

POSTERIOR TIBIAL TENDON TENDINITIS



■ ■ ■ Description

Posterior tibial tendon tendinitis is characterized by inflammation and pain at the posterior tibial tendon (back of the inner ankle). This structure is the tendon attachment of the muscles of the leg to the inner foot and is important in standing on your toes, in the pushing-off phase of running or jumping, and in turning your foot inward. 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 fibers within the substance of the tendon or where the tendon meets the bone or muscle. The length of the muscle-tendon-bone unit is increased, and there is usually 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 back of the inner ankle at the posterior tibial tendon or the inner part of the mid-foot
- Pain with ankle motion (especially when pushing off or pushing down with the front of the foot) or when standing on the ball of the foot
- Crepitation (a crackling sound) when the tendon is moved or touched

■ ■ ■ Causes

- Usually a degenerative process (occurs with aging) or from overuse of the lower leg muscles
- Strain from sudden increase in amount or intensity of activity, from a direct injury, or from injury to the lower leg, foot or ankle
- A return to activity following a previous injury with incomplete rehabilitation

■ ■ ■ Risk Increases With

- Sports that require sudden repetitive pushing off of the foot (jumping and quick starts) or kicking and running sports, especially running down hills and long distances
- Poor physical conditioning (strength and flexibility)
- Flat feet
- Previous injury to the foot, ankle, or leg

■ ■ ■ 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:
 - Ankle and leg flexibility
 - Muscle strength and endurance
- Use proper technique.

- Complete rehabilitation from a previous injury.
- Wear arch supports.

■ ■ ■ Expected Outcome

- This condition is usually curable within 6 weeks if treated appropriately with conservative treatment and resting of the affected area.
- Recovery is usually quicker if the inflammation is due to a direct blow, as compared with overuse or sudden strain.

■ ■ ■ Possible Complications

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

■ ■ ■ General Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises, and modification of the activity that initially caused the. 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. A cast or walking boot may be recommended to immobilize the tendon and allow the inflammation to settle

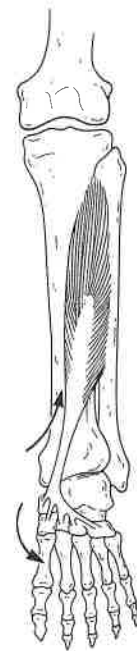


Figure 1

From Andrews JR, Harrelson GL, Wilk RE: *Physical Rehabilitation of the Injured Athlete*, 2nd ed. Philadelphia, WB Saunders, 1991, p. 293.

down. For less severe cases or before returning to activity, those with flat feet are usually prescribed an arch support (orthotic) to reduce stress to the tendon. Others may require more extensive supports or braces. Surgery to remove the inflamed tendon lining or degenerated tendon tissue is occasionally necessary.

■ ■ ■ 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 as necessary by your physician. Use only as directed.
- Cortisone injections are rarely, if ever, indicated. 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 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.
- 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

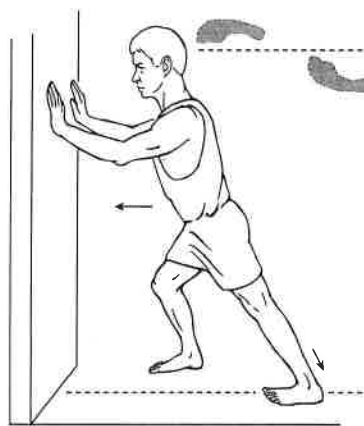
- Symptoms get worse or do not improve in 2 to 4 weeks despite treatment
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

EXERCISES

➤ RANGE OF MOTION AND STRETCHING EXERCISES • Posterior Tibial Tendon Tendinitis

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.



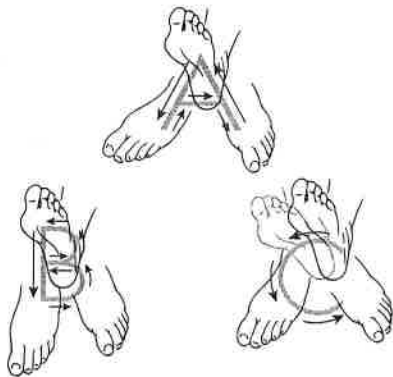
STRETCH • Gastrocnemius

1. Stand *one* arm length from the wall as shown. Place calf muscle to be stretched behind you as shown.
2. Turn the *toes in* and *heel out* of the leg to be stretched.
3. Lean toward wall leading with your waist, allowing your arms to bend. **Keep your heel on the floor.**
4. First do this exercise with the knee straight, then bend the knee slightly. Keep your heel on the floor at all times.
5. Hold this position for _____ seconds.
6. Repeat exercise _____ times, _____ times per day.



