

Plantar Fasciitis

What is plantar fasciitis?

Plantar fasciitis is a painful inflammation of the bottom of the foot between the ball of the foot and the heel. The tough tissue that supports the arch of your foot is called the fascia.

How does it occur?

There are many possible causes of plantar fasciitis, including:

- wearing high heels
- gaining weight
- increased running, jumping, walking, or stair-climbing

Wearing high-heeled shoes for long periods of time is one possible cause. If you wear high-heeled shoes, including western-style boots, the fascia can become shorter. Pain then occurs when you stretch fascia that has shortened. This painful stretching might happen, for example, when you walk barefoot after getting out of bed in the morning.

If you gain weight, you might be more likely to have plantar fasciitis, especially if you walk a lot or stand in shoes with poor heel cushioning. Normally there is a pad of fatty tissue under your heel bone. Weight gain might break down this fat pad and cause heel pain.

Runners may get plantar fasciitis when they change their workout and increase their mileage or frequency of workouts. It can also happen with a change in exercise surface or terrain, or if your shoes are worn out and don't provide enough cushion for your heels.

If the arches of your foot are unusually high or low, you are more likely to develop plantar fasciitis than if your arches are normal.

What are the symptoms?

The main symptom of plantar fasciitis is heel pain when you walk. You may also feel pain when you stand and possibly even when you are resting. This pain typically occurs first thing in the morning after you get out of bed, when your foot is placed flat on the floor. The pain occurs because you are stretching the plantar fascia. The pain usually lessens with more walking, but you may have it again after periods of rest.

You may feel no pain when you are sleeping because the position of your feet during rest allows the fascia to shorten and relax.

How is it diagnosed?

Your healthcare provider will ask about your symptoms. He or she will ask if the bottom of your heel is tender and if you have pain when you stretch the bottom of your foot. You may have an X-ray of your heel.

How is it treated?

To treat this condition:

- Give your painful heel lots of rest. You may need to stay completely off your foot for

several days when the pain is severe.

- Raise your heel on a pillow when you sit or lie down.
- Take an anti-inflammatory such as ibuprofen, or other medicine as directed by your provider. Nonsteroidal anti-inflammatory medicines (NSAIDs) may cause stomach bleeding and other problems. These risks increase with age. Read the label and take as directed. Unless recommended by your healthcare provider, do not take for more than 10 days.
- Rest your heel on an ice pack wrapped in a cloth for up to 20 minutes at a time several times a day can also help.
- A night splint may help keep the plantar fascia stretched while you are sleeping.
- Try to cushion your foot. You can do this by wearing athletic shoes, even at work, for a while. Heel cushions can also be used. The cushions should be worn in both shoes. They are most helpful if you are overweight or an older adult.
- Your healthcare provider may recommend shoe inserts, called orthotics. You can buy orthotics at a pharmacy or athletic shoe store or they can be custom-made. These supports can be particularly helpful if you have flat feet or high arches.
- Lose weight if needed.
- Your provider may give you an injection of a corticosteroid medicine.
- Physical therapy may be needed to stretch, strengthen, and stabilize muscles and fascia.
- Surgery is rarely needed.

How long will the effects last?

You may find that the pain is sometimes worse and sometimes better over time. If you get treatment soon after you notice the pain, the symptoms should stop after several weeks. If, however, you have had plantar fasciitis for a long time, it may take many weeks to months for the pain to go away.

When can I return to my normal activities?

Everyone recovers from an injury at a different rate. Return to your activities depends on how soon your foot recovers, not by how many days or weeks it has been since your injury has occurred. In general, the longer you have symptoms before you start treatment, the longer it will take to get better. The goal is to return to your normal activities as soon as is safely possible. If you return too soon you may worsen your injury.

You may safely return to your activities when, starting from the top of the list and progressing to the end, each of the following is true:

- You have full range of motion in the injured foot compared with the uninjured foot.
- You have full strength of the injured foot compared with the uninjured foot.
- You can walk straight ahead without significant pain or limping.

How can I prevent plantar fasciitis?

The best way to prevent plantar fasciitis is to wear shoes that are well made and fit your feet. This is especially important when you exercise or walk a lot or stand for a long time on hard surfaces. Get new athletic shoes before your old shoes stop supporting and cushioning your feet.

