

**Specific Question:**

In adults with chronic lateral epicondylitis (tennis elbow) are eccentric exercises more effective in reducing pain and improving function than concentric exercises?

**Clinical bottom line**

There is evidence from one randomised controlled trial that eccentric exercises are as effective as concentric exercises in reducing pain and improving function for patients with chronic lateral epicondylitis.

**Why is this important?**

Lateral epicondylitis (tennis elbow) is a common disorder with an incidence of between 1-3% (Shiri et al 2011). It tends to affect those in the working age population 35-45 years of age. The primary cause is primarily overuse.

Patients often present to physiotherapy when the condition is chronic, i.e. symptoms lasting more than 3 months. Treatment may include splints, occupational advice and exercises. Eccentric exercises (exercise using the elongation phase of the muscle activity by lowering weights) are often used to treat this condition.

**Inclusion Criteria**

Adults with chronic lateral elbow pain

**Search ( e.g. 2005-2015)**

Musculoskeletal Research Facilitation Group (Cat Group)  
 Critically appraised topic and clinical bottom line  
 Date October 2015:

**Type of Study**

	Description	Search terms
<b>Population and Setting</b>	Adults	Adults, lateral epicondylitis, tennis elbow, lateral elbow pain
<b>Intervention or Exposure (ie what is being tested)</b>	Eccentric exercises	Eccentric exercise
<b>Comparison, if any</b>	Concentric exercises	Concentric exercises Usual care Strengthening exercise Home exercise programme
<b>Outcomes of interest</b>	Pain Function	Pain Function
<b>Types of studies</b>	SR, rcts	

**Routine Databases Searched**

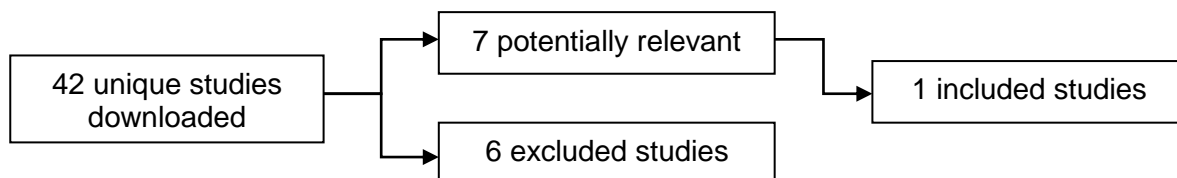
Clinical Knowledge Summaries, PEDro, BMJ Updates, Clinical Evidence, TRIP, Database, NICE, HTA, Bandolier, The Cochrane Library, Medline, Cinahl, Embase, PsycInfo, Professional websites. Joanna Briggs Institute, Web of science, Sports discuss and PubMed

**Date of search**

Undertaken June 2015

Searched 2015-2005

**Results**



CAT Lead: Liz Hallam & Kay Stevenson  
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First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Peterson et al 2015 RCT	Patients with tennis elbow over 3 months  Age 20-75  Based in Sweden	120 patient randomised into 2 groups Eccentric versus concentric exercises	Both groups improved in terms of pain during maximum voluntary contraction and maximum muscle elongation and function.  No difference between the groups at 12 months follow up  No difference between the groups on function and quality of life	Primary outcome was pain reduction measured on VAS during 2 test max voluntary contraction and max muscle elongation. Doesn't say which was the primary end point  Follow up at 1,2,3,6,and 12 months  Data collected by unblinded assessor  Used ITT Didn't justify power calculation  More women in eccentric exercise group  No P values or CI Raw data not presented  Minimal loss to follow up  Although the study acclaimed that those in the eccentric exercise group improved more quickly, the study was not powered to detect changes in recovery time between the two groups

**Summary**

This research gives us a comparison between two common exercises approaches used for chronic lateral epicondylitis. Both eccentric and concentric exercises improve pain and function. Results on speed of recovery should be viewed with caution as the study was not powered to explore this. Further research is needed to determine if eccentric exercises promote earlier recovery.

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### Implications for Practice/research

Physiotherapist could use eccentric or concentric exercises as part of their treatment approach for patients with lateral epicondylitis. The research gives a practical method of providing a standardised weight and advice to increase the weight over time for both eccentric and concentric exercises. The article also gives clear details of the interventions in terms of numbers of repetitions per day so it could be easily reproduced by clinicians- see fig 1



Fig 1 Photograph showing exercise set-up with the patient seated in an armchair with forearm support, holding the dumbbell (a plastic container with a specified amount of water) in the affected arm, and performing exercise by lifting and lowering the container by extension or flexion of the wrist. (Peterson et al 2014)

### What would you tweet? (140 characters)

Eccentric exercises provide quicker pain relief & improved function than concentric exercises for chronic tennis elbow

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**References**

Peterson M Butler S Eriksonm Svardsudd K A randomised controlled trial of eccentric versus concentric graded exercise in chronic tennis elbow 2015 Clinical Rehabilitation 28(9) 862-872

Shiri r and Viikari-Juntura E Lateral and medial epicondylitis; role of occupational factors Best Practice Research Clin Rheumatology 2011:25:43-57

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