



School of Health & Social Care

The effectiveness of eccentric exercises in adults with symptomatic upper extremity tendinopathy, focussing on lateral epicondyle and rotator cuff tendinopathy: a systematic review on pain and function

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ABSTRACT

Chronic complaints of tendons are very common problems of the musculoskeletal system with a high prevalence. Lateral elbow tendinopathy (LET) is supposed to be the most prevalent upper-extremity musculoskeletal disorder, and tendinopathy of the rotator cuff (RC) is seen as the most common cause of shoulder pain. Despite the high frequency of tendinopathies, several questions remain concerning the nomenclature, the pathogenic mechanisms and the evidence of treatment regimes in general. Beside numerous treatment options, exercise therapy involving mechanical load of the painful tendon with the use of isolated eccentric exercises (EE) has become a popular conservative treatment option in patients with chronic tendinopathies, showing to provide good clinical results improving pain and function.

The objective of this current SR was to provide a comprehensive review of the current evidence on EE as treatment option for tendinopathies of the lateral elbow and RC. Six databases (EMBASE / CENTRAL, MEDLINE, CINAHL, SPORTDiscus, PEDro and CCMed) were searched for suitable RCTs up till December 2013. This was complemented by an additional search of grey literature via SIGLE. The search was limited to trials published in English, German or Dutch. 4 RCTs met all inclusion criteria and were finally included in this SR investigating a total of 132 participants clinically diagnosed with LET, and a total of 158 participants suffering from RC tendinopathy. The risk of bias of the included studies was assessed and the data synthesised according to the Cochrane methodology. One study was considered to be of moderate quality, three were of low quality.

All trials used EE in conjunction with other conservative treatments, including warming-up, concentric-eccentric exercises, concentric exercises, stretching or bracing. There was conflicting evidence for the use of EE as a treatment option in patients with LET to improve pain and function, but the results do not implicate that EE are superior to other exercises including concentric exercises or stretching in combination with bracing.

For EE in patients with RC tendinopathy, there was limited evidence for improvement of strength up to 90° abduction and quality of life and a decrease of pain at night, but the results are based only on one RCT with at least debatable application of the EE. In how far the supplemental treatments to EE might have influenced the outcomes could not be evaluated. It can be carefully stated that EE as part of a multimodal treatment procedure seem to be reasonable, but further evidence must be provided.

This SR was limited by the small number of included RCTs demonstrating the need for additional research with robust methodology to gain evidence to establish EE as a treatment intervention in patients with LET or RC tendinopathy.