparing treatment against no treatment at all will give a misleading result.

Giving pretend painkillers, for instance, can reduce the amount of pain a patient experiences. A study carried out in 2002 suggested that fake surgery for arthritis in the knee provides similar benefits to the real thing. And the effects can be harmful as well as helpful. Patients taking fake opiates after having been prescribed the real thing may experience the shallow breathing that is a side-effect of the real drugs.

Besides being benchmarks, placebos are a topic of research in their own right. On May 16th the Royal Society, the world's oldest scientific academy, published a volume of its *Philosophical*

*Transactions* devoted to the field.

One conclusion emerging from the research, says Irving Kirsch, a professor at Harvard Medical School who wrote the preface to the volume, is that the effect is strongest for those disorders that are predominantly mental and subjective, a conclusion backed by a meta-analysis of placebo studies that was carried out in 2010 by researchers at the Cochrane Collaboration, an organisation that reviews evidence for medical treatments. In the case of depression, says Dr Kirsch, giving patients placebo pills can produce very nearly the same effect as dosing them with the latest antidepressant medicines.

Pain is another nerve-related symptom susceptible to treatment by placebo. Here, patients' expectations influence the potency of the effect. Telling someone that you are giving him morphine provides more pain relief than saying you are dosing him with aspirin – even when both pills actually contain nothing more than sugar. Neuro-imaging shows that this deception stimulates the production of naturally occurring painkilling chemicals in the brain. A paper in *Philosophical Transactions* by Karin Meissner of Ludwig-Maximilians University in Munich concludes that placebo treatments are also able to affect the autonomic nervous system, which controls unconscious functions such as heart-beat, blood pressure, digestion and the

like. Drama is important, too. Placebo injections are more effective than placebo pills, and neither is as potent as sham surgery. And the more positive a doctor is when telling a patient about the placebo he is prescribing, the more likely it is to do that patient good.

Despite the power of placebos, many conventional doctors are leery of prescribing them. They worry that to do so is to deceive their patients. Yet perhaps the most fascinating results in placebo research – most recently examined by Ted Kaptchuk and his colleagues at Harvard Medical School, in the context of irritable-bowel syndrome – is that the effect may persist even if patients are told that they are getting placebo treatments.

Unlike their conventional counterparts, practitioners of alternative medicine often excel at harnessing the placebo effect, says Dr Ernst. They offer long, relaxed consultations with their customers (exactly the sort of "good bedside manner" that harried modern doctors struggle to provide). And they believe passionately in their treatments, which are often delivered with great and reassuring ceremony. That alone can be enough to do good, even though the magnets, crystals and ultra-dilute solutions applied to the patients are, by themselves, completely useless.

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