

## Plantar Fasciitis

All or part of the sinew which helps maintain the arch of the foot by acting as a tie-rod has become inflamed and sore.

### (a) Definition and Symptoms of Plantar Fasciitis

*Plantar fasciitis* is inflammation of the *plantar fascia* of the foot. See the illustration below.

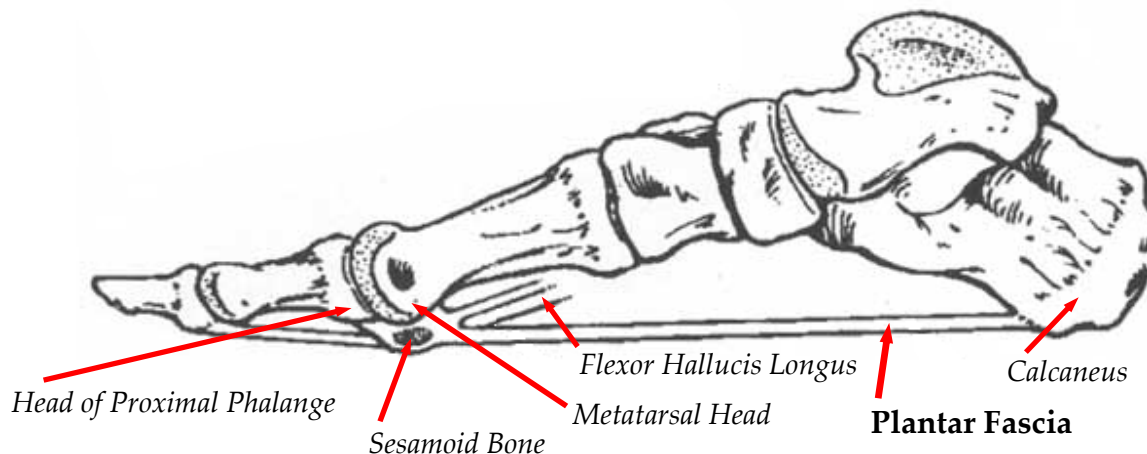
It may be localised to the attachments of the fascia to the bones at either end, or it could be diffuse, being spread over the entire fascia. This is called *Policeman's Foot*.

If the problem remains local (for example at the attachment to the *calcaneus bone*) bone spurs may develop. If the problem persists over the entire plantar fascia for long enough, the arches may collapse. The common occurrence of this problem in policemen during the days when they walked a "beat" may explain the origin of the derogatory term "flatfoot" for police.

### (b) Description of the Plantar Fascia

The *plantar fascia* (sometimes called the *plantar aponeurosis*) is a broad fibrous and elastic band of tissue which extends from the medial part (inside) of the *tubercle* (bony lump) of the *calcaneus bone* to the heads of the proximal *phalanges* (toe bones) of the toes, on its way attaching to the heads of the *metatarsals* (foot bones) and, in the case of the 1<sup>st</sup> metatarsal, to the *sesamoid bones* beneath it. A sesamoid bone is a floating bone not connected to other parts of the skeleton by a joint in the usual way. Rather it is embedded within a tendon. The patella (kneecap) is an example of a sesamoid bone.

### The Plantar Fascia of the Foot




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The above picture is adapted from a file found at <http://en.wikipedia.org/wiki/File:PF-PlantarMove.jpg>. The original copyright owner of this picture has released it into the public domain.

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### (c) Role of the Plantar Fascia

The plantar fascia has two key roles in the foot.

1. It serves as a tie-rod from the front to the rear of the foot, and along with the muscles, contributes to the preservation of the arch of the foot.
2. It acts as a spring, elongating about 9-12% during footfall, conserving energy which is released during the push-off phase of gait.

## (d) Causes of Plantar Fasciitis

A variety of factors contribute to the development of plantar fasciitis.

1. Firstly overuse of the foot. A sudden increase in stress on a foot, for example in a person who commences doing a lot of walking or running to get fit, or who having had a long lay-off, recommences training.
2. Secondly, unresolved problems further up the leg which then forces the foot to take on more than its fair share of the elasticity required to absorb the shock of footfall.
3. Excessive weight bearing on the forefoot (as a result of faulty posture) combined with reduced *elastic resilience* (capacity of the tissue to stretch and spring back) of both the foot and the lower leg. To a lesser degree reduced elastic resilience in the upper part of the leg may also be involved.
  - a. The reduced elastic resilience of the tissue is due to *myofascial hardening*. The *myofascia* is a connective tissue “stocking” which encases every muscle, and it is meant to be soft, elastic and pliable like the inside bladder of a football, but it can become hardened and more like the leather case of the football.
  - b. The lack of elasticity and tension in the leg muscles, plus the postural faults all place extra pressure on the plantar fascia which may become inflamed as a result.

## (f) Treatment of Plantar Fasciitis

Treatment is the same whether the problem is general or local.

Although it is uncomfortable, icing the area twice per day followed by application of a healing cream helps accelerate healing. If ice cannot be tolerated use heat.

However giving consideration to the initial causes of the problem, if recurrence is to be prevented your practitioner may balance your hips and provide postural education, and release the muscles and fascia of the upper leg, lower leg and foot (depending on what is required).