CRD summary
This review assessed analgesic effects of treatments for non-specific low back pain and concluded that most effect sizes were small to moderate in comparison to placebo and did not differ between acute and chronic populations. Given small sample sizes and a lack of individual study results, the pooled effect sizes reported in this review should be interpreted with caution.

Authors' objectives
To compare the analgesic effects of treatments for non-specific low back pain (NSLBP) with placebo.

Searching
MEDLINE, EMBASE, CINAHL, PsycINFO and Cochrane Central Register of Controlled Trials (CENTRAL) were searched up to November 2006. Search terms were reported. Reference lists of retrieved studies and relevant trial reports were searched.

Study selection
Randomised controlled trials (RCTs) that compared treatments for NSLBP with placebo and reported a continuous measure of pain were eligible for inclusion in the review. Studies where the placebo intervention was a contemporary treatment (such as an educational booklet) were excluded. Excluded participants included those with radicular syndrome, cauda equina syndrome, infection, neoplasm, inflammatory disease, pregnancy, fracture or spinal surgery in the preceding 12-month period. Primary prevention studies were excluded.

Included studies assessed 34 different types of treatment intervention. The most frequently assessed treatments were muscle relaxants, followed by non-steroidal anti-inflammatory drugs (NSAIDs) and spinal manipulative therapy; other frequently investigated interventions were acupuncture, anti-depressants, herbal medicines, radiofrequency denervation and transcutaneous electrical nerve stimulation (TENS). Concurrent therapy (mainly rescue medication or continuation of previous treatments) was provided in approximately 44% of comparisons between treatment and placebo; baseline care was provided in approximately 12% of comparisons. Most studies assessed chronic NSLBP.

The authors stated neither how papers were selected for review nor how many reviewers performed the selection.

Assessment of study quality
Study quality was assessed by two independent reviewers using the 11-item PEDro scale. Each study was awarded a score between 0 and 11 points. Trials that scored 0 to 3 points were considered low quality. Disagreements were resolved through consensus.

Data extraction
Two reviewers independently extracted the study data. Pain scales were re-scaled to a 0 to 100-point scale where necessary. Mean differences between control and intervention groups were recorded. Where there were insufficient data to calculate variance according to the methods of the Cochrane Collaboration Handbook, baseline standard deviations (SDs) or pooled SDs were used. For studies with data at multiple assessment points, the first time point after end of therapy was selected. A third reviewer extracted data from non-English language studies.

Methods of synthesis
Studies were pooled according to intervention and weighted mean differences (WMD) calculated for pain scores using a random-effects model. Where studies included multiple intervention treatments, each was compared separately with placebo as in an individual trial. Where studies compared different doses of the same drug, one dose was selected at random. Secondary analyses were performed in populations with distinct durations of symptoms (acute, sub-acute and
chronic). Effect sizes were defined as large (>20 points), moderate (10 to 20 points) and small (<10 points) according to definitions from American College of Physicians and American Pain Society.

Results of the review
Seventy-six RCTs (n approximately 7,026) that included 81 comparisons with placebo were included in the review. Study quality was variable. Only two studies (one of spinal manipulative therapy and one that assessed exercise) were considered low quality.

Half of the treatments reported statistically significant effects in favour of the intervention treatment, but most effects were only small or moderate: 47% (16 studies) of the treatments were associated with small effect sizes (<10 points out of a possible 100 points); 38% (13 treatments) were associated with moderate effect sizes (between 10 and 20 points); and only 15% (neuroreflexotherapy, infrared, vitamin B₁₂, immunoglobulins and electroacupuncture) were associated with large effect sizes (>20 points). Interventions associated with large effect sizes were only investigated in single trials.

Exclusion of low-quality studies from analyses resulted in a further reduction in effect size for exercise and spinal manipulative therapy, which had only small effect sizes initially. Additional analyses to investigate effects of different symptom durations did not show any significant differences in effects between mixed populations of acute/sub-acute patients and chronic patients.

Authors’ conclusions
The effect sizes of many treatments for non-specific low back pain were small to moderate in comparison to placebo and did not differ between populations with acute and chronic symptoms.

CRD commentary
This review answered a clearly defined research question with broad inclusion criteria for the type of intervention. A number of electronic databases were searched and no limitations appear to be placed on language. However, it appeared that no specific attempts were made to locate unpublished studies and so there was a risk of publication bias. Attempts were made to reduce reviewer error and bias during the review processes; it was unclear whether similar precautions were taken when selecting the studies for inclusion. Methodological quality of the studies was assessed using appropriate criteria; most studies were of sufficient quality and only two were regarded as low quality. A large number of the pooled results were based only on small numbers of studies, often with low numbers of participants. The reliability of these analyses was unclear. Pooled analyses with larger numbers of studies (four, six or nine studies) were carried out in groups of patients who differed in duration of symptoms. Although the authors tried to investigate the effects of different durations of symptoms, the number of studies included in the analyses was small and so the reliability of these additional analyses was unclear. Other limitations of the included studies and the review were discussed by the authors. Overall, given small sample sizes and a lack of individual study results, the pooled effect sizes reported in this review should be interpreted with caution.

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

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