

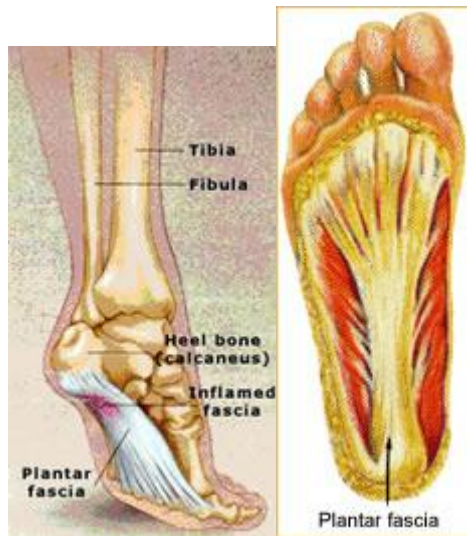
Plantar Fasciitis

What is Plantar Fasciitis:

Plantar Fasciitis is one of the most common causes of heel pain in Los Angeles and globally. The Foot and Ankle Institute is a world leader in the research and treatment of plantar fasciitis with complete diagnostic services, non surgical and state of the art surgical options for plantar fasciitis treatment.

Anatomy of the Plantar Fascia:

The plantar fascia is a strong ligament on the bottom of the foot. It begins at the heel bone as one band and runs the along the entire bottom of the foot fanning out towards the toes. The plantar fascia is an actual continuation of the Achilles tendon and helps transfer the pull of the Achilles to the foot during walking.



Problems with the Plantar Fascia:

The plantar fascia acts to support the inside arch of the foot. As one walks, the plantar fascia will stretch and contract as the weight is put through the foot. The problem occurs when the ligament is under constant stress and stretch such as with flat feet or tightness of the fascia. The ligament will begin to tear off from its origin in the heel bone. After several small tears develop inflammation of the area develops leading to the name plantar fasciitis (-itis means inflammation).

What is a Heel Spur and does it matter:

A heel spur is extra bone on the bottom of the heel associated with the constant over pull of the plantar fascia on the heel. When there is a pulling on a bone attachment from a ligament or a tendon, bone will respond by growing in the direction of the pull. In the case of the plantar fascia, when the ligament is tight and on a constant stretch for many months and years a bone spur can grow in the area. The bone spur itself is not painful or problematic in most cases. It is when the plantar fascia begins to tear from the area that the symptoms occur. One can have a very large heel spur and no plantar fasciitis or pain, and one can have a great deal of pain and no spur at all. The spur is simply a measure of the length of time the ligament has been short and tight.



X-ray showing small heel bone spur.



X-ray showing large heel bone spur.

Symptoms of Plantar Fasciitis:

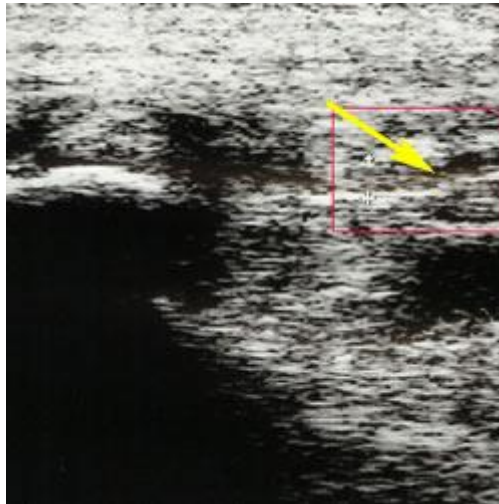
The pain of plantar fasciitis is most commonly felt in the bottom of the heel towards the inside of the foot. Patients describe the pain as deep and achy and sharp at times. The

main pain is with first steps after resting or not being on the foot for some time. With walking, the pain gets better and may even go away. The reason for pain with first steps is that the fascia gets tight overnight or with sitting and the first steps cause a severe stretch and tearing that causes pain.

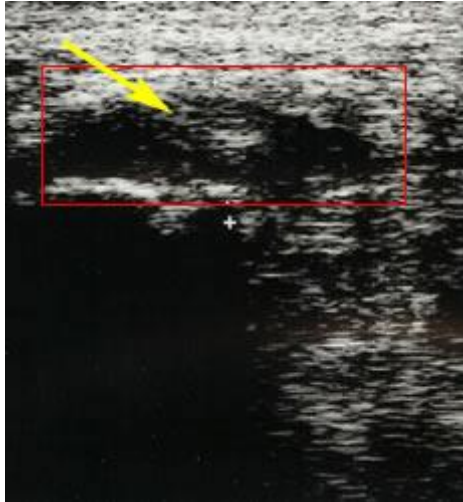
There should be no burning pain or sharp nerve pain with plantar fasciitis and there should be no deep aching pain. Often, plantar fasciitis is confused with a pinched nerve or **stress fracture** of the heel.

Diagnosing Plantar Fasciitis:

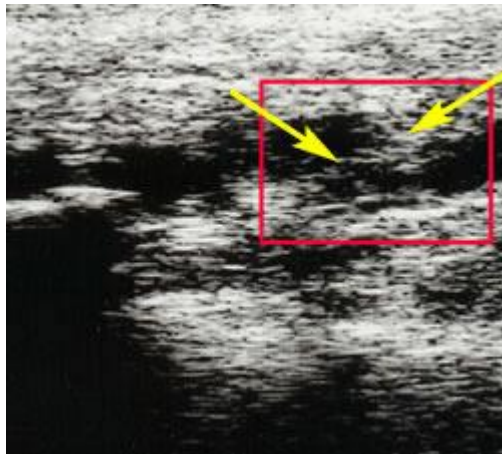
The most important process in the treatment of plantar fasciitis is the initial diagnosis. To often, the diagnosis is not correct or a guess is made and the proper treatment is not started. The Foot and Ankle Institute is a world leader in the diagnosis and treatment of plantar fasciitis with state of the art equipment. Many of the diagnosis and treatments for plantar fasciitis have been studied and perfected at our Institutes. Diagnosis is made with x-rays to make sure there is no fracture or tumor of the region. Ultrasound is used to check the fascia itself and make sure there is no tear and check the level of scar tissue and damage. Neurosensory testing, a non painful nerve test, can be used to make sure there is not a local nerve problem if pain is thought to be nerve related.



