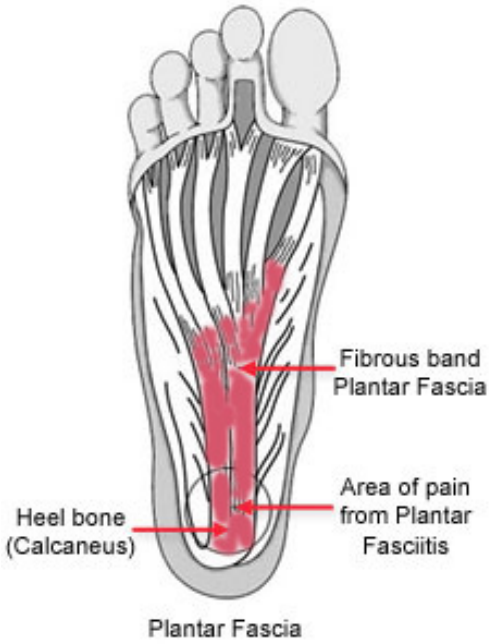
Plantar Fasciitis

Background:

The Plantar Fascia is a band of tissue on the bottom of the foot that extends from the heel bone, the calcaneus, towards the base of the toes and is responsible for maintaining the longitudinal arch of the foot. Plantar Fasciitis can more commonly be referred to as heel pain or pain on the bottom of the foot. This injury is very common in middle-aged people as well as young people that are very active and on their feet constantly, such as athletes and soldiers.



Cause:

Plantar Fasciitis is typically an overuse injury, similar to patellar tendonitis or tennis elbow. Often found in running athletes, plantar fasciitis can manifest from increasing training intensity and running on hard surfaces. In many cases the plantar fascia, on the bottom of the foot, will be too taught which causes the tissue to pull on its' attachment site at the heal bone and create inflammation in the area. Straining the plantar fascia is another way that plantar fasciitis can develop.

A patient can be predisposed for getting plantar fasciitis if their:

-Feet roll inward while walking (over pronation)

-Arch is too high/low
-Active on hard surfaces for extended periods of time
-Overweight
-Wear improper fitting shoes
-Have tight calf muscles

Examination:

This injury is accompanied by very specific symptoms that the injured person will experience. Pain is often much worse in the morning or after being sedentary for a long period of time. Throughout the day the pain will often start to diminish as the plantar fascia begins to loosen and become less stiff. Eventually, the pain may cause a person to change the way they walk which may lead to developing problems in the back, hips, knees, or feet.

Treatment:

The treatment for plantar fasciitis is done in stages. If the patient is not gaining any benefit from one of the stages they will progress to the next to see if that will fix the problem. The stages start conservatively and progress to more drastic interventions. The contents of each stage are as follows:

Stage 1: Anti-inflammatory medications, shoe modifications, limit activities, stretch (toe scrunches/stretches, calf stretches)
Stage 2: Injection of hydrocortisone, use arch support
Stage 3: Cast the injured foot, night splint
Stage 4: Undergo surgery to release the tightness of the plantar fascia

Athlete Recovery:

The recovery time for this injury will be based on how the athlete is responding to the different treatments that are done in each stage. Also, since this injury has a gradual onset the recovery time will also depend on how much damage is done to the ligament before it is given rest and the opportunity to heal.

- If the athlete begins treatment at the beginning signs of plantar fasciitis then recovery time can be around 3-5 weeks. If pain is persistent after the 3-5 weeks then a longer recovery time should be expected because of the more serious treatments that will need to be done.
- While hydrocortisone injections make the area feel great after they are administered, they are only a temporary fix. These injections may make the

athlete feel better for a time ranging from a couple weeks to a couple months.

- Casting the area will cause a longer recovery time because after the cast is removed the athlete will need to go through weeks of rehabilitation in order to strengthen the area and increase the range of motion. An athlete can expect to be out of competition for up to 3-4 months if this is the case.
- If surgery is needed, the athlete will have already been experiencing symptoms of plantar fasciitis for 6-12 months and will most likely not have been competing during most of that time. Running and jumping is not allowed until 3 months after the surgery has been completed. In total an athlete could expect to be out for 1-2 years in this extreme case. Only 5% of all plantar fasciitis cases require the need for surgical interventions.

Prevention:

Plantar Fasciitis is an injury that is much easier to prevent than it is to cure. In order to prevent this injury it is important to do a couple major things. First, maintaining a healthy weight is crucial. The forces from extra body weight will transfer through the feet and cause stress on the plantar fascia causing it to stretch, thus creating plantar fasciitis. Another prevention tool that should be utilized is wearing supportive shoes. Athletic shoes that contain a deep heel cup for support are recommended. If these are not the type of shoes that you wear regularly, at the first sign of heel pain it is suggested that you switch to the shoes until pain is gone. Lastly, it is important to cycle the shoes that you wear after a period of time. The rule of thumb is that the pair of shoes you wear should be changed when they have been used for 500 miles of walking, for the everyday person, and 300 miles, for athletes and runners.

Athletes At Risk:

As stated before, the athletes most at risk to experience plantar fasciitis are running athletes. Track and Field, Football, Soccer, and Basketball are common sports that may elicit this injury. The poorly fitting/padded shoes, playing surfaces, and amount of bounding all play a roll for this predisposition. Also, athletes that do not make a gradual return to sport after the off-season or after an injury may experience this pathology. For these athletes it is important to implement a progressive approach when returning to their sport.

Professional Athletes With Plantar Fasciitis:
Albert Pujols (MLB), Joakim Noah (NBA), Pau Gasol (NBA), Antonio Gates (NFL)

Relevant Articles:
Plantar Fasciitis Knocking Top Athletes Off Their Feet
http://www.usatoday.com/story/sports/2013/08/20/albert-pujols-plantar-fasciitis/2679445/

Plantar Fasciitis -- The Most Maddening Injury in Sports
http://sportsillustrated.cnn.com/2011/writers/the_bonus/05/12/plantar.fascittis/

Academic Journal Articles:
Plantar Fasciitis Treatments
http://www-ncbi-nlm-nih-gov.ezproxy.hsc.usf.edu/pmc/articles/PMC3951039/

Plantar Fasciitis: Evidence-Based Review of Diagnosis and Therapy
http://www.aafp.org/afp/2005/1201/p2237.html

Plantar Fasciitis
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3687890/