

# PLANTAR FACIITIS AND PLANTAR FASCIOPATHY

By Emily Donker  
intraining podiatrist

The Plantar Fascia is a thick, fibrous band of connective tissue which acts to attenuate shock and disperse force during weight-bearing and gait, as well as to provide support and maintain integrity of the medial longitudinal arch of the foot. Unlike other soft-tissue structures, the Plantar Fascia is not very elastic and has only a limited capacity to stretch and elongate, and thus is prone to injury.

Plantar Fasciitis (or Fasciopathy) is one of the most common foot complaints seen by podiatrists and physiotherapists. The term 'Fasciitis' specifically refers to acute injury presentations, whereas 'Fasciopathy' is a more generalised term describing injury to the fascia, which also encompasses chronic pain. These injuries are characterised by inflammation and pain, typically surrounding the fascia's insertion point at the medial heel, but sometimes also through the arch of the foot. Rupture can also occur, although this is very uncommon due to the strength and integrity of the Plantar Fascia.

Sufferers will usually complain of sharp, stabbing pain that is worst in the mornings and after periods of inactivity. During rest, soft tissue structures cool down and tighten, so they're over-stretched with excessive load on return to activity. Exercise and extended periods of weight-bearing and walking will also usually aggravate symptoms due to increased load and strain through the aggravated Fascia. Pain may be tolerable during activity, but worse afterwards or with fatigue.

In chronic injury presentations, there is typically less inflammation and the pain is more inconsistent. Chronic pain without appropriate treatment and resolution will not only prolong recovery time, but can also increase the risk of developing other injuries due to compensation.

Plantar Fasciopathy affects both active and less-active individuals and there are many causative factors to consider. Injury develops due to excessive loading and increased traction of the Plantar Fascia at the insertion. Over-use is the most commonly cited reason for injury development – walking and standing for extended periods of time increases load on the Plantar Fascia. Athletes in particular need to consider their daily activities in addition to their training load (volume and intensity). Footwear also plays a significant role – both during exercise and day-to-day. Wearing shoes with insufficient support and cushioning will increase strain on the Plantar Fascia. Ground surface can also influence loading, with harder surfaces greatly increasing the likelihood of Injury development due to the increased requirement for shock attenuation. For these reasons, job and daily activity changes are common reasons for injury onset, but they're often overlooked. Excessive pronation (rolling in) is also a common contributor towards injury as it increases stretch on the Plantar Fascia.

Other factors such as age (soft tissue becomes less elastic with age and more prone to injury) and being overweight (more weight will increase strain and shock attenuation requirements), also increase injury risk. Biomechanical factors also influence injury risk and should be considered in all cases, most particularly for athletes. Amongst others, tight calves and reduced 1st MPJ range of movement are common contributors. Clinical history and symptoms are usually sufficient to provide an accurate diagnosis of Plantar Fasciopathy or differential diagnoses. However, in some cases imaging is necessary to rule out risk of more serious injury such as calcaneal stress fracture, or to determine the severity of injury.

A simple, multi-faceted treatment approach will provide significant benefit and resolution in a vast majority of cases. Occasionally, more serious investigation and treatment options are necessary. Successful treatment requires symptomatic treatment to relieve pain and inflammation, but also should address causative factors to reduce the risk of return or repeat injury.

During the acute phase of injury, relative rest and offloading are essential to reduce load and strain through the Plantar Fascia. Non weight-bearing and low impact activities such as swimming, water running, cycling and upper-body strength activities are great for maintaining fitness whilst moderating load. Running and other high impact exercises such as skipping and body attack/pump classes will typically aggravate symptoms and should be avoided or limited. Avoiding barefoot at all times, and wearing supportive, cushioned footwear (running shoes are ideal) as much as possible is highly recommended. Cryotherapy (icing) should be done religiously during the acute phase to provide pain relief and reduce inflammation. Immersion icing is most beneficial if tolerable.

Foot strapping can provide temporary pain relief and assist in load moderation, but should only be used short-term. Good strapping should provide immediate relief and can indicate the benefit of implementing more permanent in-shoe modifications or orthotics to address overloading issues. Low Dye, Copelands or modified Copelands are the most commonly used strapping techniques. Wearing a Plantar Fascia compression sleeve will provide similar benefit and can be used long-term. Offloading is encouraged by support, and inflammation and pain reduced by promoting improved blood flow to the area. Gentle stretching and range of movement exercises will assist in maintaining or increasing elasticity through the Plantar Fascia and should therefore reduce severity of pain symptoms. In most cases releasing muscle tension through the calves and plantar foot is also beneficial.

Ongoing Long-term treatments should address contributing biomechanical factors and other risk factors to reduce injury risk. There is considerable research available in support of orthotics to treat Plantar Fasciopathy, however their implementation should always be part of a multi-faceted treatment approach that also included symptomatic relief and strengthening. When properly implemented, these treatment strategies should provide considerable relief of acute symptoms within a relatively short time-frame (1-2 weeks). Unresolved pain can be debilitating and is both mentally and physically damaging because it can affect both training and quality of life. If you're struggling with foot pain, visit one of the podiatrists at intraining Running Injury Clinic for a full biomechanical and injury assessment.



ADAM