

PATELLAR TENDINITIS (Jumper's Knee)



■ ■ ■ Description

Patellar tendinitis 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 Increases With

- 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

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
 - Cardiovascular fitness
 - Thigh and knee strength
 - Flexibility and endurance

- To help prevent recurrence, taping, protective strapping or bracing, or an adhesive bandage may be needed for several weeks after healing is complete.
- Wear arch supports (orthotics).

■ ■ ■ Expected Outcome

This condition is usually curable within 6 weeks if treated appropriately with conservative treatment and resting of the affected area.

■ ■ ■ Possible Complications

- Prolonged healing time if not appropriately treated or if not given adequate time to heal.
- Recurrence of symptoms if activity is resumed too soon, with overuse, with a direct blow, or when using poor technique
- Untreated, tendon rupture requiring surgery

■ ■ ■ General Treatment Considerations

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 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.

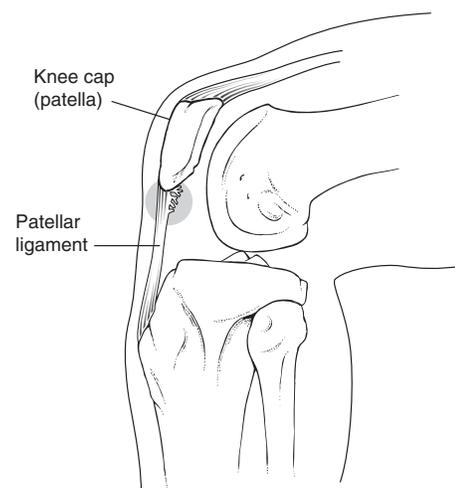


Figure 1

■ ■ ■ Medication

- 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.
- Pain relievers may be prescribed by your physician. Use only as directed and only as much as you need.
- Cortisone injections are not given. Cortisone injections may weaken tendons, so it is better to give the condition more time to heal than to use them.

■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation. 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.

- 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.

■ ■ ■ Notify Our Office If

- Symptoms get worse or do not improve in 2 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

EXERCISES

> RANGE OF MOTION AND STRETCHING EXERCISES • Patellar Tendinitis (Jumper's Knee)

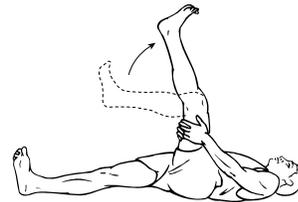
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



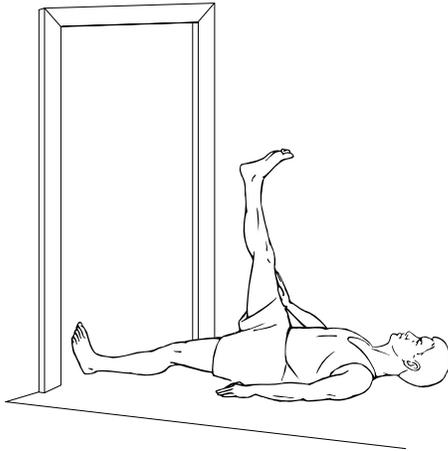
FLEXIBILITY • Adductors, Lunge

1. Spread your legs wide while standing. Then assume a partial "squat" position.
2. "Lunge/Lean" away from the side you want to stretch, shifting your weight toward the bent leg.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



FLEXIBILITY • Hamstrings

1. Lie on your back with your leg bent and both hands holding on to it behind the thigh as shown.
2. Your hip should be bent to 90 degrees and the thigh pointing straight at the ceiling.
3. Straighten out your knee as far as you can. Keep your thigh pointing straight toward the ceiling.
4. Keep the other leg flat on the floor.
5. Hold this position for _____ seconds.
6. Repeat exercise _____ times, _____ times per day.



FLEXIBILITY • Hamstrings, Doorway

1. Lie on your back near the edge of a doorway as shown.
2. Place the leg your are stretching up the wall keeping your knee straight.
3. Your buttock should be as close to the wall as possible and the other leg should be kept flat on the floor.
4. You should feel a stretch in the back of your thigh.
5. Hold this position for ____ seconds.
6. Repeat exercise ____ times, ____ times per day.



