Patellar tendonitis (jumper’s knee)

Description
Patellar tendonitis is characterized by inflammation and pain at the patellar tendon (the tendon below the kneecap). This structure is the tendon attachment of the quadriceps (thigh) muscles to the leg. This structure is important in straightening the knee or slowing the knee during bending or squatting. This is usually a grade 1 or 2 strain of the tendon.

A grade 1 strain is a mild strain. There is a slight pull without obvious tearing (it is microscopic tendon tearing). There is no loss of strength, and the tendon is the correct length.

A grade 2 strain is a moderate strain. There is tearing of tendon fibers within the substance of the tendon or at the bone-tendon junction. The length of the tendon is usually increased, and there is decreased strength.

A grade 3 strain is a complete rupture of the tendon.

Common signs and symptoms
- Pain, tenderness, swelling, warmth or redness over the patellar tendon, most often at the lower pole of the patella (kneecap) or at the tibial tubercle (bump on the upper part of the lower leg)
- Pain and loss of strength (occasionally) with forcefully straightening the knee (especially when jumping or when rising from a seated or squatting position) or bending the knee completely (squatting or kneeling)
- Crepitation (a crackling sound) when the tendon is moved or touched

Causes
- Strain from a sudden increase in amount or intensity of activity or overuse of the quadriceps muscles and patellar tendon
- Direct blow or injury to the knee or patellar tendon

Risk of further injury
- Sports that require sudden explosive quadriceps contraction (jumping, quick starts, or kicking)
- Running sports, especially running down hills
- Poor physical conditioning (strength and flexibility, such as with weak quadriceps or tight hamstrings)
- Flat feet
Initial treatment
Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises of the quadriceps and hamstring muscles, and modification of the activity that initially caused the problem. These all can be carried out at home, although referral to a physical therapist or athletic trainer for further evaluation and treatment may be helpful. Rarely, a leg cast may be recommended to 10 to 14 days to immobilize the tendon and allow the inflammation to settle down.

Uncommonly, crutches may be needed for the first few days to weeks until there is good control of the quadriceps muscles and no limp exists. An arch support (orthotic) or a patellar tendon brace/strap may be prescribed to reduce stress to the tendon. Surgery to remove the inflamed tendon lining or degenerated tendon tissue is rarely necessary and is only considered after at least 6 months of adequate rehabilitation and rest.

Pain control
Nonsteroidal anti-inflammatory medications such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.

Stronger pain relievers may be prescribed as necessary by your physician. Use only as directed.

Swelling control
Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage. Use Ice for the first 72 hours after the initial injury.

Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak. Heat should not be used if inflammation (swelling) is still present.

Lower body stretching

All stretches should be performed before and after any activity. Do three sets of each stretch and hold each stretch for 25-30 seconds.

Hamstring Stretching

Straight Leg/Sitting
- Sit on a table with just one leg on the table and the other off the table.
- Make sure your back remains flat and not arched forward.
- Lean your whole upper trunk forward until you feel a stretch and hold that position.
Straight leg/lying
- While lying on your back pull your thigh up to make your hip into a 90 degree angle.
- Maintain your grip around your knee and straighten out your leg until you feel a stretch and hold that position.

Bent knee
- While lying on your back pull your knee to your shoulder until you feel a stretch and hold that position.
Quad stretching

Side lying
  • While lying on your side pull knee back by holding you’re ankle until you feel a stretch and hold that position.

Standing
  • While standing place your knee on a chair or stool and either lean forward or grab ankle to further pull knee into flexion until you feel a stretch and hold that position.
Groin stretching

- Sit with knees flexed and feet together.
- Slowly lower your knees
- While holding your ankles until you feel a stretch and hold that position.
Achilles

- Stand with involved leg back.
- Keep heel on floor and gently lean forward until feel stretch and hold that position.
- Stretch should be performed with knee straight, then with knee bent.