Manual therapy for non-specific thoracic pain in adults: review of the literature
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CRD summary
This review aimed to evaluate manual assessments and treatment of non-specific thoracic pain. The authors concluded that physical examination assessments did not show adequate inter-examiner reliability and that manipulative treatments appeared clinically effective. The review appeared to be poorly focused and this plus incomplete reporting of review methods and results means that the conclusion may be not be reliable.

Authors' objectives
To evaluate the validity and reliability of manual methods of assessment and the effectiveness of manual therapy for adults with non-specific thoracic pain.

This abstract refers only to the assessment of effectiveness.

Searching
PubMed, EMBASE, CINAHL, PEDro and The Cochrane Library were searched from inception to May 2007. Search terms were reported. Reference lists were screened. Studies could be published in English, German, French, Spanish, Portuguese or Italian.

Study selection
Controlled experimental studies that evaluated treatments that were within physiotherapy or manual therapy practice and that targeted the thoracic spine and rib cage were eligible for inclusion. Studies had to score more than 4 out of 10 on the PEDro score. Studies that evaluated specified physical modalities were excluded.

The included treatment studies evaluated a variety of different types and sites of manipulation (mostly chiropractic-like therapy). Practitioners varied in experience. Control interventions included no intervention and placebo treatment. Review outcomes included various measures for mechanical effects (such as end-play response, range of motion and stiffness at various sites) and clinical effects of manipulation (including specified indexes of disability, muscle strength, blood pressure, anxiety and range of motion).

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

Assessment of study quality
Validity was apparently assessed using the PEDro score. Some PEDro scores were attributed by PEDro and others were attributed by an unknown number of authors. The maximum possible score was 10 points.

Data extraction
The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction. Results were presented as effect sizes and standard errors. For each study, findings were classified as positive or negative for each assessment site and each outcome.

Methods of synthesis
The studies were combined in a narrative synthesis.

Results of the review
Four studies (n=204) comprised three randomised controlled trials (RCTs) (n=174) and one controlled clinical trial (n=30) reported the mechanical effects of manipulation; five RCTs (n=187) evaluated the clinical effects of manipulation (three of the five trials were conducted by the same researchers).

PEDro scores ranged from 4 to 10 out of 10. One study scored 10 points, two scored 8, one scored 6 and one scored 4.
points.

**Mechanical effects of manipulation:** Two studies reported positive effects and two reported negative effects.

**Clinical effects of manipulation:** All five RCTs reported positive effects for manipulation. These included effects on neck disability indexes (two studies), pain ratings (one study), trapezius muscle strength (one study), systolic and diastolic blood pressure (one study) and range of motion and pain (one study). Some studies assessed more than one outcome.

**Authors’ conclusions**
Manipulative treatments appeared effective for non-specific thoracic pain, but it could not be determined if they were better than other treatments or placebo.

**CRD commentary**
The review question was clearly stated. Inclusion criteria were broadly specified in terms of some aspects of study design, intervention and outcomes. Several relevant sources were searched and some attempts were made to minimise language bias; however, studies in other languages may have been omitted. No attempts to minimise publication bias were reported. It was unclear whether steps were taken to minimise reviewer error and bias during study selection, data extraction and validity easement. Study validity was assessed, but only aggregated scores were reported and this made it difficult to comment independently on the reliability of the evidence presented. In view of the diversity among studies, a narrative synthesis was appropriate. However, methods used to classify studies as positive or negative were not described, vote counting as a method of summarising studies is simplistic and does not take account of effect size or clinical relevance, and potential reasons for differences in results among studies were not discussed. This appeared to be a poorly reported review and this in conjunction with incomplete reporting of review methods and results means that any conclusions may not be reliable.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that high-quality studies were required to evaluate the validity and reliability of manual assessment methods and to compare different treatments versus no treatment or placebo. Studies should distinguish between patients with acute, subacute and chronic problems, clearly define inclusion criteria for patients and describe intervention and results.

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Record Status
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.