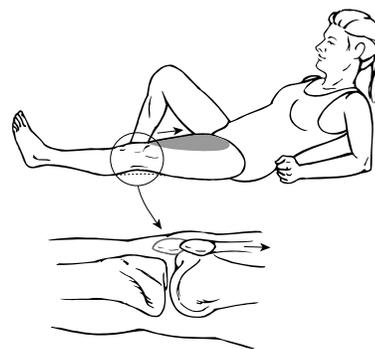
FLEXIBILITY • Hamstrings, Ballet

1. Stand and prop the leg you are stretching on a chair, table, or other stable object.
2. Place both hands on the outside of the leg you are stretching.
3. Make sure that your hips/pelvis are also facing the leg you are stretching.
4. Slide your hands down the outside of your leg.
5. Lead with your chest/breast bone. Keep your chest upright and back straight. Do not hunch over at the shoulders. Keep your toes pointing up.
6. You should feel a stretch in the back of your thigh.
7. Hold this position for ____ seconds.
8. Repeat exercise ____ times, ____ times per day.

> STRENGTHENING EXERCISES • Patellar Tendinitis (Jumper's Knee)

These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.



STRENGTH • Quadriceps, Isometrics

1. Lie flat or sit with your leg straight.
2. Tighten the muscle in the front of your thigh as much as you can, pushing the back of your knee flat against the floor. This will pull your kneecap up your thigh, toward your hip.
3. Hold the muscle tight for ____ seconds.
4. Repeat this exercise ____ times, ____ times per day.

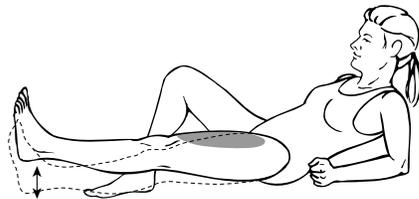


STRENGTH • Quadriceps, Short Arcs

1. Lie flat or sit with your leg straight.
2. Place a _____ inch roll under your knee, allowing it to bend.
3. Tighten the muscle in the front of your knee as much as you can, and lift your heel off the floor.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day.

Additional Weights: OK TO USE DO NOT USE!!!

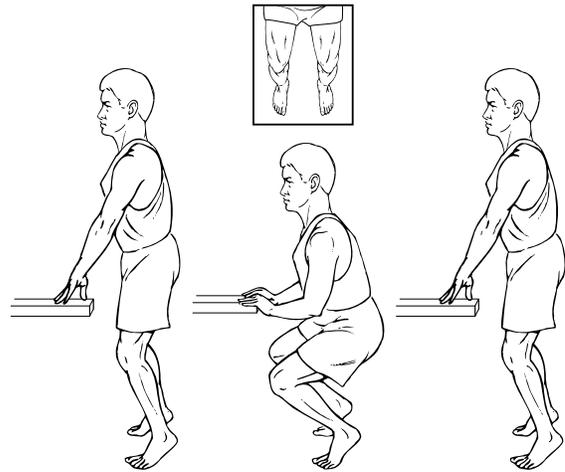
If okay'd by your physician, physical therapist, or athletic trainer, a _____ pound weight may be placed around your ankle for additional weight.



STRENGTH • Quadriceps, 7 Count

The quality of the muscle contraction in this exercise is what counts the most, not just the ability to lift your leg!

1. Tighten the muscle in front of your thigh as much as you can, pushing the back of your knee flat against the floor.
2. Tighten this muscle **harder**.
3. Lift your leg/heel 4 to 6 inches off the floor.
4. Tighten this muscle **harder again**.
5. Lower your leg/heel back to the floor. Keep the muscle in front of your thigh as tight as possible.
6. Tighten this muscle **harder again**.
7. Relax.
8. Repeat exercise _____ times, _____ times per day.



STRENGTH • Quads

1. Stand with your feet shoulder-width apart and place equal weight on both legs.
2. Keep your kneecaps in line with your toes.
3. Slowly bend both knees, keeping **equal weight** on both legs, and return to a standing position.
4. **Do not bend your knees more than 90 degrees.**
5. You may use the edge of a table or counter for balance if needed.
6. Repeat exercise _____ times, _____ times per day.



STRENGTH • Quads

1. Stand on the edge of a step/stair with your kneecap in line with your second toe.
2. Slowly step down and touch the heel of your opposite leg on the stair below you. Return to the starting position.
3. Do not go into a painful range. Stop short of the step if necessary to avoid any pain.
4. Use your stair rails for balance as needed.
5. Repeat exercise _____ times, _____ times per day.

Notes:

(Up to 4400 characters only)

Notes and suggestions