Orthopedic Center of Florida
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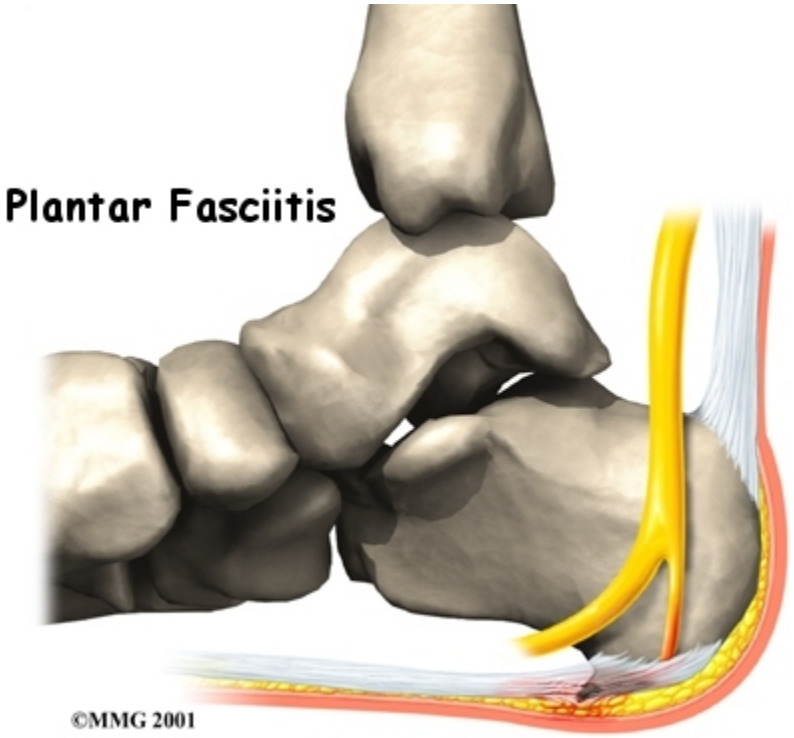
A Patient's Guide to Plantar Fasciitis (Heel Pain)

Introduction

Plantar fasciitis is a painful condition affecting the bottom of the foot. It is a common cause of heel pain and is sometimes called a *heel spur*. Plantar fasciitis can come from a number of underlying causes. Finding the precise reason for the heel pain is sometimes difficult. Even so, several options are available for treatment.



Anatomy

Where is the plantar fascia, and what does it do?

The *plantar fascia* is a structure that runs from the front of the heel bone (*calcaneus*) to the ball of the foot. This dense strip of tissue helps support the arch of the foot by acting something like the string on an archer's bow.

As you can imagine, when the foot is on the ground a tremendous amount of force (the full weight of the body) is concentrated on the plantar fascia. This force stretches the plantar fascia as the arch of the foot tries to flatten from the weight of your body. This is just like the string on a bow is stretched by the force of the bow trying to straighten. This leads to stress on the plantar fascia where it attaches to the heelbone. Small tears of the fascia can result. These tears are normally repaired by the body.

As this process of injury and repair repeats itself over and over again, a *bone spur* (a pointed outgrowth of the bone) sometimes forms as the body's response to try to firmly attach the fascia to the heel bone. This appears on an X-ray of the foot as a heel spur.

Causes

How does plantar fasciitis develop?

Heel pain probably comes from several causes. In some cases the heel spur can be so big it causes pain itself, but this is rare. The chronic inflammation of the fascia itself may be the source of pain in many cases. (This condition is probably most accurately called *plantar fasciitis*.) As we age, the very important fat pad that makes up the fleshy portion of the heel becomes thinner and degenerates. This can lead to inadequate padding on the heel and chronic pain in this area.

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Symptoms

What does plantar fasciitis feel like?

The symptoms of plantar fasciitis include pain in the center of the heel or arch when weight is placed on the foot. This is usually most pronounced in the morning when the foot is first placed on the floor or after periods of rest.

Diagnosis

How do doctors diagnose the condition?

The diagnosis of plantar fasciitis is generally made during the history and physical examination. There are several conditions that can cause heel pain, and plantar fasciitis must be distinguished from these conditions.

An X-ray may be ordered to rule out a stress fracture of the heel bone and to see if a bone spur is present that is large enough to cause problems. Ultrasound may help in evaluating for thickening or tearing of the ligament. An MRI may be needed if heel pain persists or to rule out a stress fracture to the heel bone. Laboratory investigation may be necessary in some cases to rule out a *systemic illness* causing the heel pain, such as rheumatoid arthritis, Reiter's syndrome, or ankylosing spondylitis. These are diseases that affect the entire body but may show up at first as pain in the heel.

Treatment

What can be done for my pain?

Nonsurgical Treatment

Most patients get better with the help of nonsurgical treatments.

