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### **Heel Pain**

Heel pain is generally the result of faulty biomechanics (walking gait abnormalities) that place too much stress on the heel bone and the soft tissues that attach to it. The stress may also result from injury, or a bruise incurred while walking, running, or jumping on hard surfaces; wearing poorly constructed footwear; or being overweight.

### **Heel Spurs**

A common cause of heel pain is the heel spur, a bony growth on the underside of the heel bone. The spur, visible by X ray, appears as a protrusion that can extend forward as much as half an inch. When there is no indication of bone enlargement, the condition is sometimes referred to as "heel spur syndrome." **The presence of pain in the heel is not due to the presence of a heel spur but instead is due to the inflammation which occurs around the insertion of the plantar fascia into the region of the heel spur.**

Heel spurs result from strain on the muscles and ligaments of the foot, by stretching of the long band of tissue that connects the heel and the ball of the foot, and by repeated tearing away of the lining or membrane that covers the heel bone. These conditions may result from biomechanical imbalance, running or jogging, improperly fitted or excessively worn shoes, or obesity.

### **Plantar Fasciitis**

Both heel pain and heel spurs are frequently associated with an inflammation of the band of fibrous connective tissue (fascia) running along the bottom (plantar surface) of the foot, from the heel to the ball of the foot. The inflammation is called plantar fasciitis. It is common among athletes who run and jump a lot as well as those with a sedentary lifestyle, and can be quite painful.

The condition occurs when the plantar fascia is strained over time beyond its normal extension, causing the soft tissue fibers of the fascia to tear or stretch at points along its

length; this leads to inflammation, pain, and possibly the growth of a bone spur where it attaches to the heel bone.

The inflammation may be aggravated by shoes that lack appropriate support, especially in the arch area, and by the chronic irritation that sometimes accompanies an athletic lifestyle.

Resting provides only temporary relief. When you resume walking, particularly after a night's sleep, you may experience a sudden elongation of the fascia band, which stretches and pulls on the heel. As you walk, the heel pain may lessen or even disappear, but that may be just a false sense of relief. The pain often returns after prolonged rest or extensive walking.

## Prevention

A variety of steps can be taken to avoid heel pain and accompanying afflictions:

- Wear shoes that fit well — front, back, and sides — and have shock-absorbent soles, rigid shanks, and supportive heel counters.
- Wear the proper shoes for each activity.
- Do not wear shoes with excessive wear on heels or soles.
- Prepare properly before exercising. Warm up and do stretching exercises before and after running.
- Pace yourself when you participate in athletic activities.
- Don't underestimate your body's need for rest and good nutrition.
- If obese, lose weight.

## Conservative Treatment

There are several techniques utilized to treat heel pain in an effort to keep the patient out of the operating room. Generally, the more techniques a person utilizes, the sooner and better relief of pain that person will experience. Keep in mind that only 10% of heel pain goes on to require surgical intervention. However, conservative treatment requires patience. In most patients, heel pain has been present for several weeks to months and therefore one must remember that “a chronic problem requires a chronic solution.”

- **Posterior Muscle Group Stretching**

Believe it or not, tightness of the calf muscle in the back of the leg plays a large role in the development of pain in the heel. Therefore, any stretching which can be done can be very helpful. This, along with other conservative measures, will be utilized to relieve your heel pain.

### **Keys to Effective Stretching**

- Do not bounce** during the stretch
- Maintain your stretch for a **minimum of 30 seconds** during each rep

- Perform the stretch consisting of **3 reps as many times a day as you can** (the more you do, the more benefit you will experience)
- When participating in athletic activity, always **stretch BEFORE and AFTER** the activity

### **Calf Stretch #1**



4 Key Points to Remember When Performing this Stretch:

1. Keep the back knee straight
2. Keep the back heel on the ground
3. Keep the toes of the back foot pointed straight ahead
4. If you don't feel the back of the leg stretching, you're doing it incorrectly

### **Calf Stretch #2**



4 Key Points to Remember When Performing this Stretch:

1. Hold on to something to maintain your balance
2. Drop your heels down with your forefoot firmly fixed to the elevated step
3. Keep the pearls regarding "Effective Stretching" in mind (previous page)
4. If you don't feel the back of the leg stretching, you're doing it incorrectly

- **Ice Massage**

Take an empty 2 liter plastic bottle and fill with water...place in the freezer to freeze and then utilize it as a “rolling pin” under the painful foot. Most patients find that this works best in terms of morning pain relief if performed the prior evening. Ice, along with massage, is a very good modality for decreasing painful inflammation.

- **Anti-Inflammatory Medication**

A non-steroidal anti-inflammatory medication is many times a useful adjunct in an attempt to calm the painful inflammation occurring at the site of the strained/tearing plantar fascial tissue.

- **Lo-Dye Taping**

A Lo-Dye Taping is a temporary taping technique that is applied to the foot in order to biomechanically support the foot and determine if the painful symptoms would respond favorable to an orthotic device. Our orthotics are custom-molded, biomechanically-controlling inserts placed into the shoes to correct the inherent faulty mechanics of the foot and ankle which lead to many painful, recurrent symptoms of the foot, ankle, knees, hips, and spine.

- **Custom-Molded Orthotics**

Custom-molded orthotic devices are the best at controlling the motion of the foot while supporting the arch during gait. While OTC orthotics work over the short-term, custom-molded orthotics generally last 5-10 years. These devices are much more rigid than the OTC device, are fashioned according to your foot and are therefore unique to your foot only. They also are considered a prescriptive device based on the amount of control your foot requires. In the same way eye glasses correct for vision, orthotics correct the faulty biomechanics of your foot.

- **Local Steroid Injections**

A technique utilized in those patients who are in moderate to severe pain or have not responded favorable to other conservative measures. This injection has proven to be very effective and safe in decreasing the pain of the inflammatory response. All patients react differently...some feeling the full benefit of pain relief while others feel it did nothing. Depending on your response may determine if successive injections are required (generally, up to 3 injections with at least a month in between are allowed).