



meta-analysis gave no hint of the identity of these eight trials.

Both these reviews are out of line with the other three systematic reviews and meta-analyses of homeopathy for all conditions published in the peer reviewed literature,<sup>8-10</sup> all of which have come to essentially positive conclusions, as have several systematic reviews and meta-analyses for specific conditions.<sup>4-6 11</sup>

The negative publications have influenced medical and scientific opinion but had little effect on the public popularity of homeopathy. More recent overviews have had more favourable conclusions, including a health technology assessment commissioned by the Swiss federal government that concluded that homeopathy is “probably” effective for upper respiratory tract infections and allergies.<sup>12</sup>

The CORE-HOM database of clinical research in homeopathy ([www.carstens-stiftung.de/core-hom](http://www.carstens-stiftung.de/core-hom)) includes 1117 clinical trials of homeopathy, of which about 300 are randomised controlled trials.

### Comparative effectiveness research

For practical decisions about homeopathy the most relevant evidence is observational comparative effectiveness research examining effectiveness in real world situations, which the Australian review did not include. Several such non-randomised studies have compared outcomes in patients attending family physicians who do and do not integrate homeopathy into their practice.

The multinational comparative effectiveness studies IIPCOS (International Integrative Primary Care Outcomes Studies) compared outcomes in primary care for patients with acute upper respiratory problems. IIPCOS-I included 456 patients treated by 30 doctors at six clinical sites in four countries (including the UK). At 14 days symptoms had resolved for 82.6% of homeopathic patients compared with 68% of patients receiving conventional treatment; the incidence of adverse events was 7.8% and 22.3%, respectively.<sup>13</sup>

### Homeopathy is safe and improves clinical outcomes without increasing costs

The IIPCOS-II study included 1577 patients at 57 primary care sites (10 in the UK) in eight countries, with similar results.<sup>14</sup>

Studies in France and Germany show that GPs who integrate homeopathy in their practice have better outcomes than those who do not, for a range of conditions treated in general practice; costs are equivalent and homeopathic GPs use fewer antimicrobial drugs.<sup>15 16</sup>

### Better patient outcomes

The largest comparative effectiveness study of homeopathy is the EPI3 study. This nationwide French study included 6379 patients, comparing treatment outcomes in musculoskeletal conditions, upper respiratory tract infection, sleep disorders, anxiety, and depression in terms of clinical benefit, medical care and

medication, adverse effects, and loss of therapeutic opportunity.

The musculoskeletal cohort included 1153 patients; patients who chose homeopathy had healthier lifestyles, higher levels of education, and more motivation to self care but had more chronic disease than patients attending conventional physicians. Outcomes were similar between groups, but patients who attended homeopathic physicians consumed about half the amount of non-steroidal anti-inflammatory drugs.<sup>17</sup> The upper respiratory tract infection cohort of EPI3 yielded a similar result, with reduced use of antibiotics.<sup>18</sup>

Health professionals trained in homeopathy do not oppose the use of conventional treatments, including immunisation. When integrated with standard care homeopathy is safe, popular with patients, improves clinical outcomes without increasing costs, and reduces the use of potentially hazardous drugs, including antimicrobials.

### Most independent reviews have failed to show that homeopathy is effective

example<sup>20</sup>), whereas this is not true for the most rigorous of the 250 or so controlled clinical trials (such as<sup>21</sup>).

The explanation seems obvious: the perceived benefits of homeopathy are caused by non-specific effects. Once these are adequately controlled for in trials, the results tend to show that highly dilute homeopathic remedies are indistinguishable from placebos. Even a former consultant of the Royal London Homeopathic Hospital has agreed, writing, “The great majority . . . of the improvement that patients experience is due to non-specific causes . . . Homeopathy has not been proven to work.”<sup>22</sup>

Most independent systematic reviews of randomised controlled trials have failed to show that homeopathy is effective,<sup>23</sup> and reviews with positive conclusions<sup>24</sup> usually have serious methodological flaws.<sup>25</sup>

The most comprehensive, independent, and rigorous evaluation of homeopathy was published earlier this year by the Australian National Health and Medical Research Council.<sup>3</sup> In line with many previous assessments, it concluded that “homeopathy should not be used to treat health conditions that are chronic, serious, or could become serious.”

### Homeopathy can harm

As the typical homeopathic remedy is devoid of active molecules, it is unlikely to cause serious adverse effects. However, even a placebo can cause harm, if it replaces an effective therapy<sup>26</sup>; in the words of the Australian report: “People who choose homeopathy may put their health at risk if they reject or delay treatments for which there is good evidence for safety and effectiveness.”<sup>23</sup>

Yet homeopaths continue to advocate their treatments for many life threatening conditions; some even backed homeopathy

for treating patients with Ebola. Others recommend their remedies as a replacement for conventional immunisations.<sup>27</sup> With almost no systematic research into such issues, however, nobody can say how often they have caused actual harm to patients; anecdotally, however, I know of several deaths that have occurred in this unnecessary way. The ultramolecular homeopathic remedy might be harmless but the same cannot be said for all homeopaths.<sup>26</sup>

Because the risk-benefit balance of homeopathy is clearly not positive, even its use as “benign placebo” for self limiting conditions is problematic. In such cases, it would be preferable to reassure patients rather than to deceive them with placebos. In other instances, such an approach seems unnecessary: clinicians administering treatments that are effective with compassion and empathy will also generate a placebo response<sup>28</sup>—with the additional benefit of a specific

therapeutic response. Finally, some claim that homeopathy might be helpful in cases where no specific treatment exists; this argument too is questionable and would apply only to the relatively few patients who cannot be helped even by a symptomatic treatment.

### Costs and opportunity costs

In the European Union, the annual expenditure on homeopathic (and anthroposophic) remedies exceeds €1bn (£700m; \$1bn).<sup>29</sup> Spending by the NHS has declined sharply recently, in line with the evidence supporting homeopathy. The exact spend is unknown but is estimated at £3m-£5m, not including staff or infrastructure. These funds could and should be spent more usefully elsewhere. The notion that the NHS must provide homeopathy for patients who want it is disingenuous. Given this, it seems unreasonable, even unethical, for healthcare professionals to recommend its use.

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