

Shoulder Pain

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Latest Research – Management of RC Tendinopathy

This review is based on the work of Dr Chris Littlewood, UK clinician & researcher. It compares 3 popular treatments for shoulder pain – physiotherapy-supervised exercise, corticosteroid injection, and surgery. There is now extensive research showing that exercise is the most appropriate intervention for shoulder pain due to rotator cuff (RC) tendinopathy (or ‘subacromial impingement syndrome’). Several years of research into the management of common tendinopathies (Achilles, patellar, forearm extensor, and rotator cuff) has consistently shown that exercise is the gold-standard treatment (Magnusson et al 2010; Scott et al 2013).

1. Exercise

An extensive review of the literature concluded that exercise was the most effective intervention available for RC tendinopathy. (Littlewood et al 2013). Even in the longer-term, exercise alone was more effective than surgery and multi-modal physiotherapy. The age of the patient, the duration of symptoms, and the intensity of symptoms did not appear to affect the response to exercise (Littlewood et al 2015).

Specific scapular stabilization exercises have also shown a statistically significant benefit in a randomized controlled trial (Struyf, F et al 2013). However in this study patients were only followed up for 3 months.

Multi-modal Physiotherapy

While exercise has been shown to be effective, other interventions have not. Manual therapy, acupuncture, ultrasound, laser, and shortwave modalities were not

found to be effective treatments (Littlewood et al 2013). The same study found that extra-corporeal shock wave therapy was also ineffective for rotator cuff tendinopathy.

2. Corticosteroid Injection (CSI)

Studies have shown CSI to be no better than exercise, and to be marginally better than placebo in the short-term, and worse in the long-term:

- A randomized controlled trial (RCT) compared injection combined with exercise to exercise alone in 232 subjects with moderate to severe shoulder pain. Both were similarly effective at 12 weeks (Crawshaw et al 2010).
- CSI compared to placebo showed a small but non-significant difference at 12 weeks (Littlewood et al 2013).
- In the long-term (beyond 12 weeks), placebo injection was found to be better than CSI (Penning et al 2012).
- While injection compared to physiotherapy showed similar clinical outcomes at 1 year, the injection group had greater subsequent health care utilisation:
 - further primary care visits (60% vs 37%)
 - further CSI injections (38% vs 20%)
 - 19% vs 9% required physiotherapy

Perhaps of more concern, a recent paper questioned whether CSI actually causes damage to the tendon, after it was shown that local CSI reduces cell proliferation and collagen synthesis (Dean et al 2014). The authors concluded that CSI is toxic to the

RC tendons. In support of this notion, previous studies in other tendon pathologies have shown worse outcomes compared to placebo at 12 months (Coombes et al 2013).

3. Surgery

A number of studies have compared surgery to exercise or other conservative management approaches. In the longer term, surgery does not give superior results.

- An review of RCTs involving 347 subjects concluded that there was no significant difference between surgery & conservative management at 12 months (Saltychev 2015).
- A RCT with a 5 year follow-up compared arthroscopic subacromial decompression to a structured exercise program. As there was no significant difference between the two groups the authors concluded that structured exercise seems to be treatment of choice for 'subacromial impingement' (Ketola et al 2013).
- In a RCT, 102 subjects listed for surgery were randomly allocated to specific strengthening exercises for the rotator cuff, or a control group. Only 20% of the exercise group opted for surgery, compared to 63% of the control group (Holmgren et al 2012).

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