

AT521

Annotated Bibliography Knee

Jonsson P, Alfredson H. Superior results with eccentric compared to concentric quadriceps training in patients with jumper's knee: a prospective randomised study. *Br J Sports Med.* 2005;39:847-50.

P-19 patella tendons from 15 athletes with jumper's knee (patellar tendinosis)  
I-3x15 eccentric quadriceps exercises on decline board, twice daily for 12 weeks  
C3x15 concentric quadriceps exercises on decline board, twice daily for 12 weeks  
O-9/10 eccentric exercise patella tendons and 7/8 athletes were satisfied with results, 9/9 concentric exercise patella tendons and 7/7 athletes were unsatisfied with results

The question of the article is what is the best way to strengthen the quadriceps in patients with patella tendinitis, concentric or eccentric? The purpose of the article was to find what was a better exercise for treating patella tendinitis; concentric or eccentric quadriceps strengthening. The problem addressed in the article was the difficulty in treating patella tendinitis with quadriceps strengthening. 15 athletes with 19 patella tendons with tendonitis were split into 2 groups, a concentric and eccentric group. 8 athletes with 10 patella tendons were in the eccentric group and they performed eccentric quadriceps strengthening on a decline board 3 sets of 15 repetitions, twice daily, 7 days a week for 12 weeks adding weight when the exercise no longer was painful. 7 athletes with 9 patella tendons were in the concentric group and they performed concentric quadriceps strengthening on a decline board 3 sets of 15 repetitions, twice daily, 7 days a week for 12 weeks, adding weight when the exercise no longer was painful. The group that the athletes and tendons were placed in was random. Each athlete was assessed with the Visual Analog Scale (VAS) and Victoria Institute of Sports Assessment (VISA) scores before and after the 12 weeks and patient satisfaction was taken as well. The results found that in the eccentric group 9/10 tendons were satisfied with their outcomes, their VAS decreased from 73-23 and VISA increased from 41-83. In the concentric group 9/9 tendons were dissatisfied with their outcomes and no significant decrease in VAS (74-68) or VISA(41-37). In fact 3 patients and 4 tendons dropped out of the concentric group at 6 weeks because of the knee pain. At follow up 32 months later eccentric patients were all satisfied, while all concentric patients had been treated with surgery or injection.

The article was considered a therapeutic article. Using the AAOS levels of evidence grading system this article is a level 2 because there were 3 drop outs, but a significant difference was found in the eccentric group and patients were randomized into their groups.

The bottom line is that in treating patella tendinitis the quadriceps needs to be strengthened. Both concentric and eccentric quadriceps exercises are usually painful, but only eccentric should be used as in 90% of the cases patients were satisfied with their outcomes. Athletic trainers should always choose eccentric quadriceps strengthening for patients with jumper's knee because concentric strengthening can lead to further treatments such as surgery and injections. For the patient education they should be shown the correct technique to the exercise, so they can do it on their own at home. Also, that even though the exercise may be painful, it will aid in the healing of their knee and can reduce the chance of needing further treatment such as surgery.