

HEEL COMPRESSION SYNDROME (Fat Pad Atrophy)



■ ■ ■ Description

Heel compression syndrome is characterized by pain in the bottom of the heel due to shrinkage (atrophy) of the heel pad. Atrophy of the fat tissue in the heel pad results in loss of ability to absorb shock and shear forces when the foot impacts the ground.

■ ■ ■ Common Signs and Symptoms

- Diffuse pain on the bottom of the heel, made worse by running on hard surfaces or in a shoe with poor shock absorption capacity
- No swelling or increased warmth
- Less cushion on bottom of the heel

■ ■ ■ Causes

- The heel fat pad slowly deteriorates (atrophies) after the age of 30.
- This may occur more rapidly in runners, particularly distance runners.
- Fat pad atrophy may also occur with fracture of the calcaneus (broken heel bone) or direct injury to the heel.

■ ■ ■ Risk Increases With

- Sports, including distance running, especially on hard surfaces
- Prolonged standing
- Poor physical conditioning (strength and flexibility)
- Shoes with poor absorption capacity
- Obesity
- Flat feet
- Fracture of the heel bone (calcaneus)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Calf and ankle flexibility
 - Muscle strength and endurance
 - Cardiovascular fitness
- Maintain ideal body weight.
- Avoid activities that put a constant strain on the foot.
- Wear appropriate shoes with good absorption capacity; change shoes every 300 to 500 miles (mileage for which most shoes provide good shock absorption); run on soft surfaces (beach, grass, composite track).
- Wear a heel lift to reduce pressure to the heel (pushing weight to the front of the foot).
- Emphasize cross-training.

■ ■ ■ Expected Outcome

Pain can resolve with appropriate treatment. However, this problem may become chronic.

■ ■ ■ Possible Complications

Frequent recurrence of symptoms, resulting in a chronic problem that often affects ability to compete.

■ ■ ■ 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 cushioned heel cup in the shoe is often recommended because it may relieve pressure and help cushion the heel. Changing to more shock-absorbent shoes and a softer running surface is usually beneficial. Occasionally a heel lift is recommended to transfer weight to the front of the foot (less to the heel). Injections of cortisone are not used because they tend to accelerate the atrophy. Currently no surgical treatment exists for this problem.

■ ■ ■ 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.

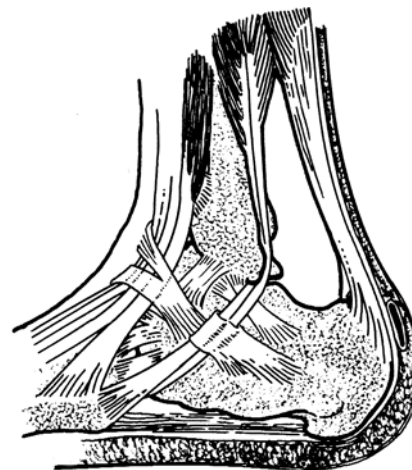


Figure 1

From Nicholas JA, Hershman EB: *The Lower Extremity and Spine in Sports Medicine*. St. Louis, Mosby Year Book, 1995, p. 444.

- Narcotic pain medications are not prescribed for this problem.

■ ■ ■ **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**

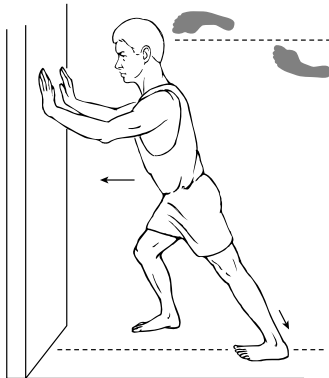
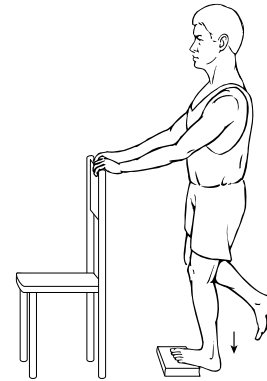
- Symptoms get worse or do not improve in 2 weeks despite treatment

EXERCISES

➤ **RANGE OF MOTION AND STRETCHING EXERCISES** • Heel Compression Syndrome (Fat Pad Atrophy)

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

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.

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.

Notes:

(Up to 4400 characters only)

Notes and suggestions