

In the adult population, is eccentric or concentric exercise more effective for the return of function in Subacute or chronic Achilles tendonopathies

Clinical bottom line

Systematic review evidence is of poor quality, but suggests that eccentric exercise may be of benefit to this group of patients

One small RCT suggests that eccentric loading was less effective for this group of patients than a combination of eccentric loading and shock wave therapy.

Population: Adults with subacute / chronic Achilles tendonopathy

Intervention: Concentric and/or eccentric exercises

Comparison: Usual care, advice, surgery, injection therapy

Outcome: Pain, disability, recurrence rate, function, return to normal activities.

Excluded: children, previous surgical intervention

Data bases Searched: Cochrane, Pedro, NHS Library for Health, medline, Cinahl, Embase, PsycInfo, Clinical Evidence, Bandolier, NELH, Professional websites, Guidelines, NICE

Search for the past 10 years i.e. 2006- 2010

Key words searched: Achilles tendon / tendonopathy, eccentric, concentric exercise, tendinitis, tendinosis, non insertional, insertional

Available Evidence

Database (Specific to our CAT)	Number of relevant abstracts
AMED	2
CINAHL	60
Embase	36
Medline	36
Total	134

Results:

Abstracts were reviewed and excluded if they didn't answer the clinical question, were not rct or systematic reviews.

2 systematic reviews (*Kingma et al 2007 and Magnussen et al 2009*, and one subsequent rct (2009

Rompe et al 2009

68 patients with chronic non insertional Achilles tendonitis for over 6 months, 2 groups

Group 1 eccentric loading

Group 2 eccentric loading plus shock wave therapy

At 4 month follow up a combined treatment of eccentric loading and shock wave therapy was more beneficial than eccentric loading alone

Concealed allocation, randomization described, patient not blinded at any point in study.

Numbers in groups at 4 month follow up smaller than sample size calculation recommended. At baseline older more frequently injection patients- in group 2 raised question of adequate randomization process. Raw data not presented. Study too small with too short a follow up evaluations

Magnussen et al 2009

Systematic review up to 2007. 707 abstracts, 596 excluded, full text on 111. A further 81 were excluded
16 trials met inclusion criteria
Change in pain score was primary outcome measure
Included rcts, midsubstance TA problems, clear exclusions, good search strategy but English only

Little consistency between studies, statistical methods used is not clear, no funnel plot, appears to be a narrative review. Poor quality systematic review

Eccentric exercises are:

- equal to extracorporeal shock wave therapy (1 trial)
- Superior to wait and see (2 trials)
- Superior to traditional concentric exercises (2 out of 3 trials)
- Superior to night splints (1 trial)

Kingma et al 2007

Searched database 1966-2005, included rcts, measured quality of the trails. Out of 47 primary studies, only 9 were considered suitable. Only 1 of these trails was considered of suitable quality (Ross 2004). Ross 44 participants, 12 weeks of intervention.

Implications for practice:

Summary:

References:

Kingma JJ de Knikker Wittink HM Takken T 2007 Eccentric overloading training in patients with chronic Achilles tendinopathy: a systematic review
Br J Sports Med

Magnussen RA Dunn WR Thomson AB 2009 Non operative treatment of midportion Achilles tendinopathy: a systematic review
Clinical journal of Sports Medicine 19/1 54-64

Rompe JD Furla J mafuli N 2009 Eccentric loading versus concentric loading plus shock wave treatment for midportion Achilles tendinopathy: a randomized controlled trial
American Journal of Sports Medicine March 2009 37/3 (463-470)

Further research question