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## Management of frozen shoulder: a systematic review and cost-effectiveness analysis

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### CRD summary

This review concluded that there was limited evidence on the effectiveness of treatments for primary frozen shoulder. The economic evidence was so limited that no conclusions could be drawn. High-quality research was required.

### Objectives

To evaluate the clinical effectiveness and cost-effectiveness of treatments for primary frozen shoulder, and identify the most appropriate intervention for each stage of the condition.

### Review methods

Nineteen databases, including DARE, EMBASE and MEDLINE, were searched up to March 2010 or January 2011, for randomised controlled trials (RCTs) of physical therapy, arthrographic distension, steroid injection, sodium hyaluronate injection, manipulation under anaesthesia, capsular release or watchful waiting, alone or in combination.

Quasi-experimental studies were included in the absence of RCTs, and case series were included for manipulation under anaesthesia and capsular release. The outcomes were pain, range of movement, function and disability, quality of life, and adverse events. A narrative synthesis, pair-wise meta-analysis, and a mixed-treatment comparison were presented.

Two researchers independently screened studies for relevance. One reviewer extracted the data and assessed quality, using a checklist based on CRD guidance; these were checked by a second reviewer.

### Results of the review

Thirty-one studies and one economic evaluation were included. Many of the studies were at a high risk of bias.

Based on single RCTs, short-wave diathermy could be more effective than home exercise. For patients who had already had treatment in most cases, high-grade mobilisation could be more effective than low-grade mobilisation.

Data from two RCTs showed that adding a single intra-articular steroid injection to home exercise could benefit patients who had a frozen shoulder for less than six months, and adding physiotherapy (including mobilisation) to a single steroid injection could be beneficial.

The mixed-treatment comparison (nine studies) found that steroids plus physiotherapy was the only treatment that had a statistically and clinically significant benefit, compared with placebo, for short-term pain (SMD -1.58, 95% CrI -2.96 to -0.42).

No studies of patients' views about treatments were identified.

The published economic evaluation suggested that low-grade mobilisation could be more cost-effective than high-grade mobilisation.

The cost-effectiveness analysis conducted as part of this review, suggested that steroids could be more cost-effective than steroids plus physiotherapy or physiotherapy alone, but these results were very uncertain.

### Conclusions

There was limited evidence on the effectiveness of treatments for primary frozen shoulder. The economic evidence was so limited that no conclusions could be drawn. High-quality research was required.

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This is a high quality systematic review involving CRD that meets the criteria for inclusion on DARE. This structured abstract presents a brief summary of the review methods, the results and conclusions.