You should also:

- Avoid repeated jarring to the heel.
- Keep a healthy weight.
- Do your leg and foot stretching exercises regularly.

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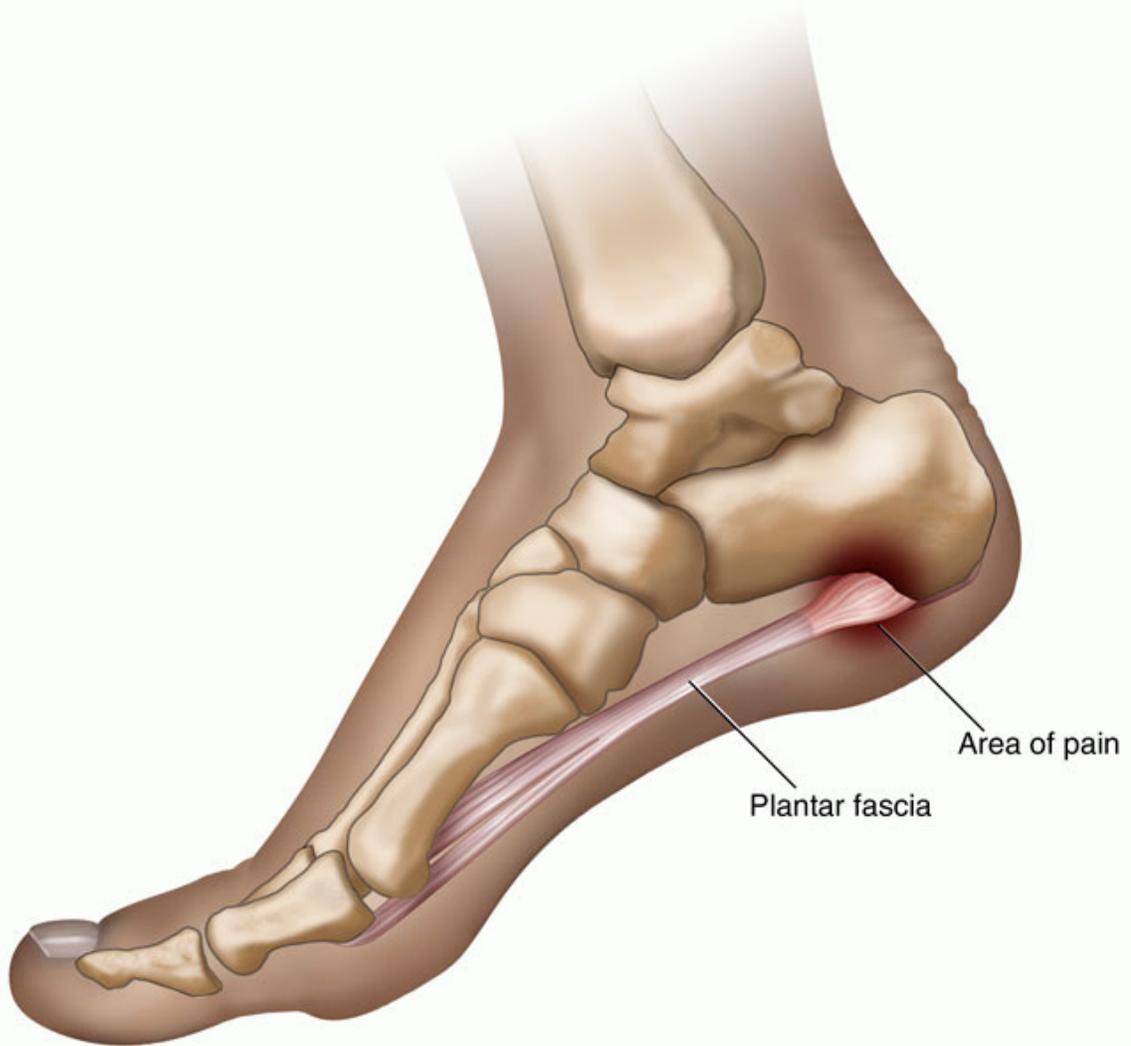
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Plantar Fasciitis Exercises

You may begin strengthening the muscles of your hip and stretching the muscles of your foot right away.

