

Plantar fasciitis

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More than 2 million Americans suffer from heel pain each year. The most common cause of this pain is a condition called plantar fasciitis. Plantar fasciitis will affect around 10 percent of the U.S. population at some point in their lives. Medical costs from evaluations and treatments of this condition are estimated between \$192-million and \$376-million annually, in the United States.

What is plantar fasciitis?

The plantar fascia is a dense connective tissue structure that runs from the heel bone to the base of each toe. It helps support the arch of the foot while standing and moving. Excessive stresses on the tissue from over training, obesity, poor foot mechanics, standing too much or a number of other factors, causes the fascia to break down. This leads to micro-tears in the tissue and can be a source of pain and inflammation. If the strain isn't alleviated and the root cause of the problem isn't corrected, the condition will return and can last from months to years. This tissue breakdown is referred to as plantar fasciitis.

How is it diagnosed?

Plantar fasciitis can be diagnosed from patient symptom descriptions and through a physical examination. Patients with plantar fasciitis typically report experiencing:

- Intense heel/foot pain with the first few steps in the morning or when rising after periods of rest.
- Increasing pain with increased activity such as walking, yard work, shopping, prolonged standing or starting a new exercise program.
- Increasing pain with pregnancy or weight gain.
- Pain with walking up stairs.
- Pain that changes based on their footwear.

During the physical examination it is common to find:

- Arches that are either higher or lower than normal
- Decreased range of motion in the joints of the spine, hips, knees and ankles
- Decreased flexibility in the lower leg and hip muscles
- Weakness in the hip and core muscles
- Pain with pressure over the heel bone and/or longitudinal arch of the foot

- Trigger points (painful taut bands) in the calf and foot muscles that reproduce pain symptoms
- Pain with standing on the tip-toes during an active heel raise exercise

How is plantar fasciitis treated?

The initial treatments for plantar fasciitis begin with a brief period of rest, ice, anti-inflammatory medications (NSAIDs), and patient education to stop pushing through pain. Research shows that 90-95 percent of patients with plantar fasciitis recover with conservative treatments alone within 6 months to a year, and the most effective treatment is a daily home exercise program tailored to the patient's needs. It is important for patients to understand this to help them cope with their pain and to increase their compliance with their exercise program. The therapist may also prescribe some gentle stretches for the fascia that are best performed before standing after periods of rest or sleep. These treatments stop the physical overload to the tissues, decrease inflammation, and put the tissues in an environment that's conducive to the healing process.

The patient and their therapist must then identify factors in the patient's lifestyle that are causing the excessive strain on their feet. They could include excessive exercise, improper exercises such as always running on the same side of a slanted road or ditch, beginning a new exercise program too vigorously, a change in job demands or a recent change in footwear. Smoking, dehydration, pregnancy, chronic steroid use and age are also factors that can weaken connective tissues and contribute to plantar fasciitis.

Once those steps are complete, the physical therapist can begin addressing the specific impairments noted during the patient's evaluation. Treatments may include hands-on mobilization/manipulation techniques to the joints and soft tissues of the spine, hips and lower extremities, various stretching and strengthening exercises for the core and lower extremity soft tissues, and trigger point treatments using hands on or dry needling techniques.

Ice compresses can also be very effective at reducing plantar fasciitis symptoms, especially if done right before periods of rest. Many patients freeze water in Dixie cups during the day and then use the ice cup to massage their feet at night. Icing seems to work best at the end of the day to prevent irritation during the sleeping hours.

Orthotics are another treatment option that can be very beneficial for those suffering from plantar fasciitis. An orthotic is a formed material that can be placed in the bottom of a shoe to help control foot mechanics and decrease the load demands of the plantar fascia. They come in many shapes and sizes and can be made from a variety of materials. They can be prescribed over the counter or can be custom made to fit the anatomical needs of the patient. Recent research has found no significant difference when patients use custom fit orthotics versus over the counter

ones. Because of this, common practice is to have patients try an over the counter orthotic first and if it doesn't help they can purchase a more costly custom fit orthotic.

Additional treatments that may be beneficial to those with plantar fasciitis include the use of a night sock or a walking boot. A night sock is a long stocking that has a strap located near the toes that gets pulled up and wrapped around the patient's upper shin at night. This holds the plantar fascia in a stretched position all night long. Some patients report much less morning pain when walking after wearing this sock, but others saw they cannot sleep with the sock on due to discomfort. A walking boot is a hard boot that gets strapped onto the foot and/or lower leg to help decrease strain across the plantar fascia. These may be worn 4 to 6 weeks before the patient is weaned out of them. Some patients have little to no pain during and after wearing the boot while others report increasing hip and back pain with prolonged use.

Medications that are used to treat plantar fasciitis include over the counter anti-inflammatories, steroid injections, platelet injections and even botox injections. Typically the injections are used as a last resort if conservative treatment fails.

Some surgical techniques do exist to help those suffering from chronic plantar fasciitis but the general consensus is to try conservative care for up to 12 months before considering surgery.

No matter what treatment your physical therapist chooses, the key to successfully treating plantar fasciitis is to identify what caused it in the first place. Many treatment approaches focus on alleviating the pain symptoms without addressing its root causes. A consultation with a qualified physical therapist should be sufficient to answer these questions and customize a treatment approach for your individual needs.

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Keywords: foot pain, plantar fasciitis, patient education, physical therapy