Heel Spurs

**What is a Heel Spur?** A heel spur is a hook of bone that can form on the heel bone (calcaneus) and is associated with plantar fasciitis or plantar fasciosis. When the plantar fascia begins to tear, either from injury or aging, Mother Nature tries to heal it with the only weapon she has. She either tears or tries to weld the fascia together with bone. The tearing of the fascia is referred to as a fasci*osis* while an acute inflammation is called a fasci*i*itis. The resulting bone repairs that Mother Nature performs result in the formation of new bone that we refer to as a heel spur.

About 70 percent of patients with plantar fasciitis or plantar fasciosis have a heel spur that can be seen on an X-ray. However, many patients without pain symptoms can also have a heel spur. When foot ligaments fail due to age or injury, plantar fasciitis as well as heel spurs may occur. This collapse of the reinforcing struts (ligaments) that hold up the arch causes excess pressure on the tension elements of the plantar fascia. (See article on Ligament Laxity and also BioTensegrity).

**Who gets Heel Spurs?** Heel spurs are common in patients who have a history of foot pain caused by plantar fasciitis/fasciosis. Heel spurs are most often seen in middle-aged men and women, but can be found in all age groups. The heel spur itself is not thought to be the primary cause of pain, rather inflammation and irritation of the plantar fascia. A heel spur diagnosis is made when an X-ray shows a hook of bone protruding from the bottom of the foot at the point where the plantar fascia is attached to the heel bone.
**Why did I get a Heel Spur?**  The plantar fascia (#1) is a thick, ligamentous connective tissue that runs from the calcaneus (heel bone #2) to the ball of the foot. This strong and tight tissue helps maintain the arch of the foot. It is also one of the major transmitters of weight across the foot as you walk or run. That's why tremendous stress is placed on the plantar fascia. (See article on Ligament Laxity and also Tensegrity).

A common misunderstanding is that the pain in the plantar fascia is caused by an inflamed tendon and therefore is referred to as plantar fasciitis. Medical research has found that inflammation lasts only for 100 hours. After 100 hours, the inflammation will lead to small accommodative tears in the tendon or muscle. This is referred to as an **Osis**. Since this is what actually happens, it is more correct to refer to plantar fasciitis as **Plantar Fasciosis**. I will be doing that in the following explanation.

**Plantar Fasciosis** occurs when the plantar fascia becomes inflamed and degenerative (worn out). This pathology makes normal activities quite painful. Symptoms typically worsen early in the morning after sleep or during the day after rest. At that time, the plantar fascia is tight so even simple movements stretch the contracted plantar fascia. As you begin to loosen the plantar fascia by standing, the pain usually subsides, but often returns with prolonged sitting. The reason for this is that the tendon of the plantar fascia starts to heal as soon as weight is released from it but will tear and be painful when you stand and stretch the tendon.

Heel spurs form in some patients who have plantar fasciosis, and tend to occur in patients who have had the problem for a prolonged period of time. While about 70 percent of patients with plantar fasciosis have a heel spur, X-rays also show about 50 percent of patients with no symptoms of plantar fasciitis or fasciosis will also have a heel spur.
Treatment of heel pain is not always the same as treatment of plantar fasciosis because the problems may not be the same. It is absolutely imperative that a proper diagnosis as to the cause of the pain is made. If the diagnosis is an acute inflammation of the heel bone due to injury or improper shoes, then short-term rest and inflammation control might be instituted. Here are some treatments you can try to help reduce the pain of the symptoms related to plantar fasciitis and heel pain:

**Rest**
The first treatment is avoiding activities or footgear that aggravate the symptoms. For example, taking a few days off of jogging or prolonged standing will rest the painful foot. Just resting, may help eliminate the most severe pain and will allow the body to heal itself.

**Ice Packs**
Icing may help diminish some of the symptoms and control the heel pain. Icing is especially helpful after an acute exacerbation of symptoms. The problem is that this is a short-term fix and does not address the cause of the problem.

