

# PLANTAR FASCITIS (Heel Spur Syndrome)



## Description

Plantar fasciitis is characterized by stiffness and inflammation of the main fascia (fibrous connective [ligament-like] tissue) on the bottom of the foot. It is occasionally associated with a bone spur on the heel. Occasionally there may be a partial or complete tear of the fascia of the bottom of the foot. Bone spurs themselves usually do not cause symptoms.

## Common Signs and Symptoms

- Pain and tenderness in the sole of the foot, mostly under the heel bone, with standing or walking
- Particularly noticeable pain with the first steps when getting out of bed in the morning or after sitting

## Causes

- Stress or injury to the heel tissues, which causes inflammation and calcification of the fascia of the foot
- Irritation of a small nerve that runs under the foot where the main fascia attaches to the heel bone
- Tight calf muscles or flat feet
- Shoes that are poorly fitted, have inadequate arch supports, have with soles that are too stiff, or have rigid arch supports (orthotics)
- Activities that require sudden turns or stops

## Risk Increases With

- Sports, including running or jogging, and sudden stops or changes in direction
- Prolonged standing
- Poor physical conditioning (strength and flexibility)
- Inadequate warm-up before practice or play
- Obesity
- Flat feet

## Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Calf, ankle, and foot flexibility
  - Strength and endurance
  - Cardiovascular fitness
  - Ideal body weight
- Avoid activities that put a constant strain on the foot.
- Wear appropriate shoes with a rubber or felt heel cushion and good arches or cushioned arch supports.

## Expected Outcome

This condition is usually curable with appropriate conservative treatment. If not, heel spurs are often curable with surgery.

## Possible Complications

- Frequent recurrence of symptoms, resulting in a chronic problem; appropriately addressing the problem the first time decreases frequency of recurrence
- Lower back or knee disorders caused by constant limping
- Pain or weakness of the foot during push-off following surgery
- Chronic inflammation, scarring, and partial or complete fascia tear, occurring more often from repeated injections

## General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching exercises of the heel cord and achilles tendon, and modification of activities. A heel cup or felt insert in the shoe to relieve pressure on the heel usually is recommended. Occasionally, wearing splints at night may be offered. Chronic cases may require referral to a physical therapist or athletic trainer for further evaluation and treatment. Arch supports (orthotics) are helpful for people with flat feet to prevent or treat this problem. Occasionally surgery is needed to release the fascia and nerve. Surgery is often effective at relieving the symptoms.

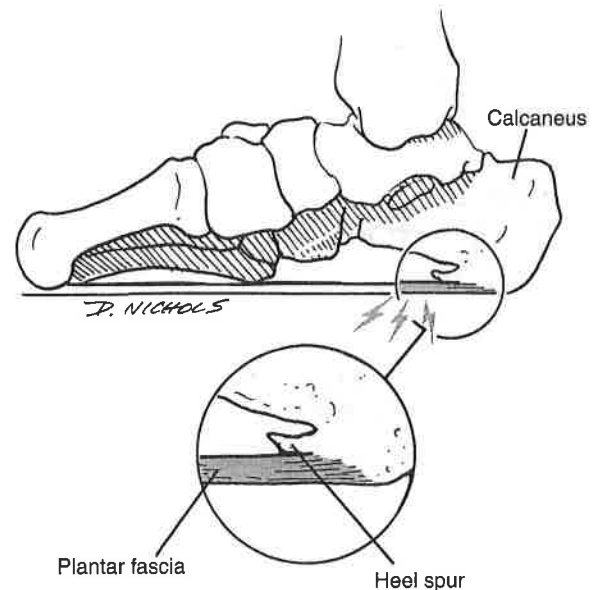


Figure 1

From Shankman GA: Fundamental Orthopaedic Management for the Physical Therapy Assistant. St. Louis, Mosby Year Book, 1997, p. 141.

**■ ■ ■ 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.
- Cortisone injections reduce inflammation. However, these are done only sparingly; there is a limit to the number of times cortisone may be given, because it weakens muscle, fascia, and tendon tissue. Anesthetics temporarily relieve pain.

**■ ■ ■ 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 weeks despite treatment

**> RANGE OF MOTION AND STRETCHING EXERCISES • Plantar Fasciitis (Heel Spur Syndrome)**

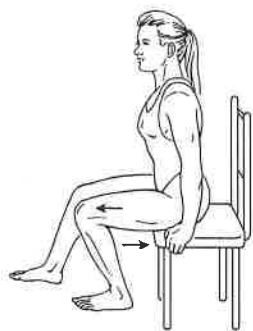
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



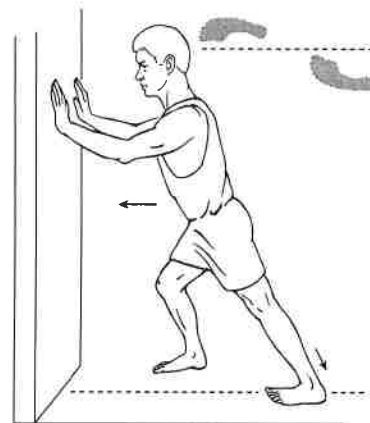
**RANGE OF MOTION • Toe Extension**

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.



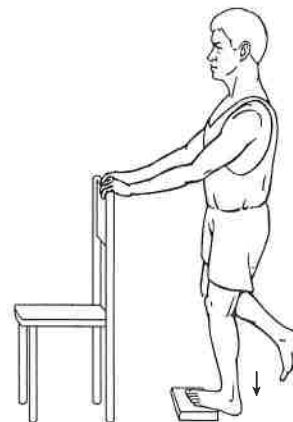
**RANGE OF MOTION • Ankle Dorsiflexion**

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.



**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.



**STRETCH • Gastrocnemius**

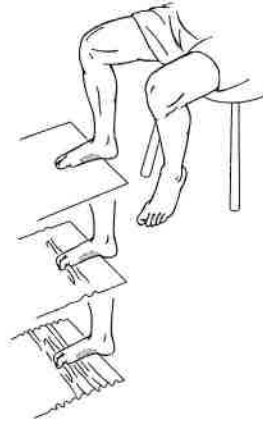
**Note:** This exercise can place a lot of stress on your foot and ankle and should only be done after specifically checking with your physician, physical therapist, or athletic trainer.

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.

**> STRENGTHENING EXERCISES • Plantar Fasciitis (Heel Spur Syndrome)**

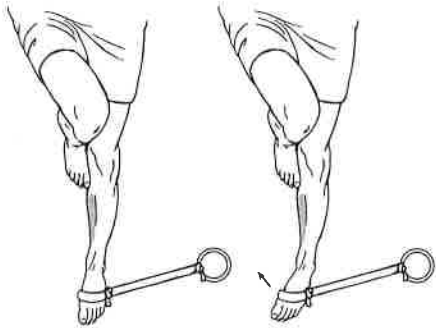
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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 • 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.