

EVIDENCE-BASED QUICKNOTES

Shoulder impingement - update

What type of exercise program can improve pain and function in individuals with shoulder impingement syndrome?

To answer this question, we performed a comprehensive search of the PubMed database (June 2012) for clinical trials that addressed this specific research question and were published since 2009.

The best available evidence from our search consisted of 6 randomized trials (1-6). Two studies utilized a control group (1,4). Among 97 patients, Holmgren et al evaluated the effect of a corticosteroid injection followed by either specific or control exercises (1). Both groups showed improvements in pain and function after 12 wks, but the specific exercises resulted in significantly greater improvements with fewer patients choosing to undergo surgery (1). Bennell et al compared 10 wks of physical therapy followed by 12 wks of home exercise to sham ultrasound among 121 patients, and though both groups showed significant improvements in pain and function at 11 wks, outcomes at 22 wks suggested a benefit of treatment (4). Maenhout et al evaluated the effect of adding heavy-

load eccentrics to traditional shoulder exercise among 61 patients, and both treatments resulted in improvements by 6 and 12 wks in shoulder pain, function and strength with limited outcomes in favor of eccentric training (2). Baskurt et al evaluated the addition of scapular stabilization exercise to traditional supervised exercise among 40 patients, and found improvements in multiple outcomes regardless of treatment after 6 wks, with few variables showing a greater benefit to stabilization exercise (3). Crawshaw et al randomized 232 patients to receive a steroid injection followed by physical therapy or physical therapy only, and found both treatments improved pain and function at 6, 12, and 24 wks, with injection followed by therapy providing a significantly greater benefit only at early time points (<6 wk) (5). Østerås et al evaluated high or low dosages of supervised progressive resistance exercises in 61 patients, and though both significantly improved pain and function by 3 mos, there was a significant benefit to high dosage that was sustained at 1 yr follow-up (6).

Based on this review, it can be concluded that 6-12 wks of therapy and/or exercise is effective in improving pain and function for patients with chronic subacromial impingement.

Check with the provider of this newsletter to learn more about exercises appropriate for this condition.

1. Holmgren T, Björnsson Hallgren H, Öberg B, Adolfsson L, Johansson K. Effect of specific exercise strategy on need for surgery in patients with subacromial impingement syndrome: randomised controlled study. *BMJ*. 2012 Feb 20;344:e787. doi: 10.1136/bmj.e787. PubMed PMID: 22349588; PubMed Central PMCID: PMC3282676.
2. Maenhout AG, Mahieu NN, De Muynck M, De Wilde LF, Cools AM. Does adding heavy load eccentric training to rehabilitation of patients with unilateral subacromial impingement result in better outcome? A randomized, clinical trial. *Knee Surg Sports Traumatol Arthrosc*. 2012 May 12. [Epub ahead of print] PubMed PMID: 22581193.
3. Başkurt Z, Başkurt F, Gelecek N, Özkan MH. The effectiveness of scapular stabilization exercise in the patients with subacromial impingement syndrome. *J Back Musculoskelet Rehabil*. 2011;24(3):173-9. PubMed PMID: 21849731.
4. Bennell K, Wee E, Coburn S, Green S, Harris A, Staples M, Forbes A, Buchbinder R. Efficacy of standardised manual therapy and home exercise programme for chronic rotator cuff disease: randomised placebo controlled trial. *BMJ*. 2010 Jun 8;340:c2756. doi: 10.1136/bmj.c2756. PubMed PMID: 20530557; PubMed Central PMCID: PMC2882554.
5. Crawshaw DP, Helliwell PS, Hensor EM, Hay EM, Aldous SJ, Conaghan PG. Exercise therapy after corticosteroid injection for moderate to severe shoulder pain: large pragmatic randomised trial. *BMJ*. 2010 Jun 28;340:c3037. doi: 10.1136/bmj.c3037. PubMed PMID: 20584793; PubMed Central PMCID: PMC2893301.
6. Østerås H, Torstensen TA, Østerås B. High-dosage medical exercise therapy in patients with long-term subacromial shoulder pain: a randomized controlled trial. *Physiother Res Int*. 2010 Dec;15(4):232-42. doi: 10.1002/pri.468. PubMed PMID: 21110409.