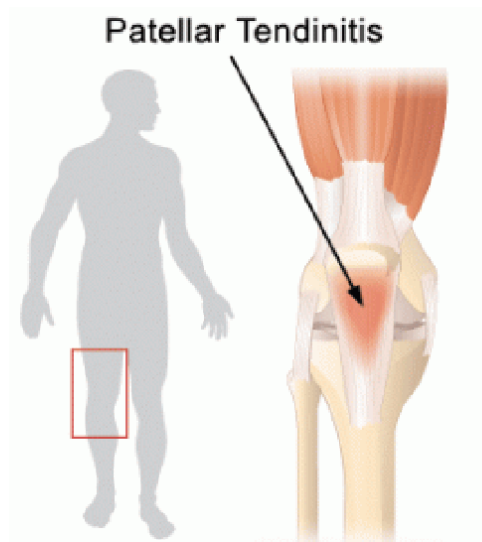


JERSEY CENTRAL

PHYSICAL THERAPY FITNESS

Physical Therapy and the Painful Knee

Chronic overuse tendon injuries often result in subsequent structural changes such as tendon thickening, collagen and matrix disruption, and nerve and vessel growth. When it comes to late stage tendinopathy, we know that the tendon needs to be remodeled through increased cellular activity, increased collagen production, and extracellular matrix re-organization. Eccentric exercise has become the accepted intervention for degenerative tendinopathy. In the case of patellar tendinopathy, the decline board has come into the spotlight as the preferential mode of treatment. The literature suggests that eccentric squats should be performed on a 25 degree decline board, for 3 sets of 15 repetitions, 2 times a day. The eccentric phase should be performed on the symptomatic leg, and should be slow and slightly uncomfortable. When pain subsides, weight should be added. Several studies showed an improvement in pain level at the conclusion of treatment and at follow up. Heavy resistance training has also been suggested to treat this pathology.



Kongsgaard et al. performed a study that compared heavy, slow resistance training, to eccentrics and corticosteroid injections. The heavy resistance training consisted of 4 sets of squats, hack squats, and leg press exercise 3 times a week, for 12 weeks. The researchers found that not only did pain improve at follow-up with heavy resistance training, but that tendon structures and form changed; which did not occur with the other two interventions. The results of the study showed that tendon fibril mean area decreased and tendon fibril density increased after heavy slow resistance training. The increased tendon load throughout the protocol could be one possibility. They suggest that the tendon changes may also be due to the infrequency of training; the tendon has time to repair between workouts.

Our physical therapists play a critical role in the treatment of frozen shoulder using a dynamic program of joint mobilization, exercises, modalities and home exercises.

PLEASE CONTACT FOR MORE INFORMATION:

Dr Alex Ivashenko PT DPT OCS
Board Certified Orthopedic Physical Therapist
Jersey Central Physical Therapy
2147 Route 27
Edison NJ 08817
732-777-9733

References:

Visnes H, Bahr R. The evolution of eccentric training as treatment for patellar tendinopathy (jumper's knee): a critical review of exercise programmes. *Br J Sports Med.* 2007; 41: 217-223.

Kongsgaard M, Kovanen V, Aagaard P. et al. Corticosteroid injections, eccentric decline squat training and heavy slow resistance training in patellar tendinopathy. *Scand J Med Sci Sports.* 2009; 19: 790-802.

Kongsgaard M, Qvortrup K, Larsen J, et al. Fibril morphology and tendon mechanical properties in patellar tendinopathy: effects of heavy slow resistance training. *Am J Sports Med.* 2010; 38: 749-756.