

# POSTERIOR TIBIAL TENDON RUPTURE



## ■ ■ ■ Description

Posterior tibial tendon rupture is a complete tear of the posterior tibial tendon. This structure is the tendon attachment of leg muscles (posterior tibialis) to the inner part of the foot. There is loss of continuity between the inner leg muscles and the foot and thus loss of function of the muscles. The function of the posterior tibialis muscle is to forcefully push the front of the foot down (such as when standing on toes and pushing off with walking, running, or jumping) and turn the foot inward.

## ■ ■ ■ Common Signs and Symptoms

- A pop or rip felt behind the inner part of the ankle
- Pain and weakness with moving the foot (especially when pushing down with the front of the foot or turning it inward)
- Inability to or weakness with attempts to stand on the toes or ball of foot
- Tenderness, swelling, warmth, and redness around the posterior tibial tendon
- Bruising at the heel after 48 hours
- Flat foot (only on the injured side)

## ■ ■ ■ Causes

- Sudden episode of stressful overactivity, such as with jumping, hurdling, or starting a sprint

## ■ ■ ■ Risk Increases With

- Sports that require sudden, explosive muscle contraction, such as those involving jumping and quick starts; also with running or contact sports
- Poor physical conditioning (strength and flexibility)
- Previous or untreated posterior tibial tendon injury
- Cortisone injection into the posterior tibial tendon
- Obesity and decreased circulation due to cardiovascular problems

## ■ ■ ■ 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
  - Cardiovascular fitness
  - Ideal body weight
- Arch supports (orthotics), taping, protective strapping, or an adhesive bandage may be recommended before practice or competition.

## ■ ■ ■ Expected Outcome

Surgery is recommended to allow the greatest likelihood of return to full activity with least risk of complications. Sports usually can be resumed after 4 to 9 months.

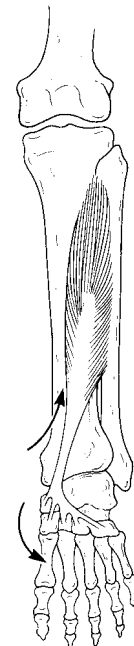
## ■ ■ ■ Possible Complications

- Weakness of the posterior tibial muscles, especially if untreated, resulting in problems standing on toes and pushing off
- Rerupture of the tendon after treatment
- Prolonged disability
- Flat feet
- Arthritis of the foot.
- Risks of surgery, including infection, injury to nerves (numbness, weakness), bleeding, and pain

## ■ ■ ■ General Treatment Considerations

Initial treatment consists of not walking on the affected leg, icing the area, applying a compressive elastic bandage, and elevating the injured leg to eye level. Definitive treatment options include surgical and nonsurgical intervention.

- *Nonsurgical treatment* is usually reserved for patients with medical problems or after chronic injury.



**Figure 1**

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

- *Surgical treatment* usually involves sewing the ends of the tendon back together, followed by immobilization in a cast (usually a short leg cast, below the knee to toes). If the injury is not acute, reconstruction by using another tendon to replace the function of the torn posterior tibial tendon is often recommended if there is no arthritic change already in the foot. This is because the tendon often cannot be repaired in chronic (old) injuries. If arthritis exists, fusion of the affected joints usually is recommended.

■ ■ ■ **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 and only as much as you need.

■ ■ ■ **Notify Our Office If**

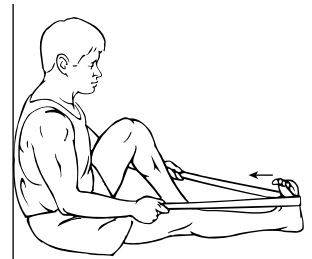
- Pain increases despite treatment
- Cast discomfort develops
- Any of the following occur after surgery:
  - You experience pain, numbness, or coldness in the foot and ankle
  - Blue, gray, or dusky color appears in the toenails
  - You develop signs of infection, including fever, increased pain, swelling, redness, drainage, or bleeding in the surgical area
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

**EXERCISES**

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Posterior Tibial Tendon Rupture

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.