Anti-inflammatory medications are sometimes used to decrease the inflammation in the fascia and reduce your pain. An injection of cortisone into the area of the fascia is very effective. Often, it may take serial injections to completely eradicate the symptoms. This are frequently accomplished under the guidance of ultrasound to ensure a more precise placement of the medication.

Stretches for the calf muscles on the back of the lower leg take tension off the plantar fascia.

A *night splint* can be worn while you sleep. The night splint keeps your foot from bending downward, and it places a mild stretch on the calf muscles and the plantar fascia. People seem to get better more quickly when using a night splint, and they report having less heel pain when placing their sore foot on the ground in the morning.

Supporting the arch with a well fitted arch support, or *orthotic*, may also help reduce pressure on the plantar fascia. Also, placing a special type of insert into the shoe, called a *heel cup*, can reduce the pressure on the sore area and add padding to a heel that has lost some of the fat pad through degeneration.

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Nonsurgical Rehabilitation

Patients with plantar fasciitis are commonly prescribed physical therapy. Therapists design exercises to improve flexibility in the calf muscles and the plantar fascia.

Treatments directed to the painful area help control pain and swelling. Examples include ultrasound, ice packs, and soft-tissue massage. Therapy sessions sometimes include *iontophoresis*, which uses a mild electrical current to push anti-inflammatory medicine to the sore area.

Ideas are offered for you to use at home, such as doing your stretches for the calf muscles and the plantar fascia. You may also be fit with a night splint to wear while you sleep. As mentioned earlier, the night splint is designed to put a gentle stretch on the calf muscles and plantar fascia as you sleep.

Rolling your foot and arch on a frozen water bottle may provide topical anti-inflammatory benefit as well as cold massage to further assist in stretching the plantar fascia.

Surgery

Surgery is a last resort in the treatment of heel pain. Physicians have developed many procedures in the last 100 years to try to cure heel pain. Most procedures that are commonly used today focus on several areas:

- remove the bone spur (if one is present)
- release the plantar fascia
- release pressure on the small nerves in the area

Surgery usually involves identifying the area where the plantar fascia attaches to the heel and releasing the fascia partially from the bone. If a small spur is present this is removed. The small nerves that travel under the plantar fascia are identified and released from anything that seems to be causing pressure on the nerves. This surgery can usually be done on an outpatient basis, meaning you can leave the hospital the same day.

Rehabilitation

What should I expect after treatment?

It will take several weeks before the tissues are well healed. The incision is protected with a bandage or dressing for about one week after surgery. You will probably use crutches briefly, and a physical therapist may be consulted to help you learn to use your crutches.

The stitches are generally removed in about 14 days. You should be released to full activity in about six weeks. It is recommended to continue with supportive sneakers and orthotics after this point to prevent recurrance.

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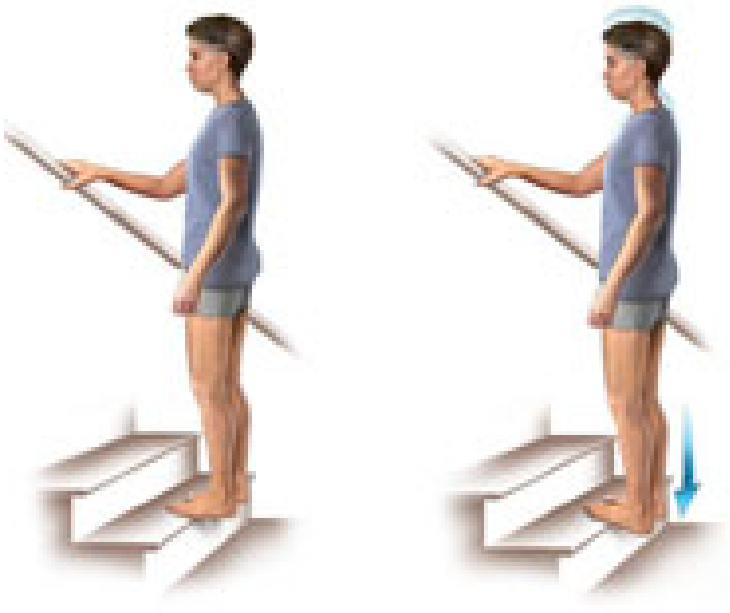
Exercises

Calf Stretch

Stand facing a wall with your hands on the wall at about eye level. Put the leg you want to stretch about a step behind your other leg. Keeping you back heel on the floor, bend your front knee until you feel a stretch in the back leg. Hold for 10 seconds, repeat 6 times.



Achilles Tendon Stretch

Stand on a step as shown. Slowly let your heels down over the edge of the step as you relax your calf muscles. Hold the stretch for about 10 seconds, then tighten your calf muscle a little to bring your heel back up to the level of the step. Repeat 6 times

Towel Stretch

Grab a rolled towel or belt at both ends, holding it under the ball of your foot. Gently pull the towel toward you while keeping your knee straight. Hold this position for 10 seconds. Repeat 6 times.