

POSTERIOR ANKLE IMPINGEMENT AND POSTERIOR PROCESS FRACTURE OF THE TALUS



■ ■ ■ Description

Posterior ankle impingement is characterized by pinching and inflammation of the tissues in the back of the ankle. This may be associated with a fracture in the back of the ankle bone (talus) or an extra bone behind the ankle (os trigonum). This occurs in people who are their toes often, such as ballet dancers, ice skaters, and gymnasts.

■ ■ ■ Common Signs and Symptoms

- Pain with forced plantar flexion (forcing the toes downward), when standing on tiptoes, and when wearing shoes with high heels; pain with flexing (bending) of the great (big) toe
- Tenderness in the back of the ankle (occasionally on the outside of the ankle)
- Pain when running, jumping, or walking down stairs or hills or when squatting while standing on the toes
- Mild swelling and occasionally bruising in the back of the ankle or heel (with fracture)

■ ■ ■ Causes

- Repeated or single forced plantar flexion (toes pointing down) injury to the foot and ankle, such as from heels catching while going down stairs, from sliding and catching the heel of the shoe or cleats, when kicking a football, or when standing on the tips of the toes repeatedly
- Less commonly, due to excessive dorsiflexion (extension of the ankle, toes going up); often associated with twisting of the ankle

■ ■ ■ Risk Increases With

- Sports that require repeated standing on the tips of the toes (ballet dancing, gymnastics, ice skating); sports that involve sliding in shoes with cleats, where the heel may catch the ground, causing a forced flexion of the ankle (soccer, baseball); or with repeated kicking with the foot plantarflexed (such as when kicking a football)
- Previous foot or ankle sprains or dislocations
- Shoes with inadequate support to prevent forced flexion of the ankle or shoes with excessively long cleats
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Ankle and leg flexibility
 - Muscle strength and endurance
- Use proper technique and have a coach correct improper technique.
- Taping, protective strapping, bracing, or high-top shoes may help prevent injury. Initially, tape is best; however, it loses most of its support function within 10 to 15 minutes.

- Wear proper protective shoes (high-top shoes with taping or bracing are more effective than either alone) and the correct length of cleats for the surface.

■ ■ ■ Expected Outcome

This condition is usually curable within 4 to 6 weeks with appropriate treatment. The recovery is quicker if not associated with fracture.

■ ■ ■ Possible Complications

- Prolonged healing time if not appropriately treated or if not given enough time to heal
- Prolonged disability
- Frequent recurrence of symptoms; appropriately addressing the problem with rehabilitation decreases frequency of recurrence and optimizes healing time
- Complications of surgery, including infection, bleeding, injury to nerves, pain, ankle stiffness, and weakness

■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem. These can all be carried out at home for acute cases. Occasionally, immobilizing the ankle with bracing, casting, or a walking boot may be attempted to allow the inflammation to settle down. Chronic cases often require referral to a physical therapist or athletic trainer for further evaluation and treatment. If symptoms persist, an injection of cortisone and anesthetics or surgical intervention may be required. Uncommonly, surgery may be necessary to remove the small piece of bone that may be causing the pinching and pain with flexion of the foot and ankle.

■ ■ ■ 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.
- Injections of corticosteroids may be given to reduce inflammation, although not usually for acute injuries.

■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 20 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or 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
- 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
 - Signs of infections develop, 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, including bleeding, stomach upset, or an allergic reaction)

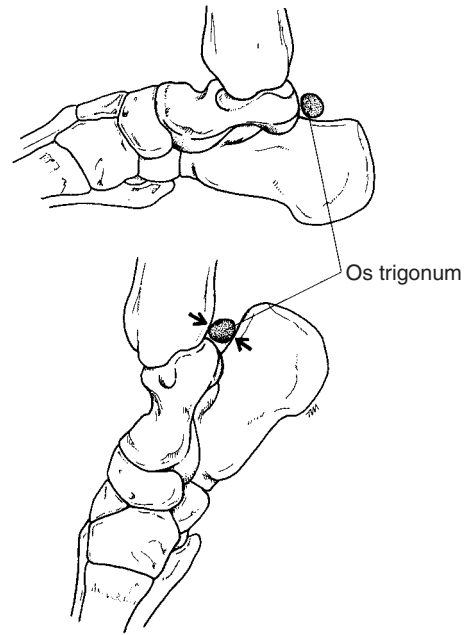


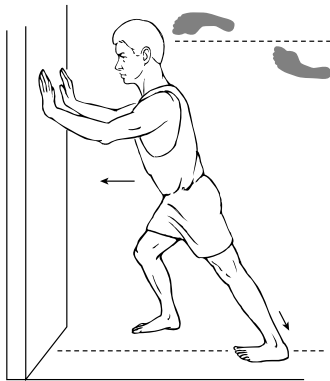
Figure 1

From Baxter DE: *The Foot and Ankle in Sport*. St. Louis, Mosby Year Book, 1995, p. 298.