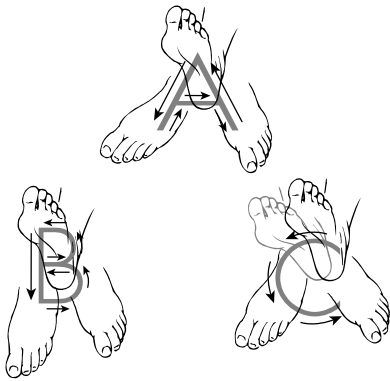
**STRETCH** • Gastrosoleus

1. Sit with your leg straight out in front of you and loop a towel around the ball of your foot as shown in the diagram.
2. Pull your foot and ankle toward you using the towel.
3. Keep your knee straight while doing this. Do not let your knee bend.
4. Hold this position for \_\_\_\_\_ seconds.
5. 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.



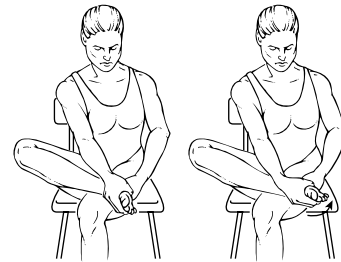
**RANGE OF MOTION • Ankle Alphabet**

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.



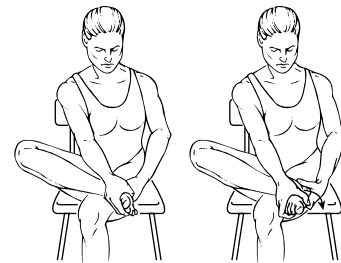
**RANGE OF MOTION • Ankle Plantar Flexion**

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.



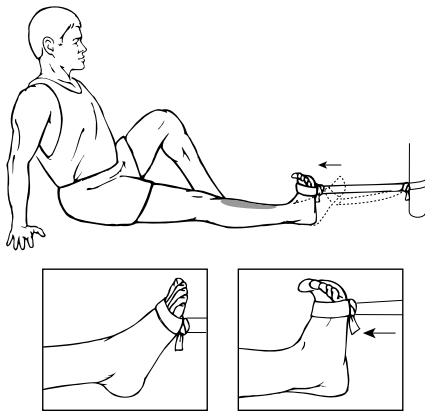
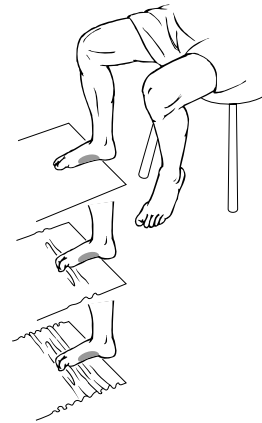
**RANGE OF MOTION • Ankle Eversion**

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 Rupture**

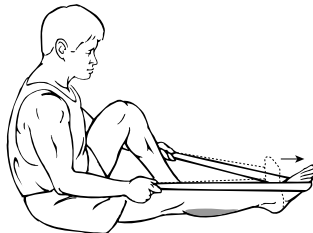
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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 • 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.

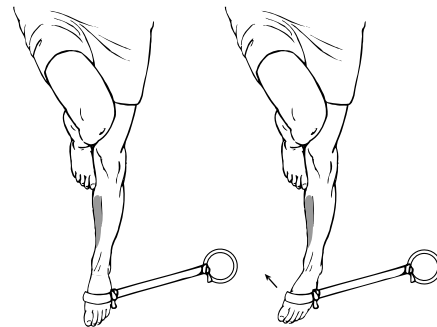


**STRENGTH • Plantarflexors**

1. Loop elastic band around foot as shown. Pull the band toward you with your hands.
2. Push your toes away from you slowly. Hold this position for \_\_\_\_ seconds. Slowly return to starting position.
3. Repeat exercise \_\_\_\_ times, \_\_\_\_ times per day.

**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 • 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.

Notes:

(Up to 4400 characters only)

Notes and suggestions