Authors' objectives
To review the effectiveness of homeopathic remedies by the type of remedy most frequently submitted to controlled trials - this being arnica.

Searching
The authors searched the electronic databases of MEDLINE, EMBASE, CISCOM, and the Cochrane Library (from their inception to October 1997) and incorporated trials from two previous reviews (Kleijnen, 1991 and Linde, 1997 (see Other Publications of Related Interest)). The authors also handsearched 28 specialised homeopathic journals and reviewed their own files as well as review articles and books on homeopathy. The bibliographies of retrieved articles were searched for further trials and there were no language restrictions placed on the search. Trials not published in the peer-reviewed literature were excluded.

Study selection
Study designs of evaluations included in the review
Controlled clinical trials using placebo were included. Studies using one potency against another, trials with arnica as one of several remedies with no subanalysis on a pure arnica group, or studies in which arnica had been administered concomitantly with other remedies were excluded.

Specific interventions included in the review
Arnica montana in various dosages in the intervention groups and placebo or metronidazole (400 mg, twice daily) in control groups.

Participants included in the review
Patients and healthy volunteers being treated for delayed-onset muscle soreness, prevention of post-surgical (dental) complications, acute trauma, stroke, and experimentally inflicted mechanical bruising.

Outcomes assessed in the review
Outcomes assessed were:
1. For delayed-onset muscle soreness - soreness intensity and duration, maximal isometric muscle strength, and serum creatine kinase concentrations.
2. For prevention of postsurgical (dental) complications - pain, trismus, edema, bleeding and wound healing.
3. For acute trauma outcomes - pulse rate, blood pressure, respiratory rate, and subjective symptoms.
4. For stroke outcomes - 3-month mortality rates.
5. For experimentally inflicted mechanical bruising - extent of bruising and subjective symptoms.

How were decisions on the relevance of primary studies made?
All studies were read in full by both authors independently. Discrepancies were settled by discussion.

Assessment of study quality
The methodological quality of the included trials was assessed using the score according to Jadad et al (see Other Publications of Related Interest). Judgements were made by both authors independently. Discrepancies in the evaluation of trials were settled by discussion.
Data extraction
Data were extracted independently by both authors using a standardised, pre-defined format. Discrepancies were settled by discussion.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review summarising the individual main results of the included trials.

How were differences between studies investigated?
The authors do not state how they investigated differences between the studies.

Results of the review
Eight studies were included in the review (338 participants). Four studies (253 participants) were randomised, double-blind trials; 2 were double-blind trials (62 participants); 1 was a double-blind crossover trial (10 participants); and 1 was a single-blind crossover trial (13 participants).

Two studies yielded a statistically significant positive result (i.e. arnica superior to placebo), 2 studies had a numerically positive result (i.e. no formal test statistics were applied but an advantage of the arnica groups was apparent) and 4 studies showed a significantly negative result (i.e. arnica not superior to placebo). Most trials were methodologically weak.

Authors' conclusions
The hypothesis claiming that homeopathic arnica is clinically effective beyond a placebo effect is not based on methodologically sound placebo-controlled trials.

CRD commentary
The authors have clearly stated their research question and their inclusion and exclusion criteria. The literature search was extensive and without language restrictions. Unpublished data was not included in the analysis.

The data extraction is reported in tables and text and summarised in a narrative report of the main results of the included individual trials. The quality of the included studies was assessed but not presented or used to weight the studies. The authors have reported how the articles were selected and how data was extracted. The authors have not discussed or tested for homogeneity but have acknowledged several drawbacks about the quality and design of the included studies. Their conclusions appear to follow from the results, however not enough information is presented to assess how reliable their conclusions are.

Implications of the review for practice and research
The authors did not state any implications for further research and practice.

Bibliographic details

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Other publications of related interest

These additional published commentaries may also be of interest. Winston J. Review of placebo-controlled trials of homeopathic arnica does not show efficacy. Health Inform 1999;5:5. Linde K. Available controlled trials do not support the efficacy of homoeopathic arnica. FACT 1999;4:131-2.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.