

# Annals of the Rheumatic Diseases

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## Leader

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### Evidence-based complementary medicine: A contradiction in terms?

Complementary medicine (CM) has been defined as: “diagnosis, treatment and/or prevention which complements mainstream medicine by contributing to a common whole, by satisfying a demand not met by orthodoxy or by diversifying the conceptual frameworks of medicine.”<sup>1</sup> It comprises well over 100 different therapies, each of which has little in common with the others, and proclaims to be a veritable panacea.<sup>2</sup> Some of the most prevalent treatments are acupuncture, aromatherapy, herbalism, homoeopathy, reflexology, and spinal manipulation (chiropractic and osteopathy). To put it mildly, CM is a notoriously controversial area.<sup>3</sup> At the same time, CM is immensely popular and increasingly profitable (for example, MacLennan *et al.*<sup>4</sup>) Up to one half of the general population is using some form of CM.<sup>4–5</sup> With rheumatological patients, this figure is even higher.<sup>6</sup> It is therefore timely to ask whether CM is, at all, evidence based.

The apparently simple key question is, does it work? CM is often perceived as effective by those who use it. Perceived effectiveness can be viewed as being composed of specific and non-specific effectiveness,<sup>7</sup> that is, therapeutic success can be brought about by a specific mechanism of the given treatment, for example, endorphin release after acupuncture, or by factors not directly related to the therapy itself, for example, empathy, time spent with the patient, expectation, etc. Each of the two elements can vary in size from almost 0–100% of the total therapeutic effect.<sup>7</sup> It seems obvious therefore, that rigorous research should differentiate the non-specific from the specific effects—not least because, in the final analysis, this is in the interest of the patient.

Recent studies suggest that around 80% of all acute orthodox interventions used in a hospital<sup>8</sup> or general practice<sup>9</sup> setting are based on evidence. This figure does not necessarily apply to conditions seen by complementary practitioners (nor to those seen by rheumatologists). How solid then is the evidence base in CM? There is still far too little rigorous research into the efficacy and effectiveness of CM. When available at all, studies are often methodologically flawed,<sup>10</sup> and the emerging evidence is usually contradictory. Therefore systematic reviews will provide the most objective summary of the existing knowledge. (The selective citation of evidence fitting a particular hypothesis seems to be disappointingly prevalent in CM<sup>11</sup> and can be seriously misleading). Examples of the conclusions of

authoritative systematic reviews and meta-analyses are quoted below.

- Acupuncture for chronic pain (including rheumatological conditions): “Various sources of bias ... precluded a conclusive finding”.<sup>12</sup>

- Homoeopathy for all indications (including rheumatoid arthritis and other rheumatological conditions): “the clinical effects of homoeopathy are (not) completely due to placebo ...”,<sup>13</sup> implying that homoeopathy has, on average, clinical effects beyond the placebo effect.

- Chiropractic for back pain: there is “no convincing evidence for the effectiveness of chiropractic for acute or chronic low back pain.”<sup>14</sup>

Such reviews can be criticised, not least because of the heterogeneity of the original trials included. Systematic reviews on defined rheumatological conditions would therefore be more helpful. Unfortunately, the evidence emerging from work of this nature is even less compelling. A recent review of acupuncture as a treatment of inflammatory rheumatic diseases, for instance, concluded that this form of therapy “cannot be recommended.”<sup>15</sup> My own review related to osteoarthritis found that “the most rigorous studies suggest that acupuncture is not superior to sham-needling.”<sup>16</sup>

This most sobering state of affairs is difficult to reconcile with the success of CM in everyday clinical practice. Most of those who use CM are satisfied with it and many try CM because of disappointment with mainstream medicine.<sup>17–18</sup> As argued above, the reasons for perceived effectiveness may often lie in the quality and character of care more than the specifics of the given therapy. A recent survey, for instance, implied that arthritis sufferers who use CM and mainstream medicine in parallel, consistently rate the quality of the therapeutic relationship with CM practitioners higher than that with conventional doctors.<sup>19</sup>

If a given (complementary or orthodox) treatment were devoid of specific effects, this would not necessarily mean that it is totally useless. There may be a case for evidence-based placebo treatments. Non-specific effects can be an important part of the total therapeutic effect of any treatment, mainstream or complementary.<sup>7</sup> This area is much neglected by present research. We need to understand the “ins and outs” of non-specific effects better than we do at present.<sup>20</sup> This type of inquiry is by no means aimed at denigrating CM but at determining how best to

optimise non-specific effects and at finding out how they can be used more widely to the benefit of the patient. There may be important lessons to learn, also for mainstream rheumatology.