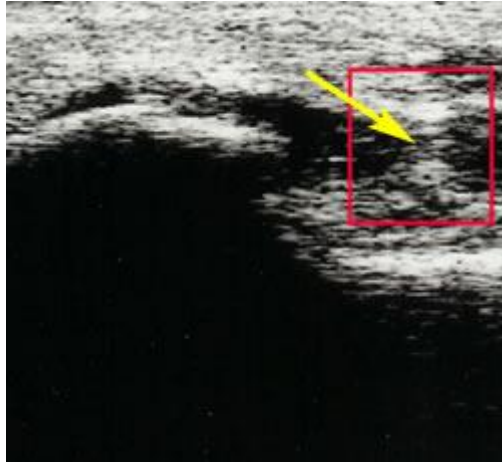
Normal fascia (Normal fascia thickness in box with yellow arrow pointing to fascia)



Thick fascia and spur noted on ultrasound
(Thick fascia in boxed region with arrow
pointing to thick fascia and spur)



Complete fascia tear (fascia seen in box
with overlap with yellow arrow pointing to
torn ends)



Partial fascia tear (Stretched fascia seen in box region with yellow arrow pointing to partial tear region)

Plantar Fasciitis Conservative Treatment Options:

Conservative treatments will heal the plantar fasciitis 90% of the time. The initial conservative therapy will consist of a combination of ice therapy, stretching exercises to improve flexibility (especially in the mornings), anti-inflammatory medications, and physical therapy. Most patients will also need custom molded [orthotics](#) to help control the motion in the foot and the arch in order to take the strain off the plantar fascia. If the pain continues, a cortisone injection may be used to calm the severe swelling and pain. There may be the need for the use of a night splint to hold the fascia stretched out at night.



Athletic shoe orthotic



Dress shoe orthotic

Plantar Fasciitis Platelet Rich Plasma Therapy:

In cases of chronic plantar fasciitis that is not responding to conservative care, a great in-office option is platelet rich plasma injection. The idea of platelet rich plasma (PRP) injection is to allow the growth factors in the blood to be used to cause an inflammation process in the injured tissue to allow an increase in the healing response of the body. The blood is drawn and spun down. Under ultrasound guidance and local anesthesia in the office, the injection of the PRP is placed in the damaged tissue. This allows an increased growth factor release in the area that sparks the healing process.



Blood product drawn and spun down ready for extraction of the platelet rich plasma



Platelet rich plasma injection ready for plantar fascia injection therapy

Plantar Fasciitis Shockwave Therapy:

If conservative therapies fail after several months, shock wave therapy may be suggested. Shockwave therapy is a non invasive procedure done in the office that allows for new blood to come to the region of fascia damage and help with healing of the fascia. Results have been excellent with over 70% of patients having relief with only one treatment. Shockwave therapy does take some time to work and results will be fully seen over a period of 3 months after treatment.



Shockwave therapy setup (*This is a non painful test with no need for general anesthesia of operating room*)



Shockwave therapy machine

Plantar Fasciitis Surgical Treatment:

Surgery is reserved for chronic cases of plantar fasciitis that do not improve with all types of conservative care. The surgical technique chosen will depend of the severity of the fasciitis.

Plantar Fasciitis Topaz Surgery:

The first and less invasive surgical technique is called Coblation Surgery (cool ablation) using a [Topaz](#) probe. [Topaz](#) coblation surgery is a minimally invasive procedure that involves controlled burning of multiple tiny holes through the skin and through the plantar fascia in the heel. The ablation holes irritate the fascia enough to turn a chronic problem into an acute problem and increases circulation to the damaged area. Small nerve fibers are also calmed down decreasing pain. The patient's own body then increases the natural healing properties which will begin to heal the newly injured ligament. This new acute injury to the ligament will be healed in a controlled environment with the foot immobilized in a boot for 2- 4 weeks. Return to walking and full activity is immediate after surgery and showering is allowed on day two after surgery.



Click above to watch a video of a Topaz surgical procedure



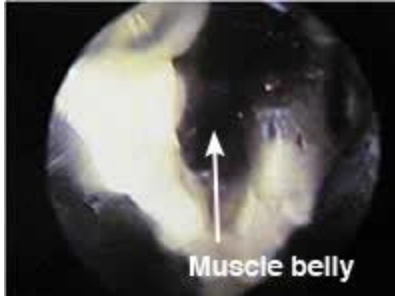
Picture showing initial holes being made through the skin in the heel with a pin.



Topaz procedure being performed for the treatment of chronic plantar fasciitis and heel pain

Plantar Fasciitis Endoscopic Plantar Fasciotomy Surgery:

If all forms of care fail including [Topaz](#) minimally invasive surgery, a fascia release surgery is used to release of the tight fascia. The Foot and Ankle Institute has perfected an endoscopic (camera guided) approach for fascia release to allow rapid healing and limited downtime.



Picture showing the Plantar Fascia after it has been cut. Notice the muscle belly showing through.



Picture showing the Plantar Fascia through the camera of an arthroscope.

In cases of nerve entrapment and scar tissue, the nerve to the heel may need to be freed during surgery in order to remove a burning pain. This is done usually at the same time as the fascia release but through a small open incision.