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## Physiotherapy interventions for shoulder pain

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### Summary

#### Some physiotherapy interventions are effective for shoulder pain in some cases.

There is a high prevalence of shoulder disorders in the community. Shoulder disorders can result in considerable pain and disability. Physiotherapy is often the first line of treatment for shoulder disorder. Twenty-six trials presented sufficient data to be included in meta-analysis. There is some evidence from methodologically weak trials to indicate that some physiotherapy interventions are effective for some specific shoulder disorders. The results overall provide little evidence to guide treatment. There is a clear need for further high quality trials of physiotherapy interventions, including trials using combinations of modalities, in the treatment of shoulder disorders.

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### Abstract

#### Background

The prevalence of shoulder disorders has been reported to range from seven to 36% of the population (Lundberg 1969) accounting for 1.2% of all General Practitioner encounters in Australia (Bridges Webb 1992). Substantial disability and significant morbidity can result from shoulder disorders. While many treatments have been employed in the treatment of shoulder disorders, few have been proven in randomised controlled trials. Physiotherapy is often the first line of management for shoulder pain and to date its efficacy has not been established. This review is one in a series of reviews of varying interventions for shoulder disorders, updated from an earlier Cochrane review of all interventions for shoulder disorder.

## Objectives

To determine the efficacy of physiotherapy interventions for disorders resulting in pain, stiffness and/or disability of the shoulder.

## Search strategy

MEDLINE, EMBASE, the Cochrane Clinical Trials Register and CINAHL were searched 1966 to June 2002. The Cochrane Musculoskeletal Review Group's search strategy was used and key words gained from previous reviews and all relevant articles were used as text terms in the search.

## Selection criteria

Each identified study was assessed for possible inclusion by two independent reviewers. The determinants for inclusion were that the trial be of an intervention generally delivered by a physiotherapist, that treatment allocation was randomised; and that the study population be suffering from a shoulder disorder, excluding trauma and systemic inflammatory diseases such as rheumatoid arthritis.

## Data collection and analysis

The methodological quality of the included trials was assessed by two independent reviewers according to a list of predetermined criteria, which were based on the PEDro scale specifically designed for the assessment of validity of trials of physiotherapy interventions. Outcome data was extracted and entered into Revman 4.1. Means and standard deviations for continuous outcomes and number of events for binary outcomes were extracted where available from the published reports. All standard errors of the mean were converted to standard deviation. For trials where the required data was not reported or not able to be calculated, further details were requested from first authors. If no further details were provided, the trial was included in the review and fully described, but not included in the meta-analysis. Results were presented for each diagnostic sub group (rotator cuff disease, adhesive capsulitis, anterior instability etc) and, where possible, combined in meta-analysis to give a treatment effect across all trials.

## Main results

Twenty six trials met inclusion criteria. Methodological quality was variable and trial populations were generally small (median sample size = 48, range 14 to 180). Exercise was demonstrated to be effective in terms of short term recovery in rotator cuff disease (RR 7.74 (1.97, 30.32), and longer term benefit with respect to function (RR 2.45 (1.24, 4.86)). Combining mobilisation with exercise resulted in additional benefit when compared to exercise alone for rotator cuff disease. Laser therapy was demonstrated to be more effective than placebo (RR 3.71 (1.89, 7.28)) for adhesive capsulitis but not for rotator cuff tendinitis. Both ultrasound and pulsed electromagnetic field therapy resulted in improvement compared to placebo in pain in calcific tendinitis (RR 1.81 (1.26, 2.60) and RR 1.9 (1.16, 12.43) respectively). There is no evidence of the effect of ultrasound in shoulder pain (mixed diagnosis), adhesive capsulitis or rotator cuff tendinitis. When compared to exercises, ultrasound is of no additional benefit over and above exercise alone. There is some evidence that for rotator cuff disease, corticosteroid injections are superior to physiotherapy and no evidence that physiotherapy alone is of benefit for Adhesive Capsulitis

## Authors' conclusions

The small sample sizes, variable methodological quality and heterogeneity in terms of population studied, physiotherapy intervention employed and length of follow up of randomised controlled trials of physiotherapy interventions results in little overall evidence to guide treatment. There is evidence to support the use of some interventions in

specific and circumscribed cases. There is a need for trials of physiotherapy interventions for specific clinical conditions associated with shoulder pain, for shoulder pain where combinations of physiotherapy interventions, as well as, physiotherapy interventions as an adjunct to other, non physiotherapy interventions are compared. This is more reflective of current clinical practice. Trials should be adequately powered and address key methodological criteria such as allocation concealment and blinding of outcome assessor.

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