One essential precondition would, however, be safety. CM is often promoted and perceived to be entirely safe. Yet, practitioners should know better. Quite simply, there will never be a therapy that is totally free of risk. In conventional medicine, risks are routinely recognised, monitored, and quantified. This is essential for balancing them against the benefit of a given treatment. Only if the potential benefits outweigh the potential risks will we use this therapy. What sounds like a platitude to physicians, amounts to a veritable revolution for complementary practitioners. In CM, comparable risk benefit analyses are rarely possible: not only are we uncertain about the benefits of most complementary therapies (see above), we also know far too little about the risks of CM. All we do know is that complications, even serious ones, are on record,<sup>21</sup> but we cannot even begin to estimate their frequency. In addition to the issue of “direct” adverse effects, there is a further, neglected “indirect” safety issue: even if a given complementary therapy were entirely safe, the complementary therapists might not be. An example might be the over use of radiography by chiropractors.<sup>22</sup>

Most experts agree that the best way ahead lies in conducting rigorous research. We all know that the randomised controlled trial is not a flawless research tool. But for establishing therapeutic efficacy there is, generally speaking, no better method for excluding bias. What applies to mainstream medicine also applies to CM; there can be no room for double standards.<sup>23</sup> Future research efforts might be structured in the following way. Systematic reviews and meta-analyses should establish what is presently known and define specific research questions. In turn, these should be investigated with the most rigorous research design possible. It is true that in CM some trials cannot be conducted in a double blind and placebo controlled fashion. Yet, randomised controlled trials are practically always possible and desirable.<sup>23</sup>

Areas of priority might lie in testing the efficacy of acupuncture and plant-based remedies for defined rheumatological conditions. Whenever possible, investigations into the biological, psychological and cultural mechanisms of action of CM should be conducted in parallel. Such research would establish how given treatments work once it is clear (or at least likely) that they work. As there is far less commercial interest in CM than in conventional (drug) therapy, the money for such research would need to come, to a large extent, from public funds.

The bottom line of all this seems clear. “Evidence-based CM” must no longer remain a contradiction in terms. We need to be able to advise our patients responsibly about the risks and benefits of these treatments.<sup>24</sup> Failing to take this challenge would be nothing less than disregarding the best interests of our patients.

For all those who are interested in this topic, the Department of Complementary Medicine edits a journal that focuses on “evidence-based complementary medicine.” For details see our website at <http://www.ex.ac.uk/FACT/>

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- Ernst E, Resch KL, Mills S, Hill R, Mitchell A, Willoughby M, *et al.* Complementary medicine, a definition. [Definition adopted by the Cochrane Field in Complementary Medicine]. *Br J Gen Pract* 1996;48:506.
- BMA. *Complementary medicine, new approaches to good practice*. Oxford: Oxford University Press, 1993.
- Ernst E. Complementary medicine, common misconceptions. *J Roy Soc Med* 1995;88:244–7.
- MacLennan AH, Wilson DH, Taylor AW. Prevalence and cost of alternative medicine in Australia. *Lancet* 1996;347:569–73.
- Fisher P, Ward A. Complementary medicine in Europe. *BMJ* 1994;309:107–11.
- Ernst E. The usage of complementary therapies in rheumatology: a systematic review. *Clin Rheumatol* 1998;17:301–5.
- Ernst E, Resch KL. The concept of the perceived and true placebo effect. *BMJ* 1995;311:551–3.
- Ellis J, Mulligan E, Rowe J, Sackett DL. Inpatient general medicine is evidence based. *Lancet* 1995;346:407–10.
- Gill P, Dowell AC, Neal RD, Smith N, Heywood P, Wilson AE. Evidence based general practice: a retrospective study of interventions in one training practice. *BMJ* 1996;312:819–21.
- Borchgrevink CF. Forskning i alternativ medicin. *Tidsskr Nor Lægeforen* 1997;117:2469–73.
- Ernst E, Pittler MH. Alternative therapy bias. *Nature* 1997;385:480.
- Ter Riet G, Kleijnen J, Knipschild P. Acupuncture and chronic pain: a criterion based meta-analysis. *J Clin Epidemiol* 1990;11:1191–9.
- Linde K, Claudius N, Ramirez G, Melchart D, Eitel F, Hedges LV, *et al.* Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo controlled trials. *Lancet* 1997;350:834–43.
- Assendelft WWJ, Koes BW, Heijden GJMG, Bouter LM. The effectiveness of chiropractic for treatment of low back pain – an update and attempt at statistical pooling. *J Manipulative Physiol Ther* 1996;19:499–507.
- Lautenschlager J. Akupunktur bei der Behandlung entzündlich-rheumatischer Erkrankungen. *Z Rheumatol* 1997;56:8–20.
- Ernst E. Acupuncture as a symptomatic treatment of osteoarthritis. A systematic review. *Scand J Rheumatol* 1997;26:444–7.
- Astin JA. Why patients use alternative medicine. Results of a national study. *JAMA* 1998;279:1548–53.
- Ernst E, Willoughby M, Weihmayr TH. Nine possible reasons for choosing complementary medicine. *Perfusion* 1995;8:356–8.
- Resch K, Hill S, Ernst E. Use of complementary therapies by individuals with “arthritis”. *Clin Rheumatol* 1997;16:391–5.
- Ernst E, Herxheimer A. The power of placebo: let’s use it to help as much as possible. *BMJ* 1996;313:1569–70.
- Ernst E, De Smet PAGM. Adverse effects of complementary therapies. In: Duke MNG, ed. *Meyler’s side effects*. Amsterdam: Elsevier, 1996.
- Ernst E. Chiropractors’ use of X-rays. *Br J Radiol* 1998;71:249–51.
- Vickers A, Cassileth B, Ernst E, Fisher P, Goldman P, Jonas W, *et al.* How should we research unconventional therapies? A panel report from the conference on Complementary and Alternative Medicine Research Methodology, National Institute of Health. *Int J Technol Assess Health Care* 1997; 13:111–21.
- Eisenberg DM. Advising patients who seek alternative medical therapies. *Ann Intern Med* 1997;127:61–9.