Effect of specific exercise strategy on need for surgery in patients with subacromial impingement syndrome: randomised controlled study

This is a summary of a paper that was published on bmj.com as BMJ 2012;344:e787

STUDY QUESTION Can a specific exercise strategy improve shoulder function and pain in patients with subacromial impingement syndrome, thereby decreasing the need for arthroscopic subacromial decompression?

SUMMARY ANSWER Compared with a control exercise group, patients in the specific exercise group had significantly greater improvements in shoulder function and pain and fewer patients needed surgery at the three month assessment.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Different exercise programmes are used as first line treatment in patients with subacromial impingement syndrome, but conclusive evidence to support the efficacy for these programmes is lacking. This specific exercise strategy proved effective in improving shoulder function and pain in patients in whom earlier conservative treatment had failed.

DESIGN This was a randomised, participant and single assessor blinded, controlled study. Patients were randomised to a specific exercise strategy, targeting the rotator cuff and scapula stabilisers, or to control exercises for 12 weeks. Patients in both groups received five to seven individual sessions with a physiotherapist during this period.

PARTICIPANTS AND SETTING From the department of orthopaedics, Linköping University Hospital, Sweden, we recruited 102 patients with long standing (more than six months) subacromial impingement syndrome in whom earlier conservative treatment had failed and who were on a waiting list for surgery.

PRIMARY OUTCOMES The primary outcome was change in the Constant-Murley shoulder score between baseline and an assessment at three months. Secondary outcomes included patients’ global impression of change because of treatment and their decision regarding surgery.

MAIN RESULTS AND THE ROLE OF CHANCE Overall, 97 (95%) participants completed the 12 week study. The specific exercise group had a significantly (P<0.001) greater improvement in the Constant-Murley score than the control exercise group (between group mean differences 15, 95% confidence interval 8.5 to 20.6). Significantly more patients in the specific exercise group reported a successful outcome (defined as a large improvement or recovered) in the patients’ global impression of change because of treatment (69% (35/51) v 24% (11/46); odds ratio 7.6, 3.1 to 18.9; P<0.001). A significantly lower proportion of patients in the specific exercise group chose to undergo surgery (20% (10/51) v 63% (29/46); 7.7, 3.1 to 19.4; P<0.001).

HARMS None reported.

BIAS, CONFOUNDING, AND OTHER REASONS FOR CAUTION Only one physiotherapist was involved in all the treatment and was not blinded to group assignment, which might have influenced the results. There was, however, a strict standardised study protocol and a blinded assessor.

GENERALISABILITY TO OTHER POPULATIONS All patients were recruited from the surgical waiting list of one orthopaedic clinic. This might affect the external validity of the results, but, as patients were referred from all primary care units in the region of Östergötland (population 427 106) we think that the included patients are representative of the studied population. The severity of symptoms and duration might be more heterogeneous in patients with subacromial impingement...
syndrome attending primary care than in the studied population. Therefore this positive effect of treatment needs to be confirmed in a primary care setting, with longer follow-up, before further implementation of this specific exercise strategy.

**STUDY FUNDING/POTENTIAL COMPETING INTERESTS**
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. TH is funded in part by the research council in the south east of Sweden (FORSS).

**TRIAL REGISTRATION NUMBER**
Clinical trials NCT01037673

Theresa Holmgren,1 Hanna Björnsson Hallgren,2 Birgitta Öberg,1 Lars Adolfsson,2 Kajsa Johansson1

1Department of Medical and Health Sciences, Division of Physiotherapy, Linköping University, SE-581 83, Linköping, Sweden
2Department of Orthopaedics, University Hospital, SE-581 85, Linköping

**Correspondence to:** T Holmgren; theresa.holmgren@liu.se

**To cite** Holmgren T, Hallgren HB, Öberg B, et al. Br J Sports Med 2014;48:1456–1457.

*Br J Sports Med* 2014;48:1456–1457. doi:10.1136/bjsports-2014-e787rep