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**Heel Pain (Plantar Fasciitis) & Equinus (Tight Calf/Achilles)**

Heel pain is most often caused by plantar fasciitis, a condition that is sometimes also called heel spur syndrome (when a spur is present). Heel pain may also be due to other causes, such as a stress fracture, tendonitis, arthritis, nerve irritation, or other pathologies.

Because there are several potential causes, it is important to have heel pain properly diagnosed. A foot and ankle surgeon is able to distinguish between all the possibilities and determine the underlying source of your heel pain.

**What Is Plantar Fasciitis?**Plantar fasciitis is an inflammation of the band of tissue (the plantar fascia) that extends from the heel to the toes. In this condition, the fascia first becomes irritated and then inflamed, resulting in heel pain.

**Causes:**The most common causes of plantar fasciitis are an excessively high arch, low arch, and tightness in the Achilles tendon and calf muscles. Each of these issues can cause increased strain on the plantar fascia.

Wearing unsupportive footwear as well as extended periods of walking on hard surfaces can also cause irritation and strain on the plantar fascia. This is often seen as an occupational hazard. Obesity can also contribute to plantar fasciitis.

**Symptoms:**Common symptoms of plantar fasciitis are:

* Pain on the bottom of the heel
* Pain that is usually worse upon arising
* Pain that increases over a period of months

People with plantar fasciitis often describe the pain as worse when they get up in the morning or after they’ve been sitting for long periods of time. In the earlier stages, the pain may actually improve after a few minutes of walking because walking stretches the plantar fascia. In later stages, you may lose the ability to “walk off” the pain. And for some people, the pain increases the longer they are on their feet.

**Diagnosis:**To arrive at a diagnosis, the foot and ankle surgeon will obtain your medical history and perform an examination.

In addition, diagnostic imaging studies such as x-rays or other imaging modalities may be used to distinguish the different types of heel pain and rule out other possible causes of heel pain. Sometimes heel spurs are found in patients with plantar fasciitis, but these are rarely the source of the pain. They are actually a result of the problem – chronic tightness of the plantar fascia.

**Non-Surgical Treatment:**Treatment of plantar fasciitis begins with first-line strategies, which you can begin at home:

* ***Stretching exercises.*** Exercises that stretch out the calf muscles address the underlying problem.
* ***Avoid going barefoot.*** This puts undue stress and strain on your plantar fascia.
* ***Ice.*** Putting an ice pack on your heel for 20 minutes 3-4 times a day helps reduce inflammation. Place a thin towel between the ice and your heel; do not apply ice directly to the skin.
* ***Limit activities.*** Cut down on extended physical activities to give your heel a rest.
* ***Shoe modifications.*** Good supportive shoes with arch supports and a slightly raised heel reduces stress on the plantar fascia.
* ***Medications.*** Oral anti-inflammatory drugs like ibuprofen (NSAID’s) or prednisone (Medrol), may be recommended to reduce pain and inflammation.

If you still have pain after several weeks, see your foot and ankle surgeon, who may add one or more of these treatment approaches:

* ***Padding and strapping.*** Placing pads in the shoe softens the impact of walking. Strapping helps support the foot and reduce strain on the fascia.
* ***Orthotic devices.*** Custom orthotic devices that fit into your shoe help can mitigate biomechanical abnormalities and reduce strain on the plantar fascia.
* ***Injection therapy.*** Corticosteroid injections can help reduce inflammation and relieve pain.
* ***Removable walking cast.*** A removable walking cast may be used to keep your foot immobile for a few weeks to allow it to rest and heal.
* ***Night splint.*** Wearing a night splint allows you to maintain an extended stretch of the plantar fascia while sleeping. This may help reduce the morning pain experienced by some patients.
* ***Physical therapy.*** Ultrasound, electrical stimulation, exercises, etc. may help provide relief.
* ***Regenerative medicine.*** An exciting new advanced modality that utilizes Platelet Rich Plasma (PRP) or other regenerative products to assist the body in reducing the chronic inflammation and assisting your body to heal the affected areas.

**When Is Surgery Needed?**Although most patients with plantar fasciitis respond to non-surgical treatment, a small percentage of patients may require surgery. If your chronic heel pain doesn’t respond to conservative measures, your foot and ankle surgeon will discuss whether surgical intervention would be beneficial.

**Long-term Care:**No matter what kind of treatment you undergo for plantar fasciitis, the underlying causes that led to this condition may remain. Therefore, you will need to continue with preventive measures. Wearing supportive shoes, stretching, and using custom orthotic devices are the mainstay of long-term treatment for plantar fasciitis.

**A word about *Equinus*:**

Equinus is a chronic tightness of the muscles that eventually become the Achilles tendon. The muscles are the gastrocnemius and the soleus. The gastrocnemius begins above the knee, and the soleus below – this is important to know with regards to the stretching exercises below. As the Achilles tendon inserts into the back of the heel, its fibers actually wrap around the underside of the heel bone and become continuous with the plantar fascia. Aaah…it’s all starting to make sense! A tight calf is often seen with plantar fasciitis. Conversely, you can have equinus without plantar fasciitis, and it can cause a whole host of other problems, particularly in the middle and front of the foot.

**Stretching:**

Stretching is critical to addressing the most common underlying cause of plantar fasciitis, heel spurs, equinus, and a host of other foot related pathologies. While there are many variations of stretching, these are the best “bang for the buck” because they recruit your body weight into the stretch and don’t rely on arm strength like some exercises. They are also safer than traditional stretches such as standing on a curb with the ball of your foot and lowering your heels. Another common technique is to roll your foot back and forth on a tennis ball, or a frozen water bottle. In truth, those methods don’t provide adequate stretch, and the ice spends only a fraction of the time in the areas where it is needed. Simply placing your heel on an ice pack and remaining still is far better cryotherapy.

**Note:** The exercises below are identical except for one key factor – the leg farthest from the wall being straight vs. bent. This difference addresses the gastrocnemius and soleus muscles respectively.

**Technique tips:** The farther your feet are from the wall, the greater the amount of stretch. Start close to the wall and move farther away as your muscles slowly stretch over time. Keep your feet pointed at (perpendicular to) the wall. Critical: make sure the heel of your back foot never raises off the ground!!!

