

# CAT

**Eccentric calf training is superior to concentric training when dealing with patients suffering from chronic Achilles tendinosis**

## Clinical Bottom Line(s) (level 1b)

**1. Patient satisfaction and VAS scores were significantly better for patients treated with a twelve-week eccentric loading program when compared to a concentric program.**

### Citations(s):

Mafi n, Lorentzon R, Alfredson H. Superior short-term results with eccentric calf muscle training compared to concentric training in a randomized prospective multicenter study on patients with chronic Achilles tendinosis. Knee Surg, Sports Traumatol, Arthrosc 2001; 9: 42-47

### Clinical question.

Is eccentric calf muscle training better than concentric training for decreasing pain and increasing function in people suffering from Achilles tendinosis?

### The study:

Randomized prospective controlled study comparing two treatment groups.

### The study patients:

44 subjects (24 male and 20 female) mean age 48 years with a mean duration of symptoms 21 months. Received previous treatments that may of included NSAIDs, rest, cortisone injection, ordinary training program.

### Group(s):

#### Eccentric training:

(N = 22; 22 analyzed at 12 weeks) Home exercise program was: performed twice daily, 7 days/week, for 12 weeks. Heel raises were performed with knee straight and knee bent (3 x15 repetitions) Beginning with body weight progressing to wearing a weighted backpack. Pain with exercise was expected.

#### Concentric Training

(N = 22; 22 analyzed at 12 weeks) Home exercise program was: performed twice daily, 7 days/week, for 12 weeks, Included heel raises, step-ups, and rope skipping and side jumps. Exercises were performed with the knee straight and the knee bent Exercise difficulty was increased over the twelve-week period. Pain with exercise was expected.

Outcomes	Time to outcomes	Eccentric	Concentric	P-value
Patient satisfaction	12wks	82% (18/22)	36% (8/22)	P<0.002
VAS- Satisfied Unsatisfied	12wks	69 to 12 60 to 44	63 to 9 63 to 60	P<0.05

### Comments:

1. Blindness of researchers was not addressed in the study.
2. There was not a control group for comparison.
3. Exercises between the groups were not the same.
4. No method for measuring compliance with the exercise program was used

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