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Posterior Ankle Impingement

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.



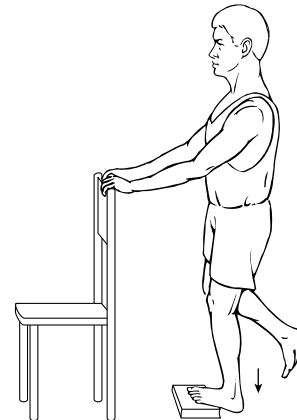
STRETCH • Gastrocnemius

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 • Toe Extension

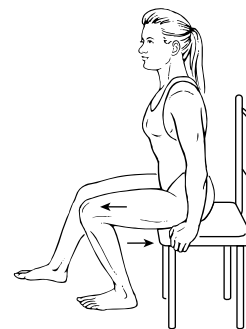
1. Grip your toe(s) as shown in the drawing.
2. Pull the toe(s) up toward your body as shown. Repeat this exercise by pulling the toe down.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.



STRETCH • Gastrocnemius

Note: This exercise can place a lot of stress on your foot and ankle and should only be done after specifically checking with your physician, physical therapist, or athletic trainer.

1. Place your toes and the ball of your foot on a book(s) or the edge of a stair. Your heel should be off the ground.
2. Hold on to a chair or stair rail for balance.
3. Allow your body weight to stretch your calf.
4. First do this exercise with the knee straight, then bend the knee slightly.
5. Hold this position for _____ seconds.
6. Repeat exercise _____ times, _____ times per day.



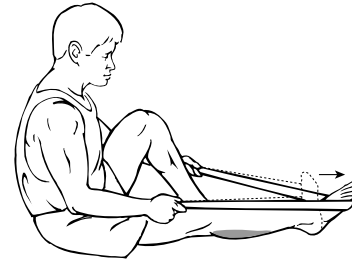
RANGE OF MOTION • Ankle Dorsiflexion

1. Sit on the edge of a chair as shown.
2. Place your _____ foot closest to the chair.
3. Keep your foot flat on the floor and move your knee forward over the foot.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day.

> **STRENGTHENING EXERCISES** • Posterior Ankle Impingement

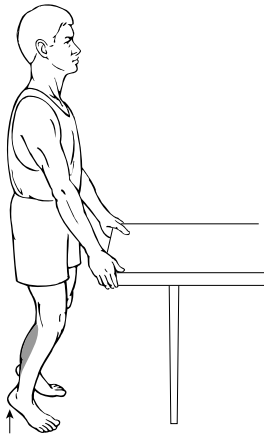
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



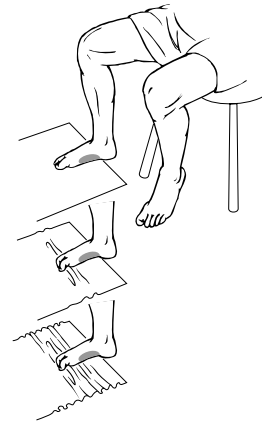
STRENGTH • Plantarflexors

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.



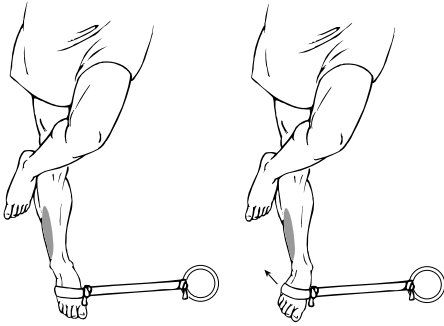
STRENGTH • Plantarflexors

1. Stand with feet shoulder-width apart. Hold on to counter or chair if necessary for balance.
2. Rise up on your toes as far as you can. Hold this position for _____ seconds.
3. Complete this exercise using only one leg if it is too easy using both legs.
4. Repeat exercise _____ times, _____ times per day.



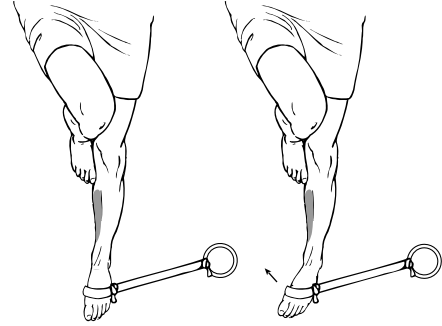
STRENGTH • Towel Curls

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 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.



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