Authors' objectives
To evaluate the effectiveness of conservative treatment options for repetitive strain injury (RSI).

Searching
MEDLINE (from 1966 to April 2000), EMBASE (from 1988 to April 2000) and the Cochrane Controlled Trials Register (Issue 2, 2000) were searched. The authors also examined the references in the retrieved articles, other relevant publications and review articles. The complete search strategy is available on request from the authors.

Study selection
Study designs of evaluations included in the review
Both randomised and non-randomised controlled trials were included in the review. The studies had to be published as full reports.

Specific interventions included in the review
The trials had to include a conservative, i.e. nonsurgical, therapy arm. All types of conservative intervention that were prescribed or performed in the treatment of RSI were included: occupational therapy, physiotherapy, exercises, behavioural therapy, chiropractic, multidisciplinary treatment or medication. Ergonomic measures were also included.

Participants included in the review
Participants with RSI were included. RSI was defined as any work disorder of the upper extremity, neck or thoracic region in adults of a working age (18 to 65 years), due to repetitive work or continuous strain at work. Patients with such complaints that were non work-related were excluded. All occupational groups were included. Studies that reported on patients with acute trauma, neoplasm, metastatic diseases and fractures were excluded.

Outcomes assessed in the review
The primary outcome measures were self-reported pain intensity (as measured on a visual analogue scale or a numerical rating scale), a global measure of improvement, return to work and generic functional status (as measured by SF-36, Nottingham Health Profile, Sickness Impact Profile).

How were decisions on the relevance of primary studies made?
Two reviewers independently evaluated the studies and any disagreements were resolved by consensus.

Assessment of study quality
An amended version of the criteria list recommended by the Cochrane Back Review Group was used to assess the methodological quality of the trials (see Other Publications of Related Interest). Three reviewers independently assessed the included trials. The final scores of the quality assessment were reached by consensus.

Data extraction
Two reviewers independently extracted the following data using a standardised form: participants (age and gender); the type of RSI; intervention details; outcome measures; timing of post-treatment and follow-up measurements; and results.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative summary, and were grouped within the type of treatment. The findings were considered to be 'generally consistent' if at least 75% of the studies showed similar results.
How were differences between studies investigated?
Clinical homogeneity was evaluated by considering the differences between the included studies with regard to the population, types of treatment and outcome measures.

Results of the review
Fifteen studies in 16 publications met the inclusion criteria. There were 12 randomised controlled trials (611 participants) and 3 controlled clinical trials (91 participants).

Overall, the methodological quality of the included studies was poor with problems of concealment of allocation, blinding and lack of intention to treat analyses.

No strong evidence was found for any of the treatment options. The authors found limited evidence that multidisciplinary rehabilitation, ergonomic intervention measures, exercises and spinal manipulation combined with soft tissue therapy were effective in providing symptom relief or improving activities of daily living. They found conflicting evidence for the effectiveness of behavioural therapy.

Authors' conclusions
Little is known about the effectiveness of conservative treatment options for RSI. The authors highlight the need for high-quality trials in this area.

CRD commentary
This review was well conducted. The inclusion and exclusion criteria were well defined for the study design, participants, interventions and outcomes. The reviewers made a thorough search for published material in several languages. However, there was no attempt to find unpublished material and abstracts were not accepted, which may have introduced publication bias. Two reviewers evaluated the trials for inclusion and extracted the data. The methodological quality of the trials was assessed by three reviewers using an adaptation of a published checklist. However, the definition of a 'high quality' trial was arbitrary. Due to clinical heterogeneity between the trials the findings were synthesised in a narrative summary, which was appropriate. This review highlighted the need for better designed trials in this area of health.

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

Research: The authors state an urgent need for high-quality trials in this area. They suggest that those designing trials should use fewer outcome measures and ensure that they are valid, reliable and responsive. The hierarchy of the outcome measures should be carefully considered, and multiple end points should be combined before the data are analysed. Trial designers should ensure that between-group rather than within-group comparisons are made. The authors also suggest that the development and application of a 'gold' standard for the clinical diagnosis of RSI could provide more comparable and generalisable results.

Bibliographic details

PubMedID
11712610

Other publications of related interest

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Behavior Therapy; Cumulative Trauma Disorders /complications /rehabilitation /therapy; Exercise Therapy; Humans; Manipulation, Chiropractic; Musculoskeletal Diseases /etiology; Occupational Diseases /etiology; Physical Therapy Specialty; Randomized Controlled Trials as Topic; Splints; Treatment Outcome

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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.