



Plantar Fasciitis: Injury and Treatment

Plantar fasciitis is one of the most common conditions to affect the feet. The plantar fascia is a tough band of tissue that runs from the heel of the foot to the base of the toes along the bottom of the foot. With each step the plantar fascia tightens and relaxes like a bowstring and this repeated pressure along with other factors can cause pain to result.

A sharp pain at the bottom of the heel is the most common complaint especially in the morning. In the early stages the pain may decrease or even go away with continued walking. However, left untreated it will eventually hurt all day especially with walking or standing tasks.

There can be many possible causes of plantar fasciitis and more than one cause may contribute to the pain experienced. Muscle tightness of the calf and foot, improper footwear (sandals and flip flops in the summer), improper athletic training, stress on the arch (new activities such as skiing or skating), improperly fitting shoes and over use at work are all possible causes of plantar fasciitis.

Treatment of plantar fasciitis includes use of physical modalities such as ice massage and ice roller, stretching of the calf and plantar fascia, deep friction massage and physical therapy treatments such as ultrasound, phonophoresis and iontophoresis. Gel heel cups available at most pharmacies and grocery stores are also very good at relieving stress over the heel. Anti-inflammatory medication such as Ibuprofen (Motrin, Advil) may help reduce pain and inflammation; stronger medications such as Celebrex may also be helpful but require a physician's prescription. Night splints so named because they are worn at night while in bed may help to passively stretch the plantar fascia and decrease stress at the site of inflammation. These splints are usually prescribed by a doctor and may be obtained at Durable Medical Equipment (DME) companies, the cost may not be completely covered by your insurance. Arch supports may also help but should be prescribed by a podiatrist or other health professional that can adequately evaluate your foot and obtain custom orthotics. In the event none of the above activities help or are not completely successful in relieving your pain your physician may elect to use a cortisone injection to help decrease pain, place you in a walking boot and limit your activity. Chronic cases that do not respond to normal therapies may be appropriate for more invasive procedures such as a surgical release or more commonly accepted these days ESWT or Extracorporeal Shock Wave Therapy which is noninvasive.

For most people a simple stretching program along with proper use of modalities can cure your pain or significantly reduce it. Below is a program that may be of benefit.

Evaluation Based Rehabilitation Protocol for Plantar Fasciitis: Modified De Maio and Drez Protocol w/DTM

	Weeks 1-4	Weeks 4 to 8	Weeks 8 to 12
Evaluation: If your physician feels certain you have plantar fasciitis then beginning the treatment program does not absolutely require a physical therapy evaluation. However, some insurances won't allow testing or more advanced procedures without first having documented physical therapy for a given period of time.	<ul style="list-style-type: none"> •Confirm fascial origin of pain •Evaluate for contributing factors: <ul style="list-style-type: none"> ◆Overuse / training errors ◆Biomechanics of foot (flat feet) ◆Status of Achilles tendon (tight) ◆Shoes (cushioning, appropriate fit) ◆Body Habitus ◆X-ray ◆Rule out inflammatory arthritis, nerve entrapment, stress fracture 	<ul style="list-style-type: none"> •Persistent pain •Confirm proper fit of orthotics •Confirm diagnosis with review of history and physical exam •Review treatment regimen and assess patient compliance 	<ul style="list-style-type: none"> •Persistent pain •Medical workup •Bone Scan •Possible EMG if nerve entrapment suspected •Rheumatoid profile lab and workup to rule out inflammatory arthritis •Repeat Xrays
Treatment	<ul style="list-style-type: none"> •Use of ice massage of insertion •Deep Tissue Massage •Prescribe NSAIDS unless contra indicated •Modify Shoe •Fit soft viscoelastic heel inserts •Apply soft or semi rigid orthotic if needed for biomechanical correction •Perform Achilles tendon and plantar fascia stretching •Reduce Weight •Modify activity (stop running for 6 weeks) •Maintain cardiovascular fitness (e.g. swimming) 	<ul style="list-style-type: none"> •Assess need for steroid injection (note risks) •Perform Ice Massage •Taper NSAIDS •Establish a maintenance program •Maintain fitness program •With improvement, gradually return to previous activity •Review training errors again with corrections. 	<ul style="list-style-type: none"> •Use night splinting to decrease plantar flexion at night •May use short leg walking cast for 4-6 weeks (or removable walking boot) for highly compliant patient; removed only for bathing). •Use steroid injection (see risks). •In patient whose symptoms diminish, return to 4-8 week protocol •Persistent symptoms for 6 months may require operative intervention
Goals	<ul style="list-style-type: none"> •Decrease inflammation •Relative Rest •Correct underlying contributing factors •Increase flexibility 	<ul style="list-style-type: none"> •Return to previous level of function •Prevent recurrence 	<ul style="list-style-type: none"> •Confirm diagnosis