- **Prone hip extension:** Lie on your stomach with your legs straight out behind you. Draw your belly button in towards your spine and tighten your abdominal muscles. Tighten the buttocks and thigh muscles of the leg on your injured side and lift the leg off the floor about 8 inches. Keep your leg straight. Hold for 5 seconds. Then lower your leg and relax. Do 2 sets of 15.
- **Side-lying leg lift:** Lie on your uninjured side. Tighten the front thigh muscles on your injured leg and lift that leg 8 to 10 inches away from the other leg. Keep the leg straight and lower it slowly. Do 2 sets of 15.
- **Frozen can roll:** Roll your bare injured foot back and forth from your heel to your mid-arch over a frozen juice can. Repeat for 3 to 5 minutes. This exercise is particularly helpful if it is done first thing in the morning.
- **Towel stretch:** Sit on a hard surface with your injured leg stretched out in front of you. Loop a towel around your toes and the ball of your foot and pull the towel toward your body keeping your leg straight. Hold this position for 15 to 30 seconds and then relax. Repeat 3 times.
- **Standing calf stretch:** Stand facing a wall with your hands on the wall at about eye level. Keep your injured leg back with your heel on the floor. Keep the other leg forward with the knee bent. Turn your back foot slightly inward (as if you were pigeon-toed). Slowly lean into the wall until you feel a stretch in the back of your calf. Hold the stretch for 15 to 30 seconds. Return to the starting position. Repeat 3 times. Do this exercise several times each day.
- **Sitting plantar fascia stretch:** Sit in a chair and cross one foot over your other knee. Grab the base of your toes and pull them back toward your leg until you feel a comfortable stretch. Hold 15 seconds and repeat 3 times.
- **Achilles stretch:** Stand with the ball of one foot on a stair. Reach for the step below with your heel until you feel a stretch in the arch of your foot. Hold this position for 15 to 30 seconds and then relax. Repeat 3 times.

After you have stretched the bottom muscles of your foot, you can start strengthening the muscles of your foot.

- **Towel pickup:** With your heel on the ground, pick up a towel with your toes. Release. Repeat 10 to 20 times. When this gets easy, add more resistance by placing a book or small weight on the towel.
- **Balance and reach exercises:** Stand next to a chair with your injured leg farther from the chair. The chair will provide support if you need it. Stand on the foot of your injured leg and bend your knee slightly. Try to raise the arch of this foot while keeping your big toe on the floor.
 - A. Keep your foot in this position. With the hand that is farther away from the chair, reach forward in front of you by bending at the waist. Avoid bending your knee any more as you do this. Repeat this 10 times. To make the exercise more challenging, reach farther in front of you. Do 2 sets of 10.
 - B. Stand in the same position as above. While keeping your arch height, reach the hand that is farther away from the chair across your body toward the chair. The farther you reach, the more challenging the exercise. Do 2 sets of 10.
- **Heel raise:** Balance yourself while standing behind a chair or counter. Using the chair or counter as a support to help you, raise your body up onto your toes and hold for 5 seconds. Then slowly lower yourself down without holding onto the support. (It's OK to keep holding onto the support if you need to.) When this exercise becomes less painful, try lowering yourself down on the injured leg only. Repeat 15 times. Do 2 sets of 15. Rest 30 seconds between sets.

Written by Tammy White, MS, PT, and Phyllis Clapis, PT, DHSc, OCS, for RelayHealth.

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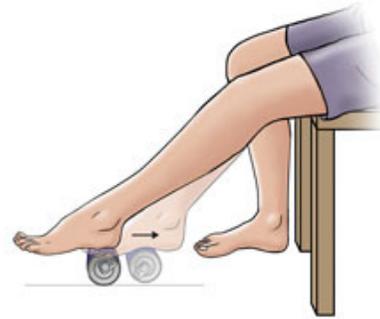
Plantar Fasciitis Rehabilitation Exercises



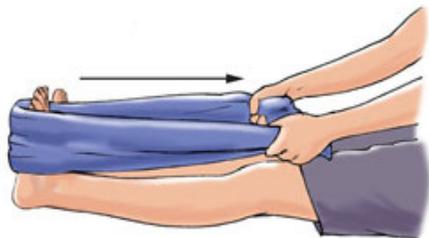
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Side-lying leg lift



Frozen can roll



Towel stretch



Standing calf stretch

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Sitting plantar fascia stretch



Achilles stretch



Towel pickup



Balance and reach exercise

A



Balance and reach exercise

B



Heel raise