**Exercises and Stretches**
Exercises and stretches are designed to relax the tissues that surround the heel bone. Some simple exercises performed in the morning and evening often help patients feel better quickly. The Academy of Sport Medicine has found that runners who do excessive stretching tend to have a higher incident of accidents. The reason for this is simple---muscles are like twine and not like a rubber band. That is that they twist open or shut and don’t stretch like rubber.

**Anti-Inflammatory Medications** help control pain and decrease inflammation. Over-the-counter medications are usually sufficient, but prescription options are also available. Once again, this is an over-simplification of essential medical science. Be aware that *Non-Steroidal Anti-Inflammatory Drugs*, known as NSAID’s, cause more trips to the ER then any other medications.
Shoe Inserts and in this case custom orthotics maybe the key to successful treatment of heel pain. The shoe inserts often permit the foot to function in its normal biological form. The purpose of the orthotic is to bring the ground to the foot and dampen the shock waves created by the foot and body hitting the ground at your weight times 2.5 pounds per/square inch.

Night Splints are worn to keep the heel stretched out when you sleep. They are suppose to prevent the arch of the foot from becoming contracted at night, and is hopefully not as painful in the morning. In my experience, I have found night splints rarely help the tissue heal.

These treatments alone will not cure the plantar fasciitis/fasciosis pain in most patients. Be forewarned that the symptoms will not resolve quickly. If you wait long enough, Mother Nature will heal the problem in most people within about three months, and over 90 percent within one year.

What about the use of Cortisone? If the pain does not resolve, an injection of cortisone can decrease the inflammation of acute plantar fasciitis. However, many physicians do not like to inject cortisone around the heel because it can cause potentially serious problems. Two common and serious problems are fat pad atrophy and plantar fascial or muscle rupture. Both problems occur in a small percentage of patients, but they can worsen heel pain symptoms. It will also cause bone atrophy and if you are a diabetic, it will elevate your blood sugar.

Extracorporeal Shock Wave Therapy A newer treatment for heel spurs and chronic plantar fasciitis is being investigated. This treatment is called extracorporeal shock wave therapy or ESWT. It uses energy pulses to induce micro-trauma to the tissue around the heel spur. This micro-trauma is thought to induce a tissue repair process by the body. ESWT has been recommended in patients who have failed the previously mentioned treatments, and are considering surgical options. I have tried this treatment on 30 patients, and it has only helped six (6). It is expensive, not covered by insurance and generally not worth the effort.
How can I prevent recurrence? To prevent the recurrence of heel spur symptoms after treatment, proper fitting footwear is essential. Many people use shoe inserts to relieve pressure over the tender area. Custom orthotics can also be made if there appears to be a problem with the mechanical structure of the foot. It is also important to continue your prescribed stretching and exercises. All exercises are not the same and some will undo the good results that you already have achieved. Exercises may help maintain the flexibility of the foot and prevent the pain from returning, but only if it is the correct one for your body type.

The Pain Doesn’t Get Better, Now What? What if the symptoms of the heel spur do not resolve? In a small number of cases (usually less than five percent), you may not experience relief after trying the recommendations listed above. It is important that conservative treatments (such as those listed above) be performed for AT LEAST a year before considering surgery. Time is important in curing the heel pain. If conservative treatments fail, I always revisit my initial treatment plan and diagnosis. Further tests such as Nerve Conduction, Bone Scans, MRI or metabolic evaluation are essential. If all of these confirm my original treatment plan, then we might want to consider an operation to loosen the plantar fascia, called a plantar fascia release.

Tarsal Tunnel Syndrome Because the diagnosis of heel spurs can be confused with tarsal tunnel syndrome, most surgeons advocate performing a tarsal tunnel release along with the plantar fascia release. This surgery is about 80 percent successful in relieving pain in the small group of patients who do not improve with conservative treatments. The problems associated with all surgery must still be considered. I don’t advise this course of treatment unless it is absolutely necessary. It should only be done by a surgeon who is well trained and up to handling the unexpected complications.