RANGE OF MOTION • Active Dorsi/Plantar Flexion

1. Pull your toes and foot toward your body as far as possible, then point the foot and toes away from body as far as possible.
2. Perform this exercise with the knee straight and then with the knee bent.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



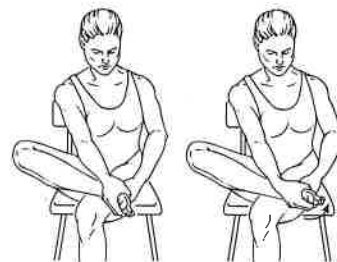
RANGE OF MOTION • Ankle Alphabet

1. Write all the capital letters of the alphabet with your foot and ankle. The motion should come from your foot and ankle, not your hip or knee.
2. Move the foot and ankle slowly, writing the letters as large as possible/comfortable for you.
3. Repeat exercise _____ times, _____ times per day.



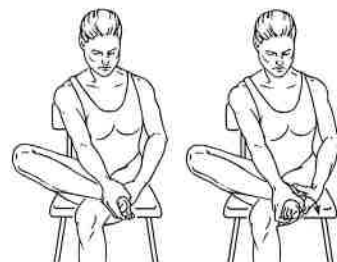
RANGE OF MOTION • Ankle Plantar Flexion

1. Sit in the position shown.
2. Using your hand, pull your toes and ankle down as shown so that you feel a gentle stretch.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



RANGE OF MOTION • Ankle Inversion

1. Sit with your _____ leg crossed over the other.
2. Grip the foot with your hands as shown and turn the sole of your foot upward and in so that you feel a stretch on the outside of the ankle.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



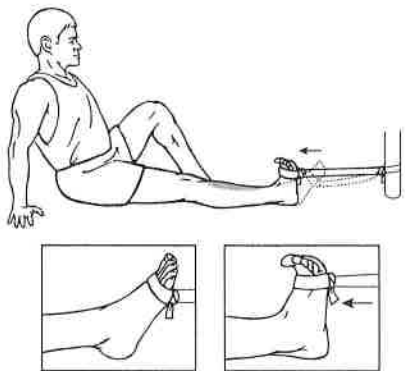
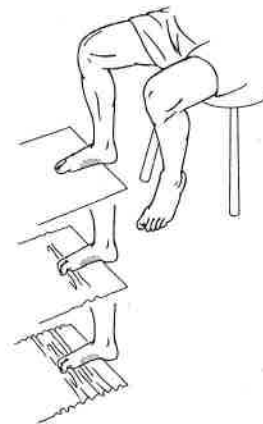
RANGE OF MOTION • Ankle Eversion

1. Sit with your _____ leg crossed over the other.
2. Grip the foot with your hands as shown and turn the sole of your foot upward and out so that you feel a stretch on the inside of the ankle.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.

> STRENGTHENING EXERCISES • Posterior Tibial Tendon Tendinitis

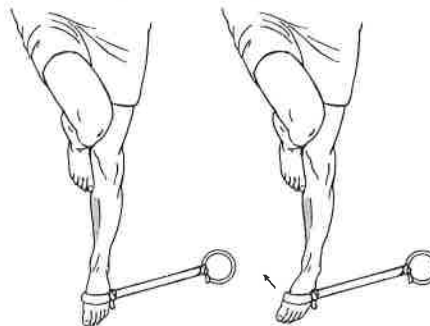
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



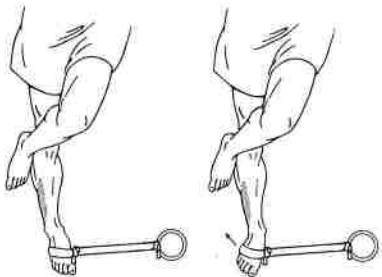
STRENGTH • Towel Curls

1. Sit in a chair and place a towel on a noncarpeted floor. Place your foot/toes on towel as shown. (You may also stand to do this exercise rather than sit.)
2. Curl/pull towel toward you with your toes while keeping your heel on the floor. Move towel with toes only. Do not move your knee or ankle.
3. If this is too easy, place a light weight (book, hand weight, etc.) at the far end of the towel.
4. Repeat exercise _____ times, _____ times per day.



STRENGTH • Dorsiflexors

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot as shown.
2. Slowly pull the foot toward you. Hold this position for _____ seconds. Slowly return to starting position.
3. Repeat exercise _____ times, _____ times per day.



STRENGTH • Ankle Inversion

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot.
2. Turn your toes/foot inward as far as possible, attempting to push your little toe down and in. Hold this position for _____ seconds.
3. Slowly return to starting position.
4. Repeat exercise _____ times, _____ times per day.

STRENGTH • Ankle Eversion

1. Attach one end of elastic band to fixed object or leg of table/desk. Loop the opposite end around your foot.
2. Turn your toes/foot outward as far as possible, attempting to pull your little toe up and outward. Hold this position for _____ seconds.
3. Slowly return to starting position.
4. Repeat exercise _____ times, _____ times per day.