



Central West Orthopaedic and Sports Physiotherapy

Blacktown Suite 203, 30 Campbell Street, Blacktown NSW 2148 Tel (02) 9672 3511

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the *rub*

heel pain

Plantar fascia heel pain is a common problem in the adult population. The condition occurs in a wide age range and is present in both sedentary and athletic individuals.

What is the plantar fascia?

The plantar fascia functions to provide static support of the longitudinal arch and dynamic 'shock' absorption when weight bearing. Heel pain arising from inflammation of the plantar fascia is an overuse condition of the plantar fascia at the attachment to the calcaneus. The plantar fascia is loaded when a person is weightbearing with the load distributed through the longitudinal arch of the foot.

What patients usually report

Patients often first notice 'niggly' pain symptoms when beginning weight-bearing activities. These initial symptoms decrease or resolve as the patient continues with the activity or 'warms up'

The classic sign of plantar fasciitis pain is when a patient reports the worst pain occurring in the morning when first weight bearing. The pain generally improves during the day.

Plantar fasciitis is often associated with

- Calf muscle tightness
- Obese middle-aged women
- Young male runners
- Poor intrinsic muscle strength
- Biomechanical abnormalities of the foot, in particular excessive pronation (low arches or flat feet) or very high arches (pes cavus)



Tenderness is usually centred on the medial attachment of the plantar fascia (above) and may extend along the medial border along the plantar fascia (below).



On Examination

- There is usually a point of maximal tenderness at the medial attachment of the plantar fascia to the medial tubercle of the calcaneus
- The pain may extend along the medial border of the plantar fascia
- The pain may be reproduced when the plantar fascia is stretched. This is either with passive dorsiflexion of the toes and/or by having the patient stand on the tips of the toes

Causes of Plantar Fascia Pain

The exact cause of plantar fasciitis remains unclear. The most common theory for the development of the condition is the repetitive partial tearing (microtrauma) and associated chronic inflammation of the plantar fascia at its insertion on the medial tubercle of the calcaneus. Ongoing microtrauma and repetitive microtears can lead to degeneration of the plantar fascia at the calcaneal insertion. Settling down the pain and inflammatory symptoms and treating the underlying soft tissue and biomechanical problems is often a challenge to manage clinically.

For further information please do not hesitate to contact our rooms at Blacktown on 9672 3511.

the rub

Heel Spurs on X-rays: What is the interpretation?

Calcaneal spurs are bony osteophytes and can be quite striking to look at on patient's X-rays. Spurs can be found on both feet when only one foot is symptomatic. 15-20% of the general population have heel spurs which are asymptomatic. Spurs have not been causally related to pain. The finding of a calcaneal heel spur is not considered an indication for surgery.

The available treatment options are:

- NSAIDS
- Cortisone injection therapy combined with biomechanical correction
- Weight reduction as indicated
- Stretching exercises for the calf muscle and specifically to the plantar fascia
- The application of ice for symptomatic relief
- Intrinsic foot muscle strengthening exercises
- Plantar fascia taping for symptomatic relief, which is an indicator for the likely effectiveness of orthotic shoe inserts
- Custom-made or prefabricated shoe orthotics and inserts for biomechanical corrections
- Shoe modifications
- Activity modification
- Massage therapy such as transverse frictions
- Manual therapy to mobilize the subtalar joint
- Night splints

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in a nutshell

A comprehensive treatment program includes:

- strategies for symptomatic relief
- correction of biomechanical faults
- a tissue specific stretching program

Night splints can be considered if symptoms persist.



Anti-Pronation Taping

Plantar fascia taping is a useful treatment strategy for symptomatic relief and also serves to establish whether prefabricated and custom made shoe orthotics and inserts may be useful. An immediate and substantial reduction in pain and an improved ability to perform painful activities is seen as an indicator of a high probability of success with heat mouldable anti-pronation orthotics.

What About Surgical Management?

The vast majority of patients have a resolution of symptoms within a 10-12 month period. Intractable plantar fasciitis can be treated surgically. In the small percentage of patients that do not respond over a period of at least 12 months surgical treatment is considered (Davies et al 1999). The outcome following surgery isn't guaranteed. Cortisone injection therapy can also be undertaken via day surgery.

Some Interesting Research Findings to Note:

Tissue specific non-weight bearing stretching and appropriate shoe inserts are a good treatment strategy: In a recent multicentre clinical trial Pfeffer et al (1999) reported that the use of a prefabricated shoe insert in combination with a stretching program was a most effective treatment modality to reduce the symptoms in patients with symptoms of less than 6 months

You need to be specific with the stretches that are prescribed: In a recent randomised controlled clinical trial non-weight bearing stretches that are specific to the plantar fascia were reported to be superior to a program of weight bearing achilles tendon stretching exercises alone for the treatment of heel pain (DiGiovanni et al 2003).

Timing the stretches is important: Patients are usually reminded to complete their tissue specific plantar fascia stretches before getting up in the morning and before standing up after long periods of sitting. This aims to reduce any additional microtrauma to the plantar fascia with weight-bearing

Night splints are a good option, but patient compliance needs to be considered: In a recent prospective randomised outcome study of patients with chronic plantar fascia pain Powell et al (1998) highlighted the effectiveness of night splints. These splints provide a low load prolonged stretch to the plantar fascia, but compliance with these splints can be a problem. The reality of this treatment option is to select patients carefully to obtain maximal benefit. These splints are often used when simpler treatment options have failed.



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