

Plantar Fasciopathy



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Plantar Fasciopathy (PF): acute or chronic pain in the inferior heel at the attachment of the medial band of the plantar fascia to the medial calcaneal tubercle. It has been described as a chronic inflammatory process and may be an overuse injury.

Causes:

- Overstretching fascia
- Prolonged walking/standing on hard surfaces
- Shoes the fit incorrectly or inadequately supportive

Pathophysiology:

- A non-inflammatory process
- Plantar fascia develops microtears, undergoes chondroid metaplasia, matrix calcification, angiogenesis & cycles of collagen degeneration and repair
- There is also vascularisation at the enthesis, connective tissue calcium deposits & disorganized collagen fibers on histological specimens

Presentation

- Gradual onset heel pain - usually gets worse over time
- Nature of pain can be sharp or aching
- Heel pain present with the **first few steps in the morning**
- Heel pain will flare up after long periods of rest/after periods of prolonged standing
- Pain exacerbated by walking bare foot
- Pain will usually subside with activity and return after stopping the activity

Diagnosis

- Clinical diagnosis based on subjective history and physical examination
- Presence of risk factors: women aged 40-60 years, overweight, flat feet, high arch, tight calf muscles/achille's tendon
- **Positive dorsiflexion-eversion test**- pain with dorsiflexion of the ankle joint and eversion of the subtalar joint
- **Positive windlass test** - pain with metatarsophalangeal joint extension

Management

- **Patient education** - Explain nature of PF, advice on pain management; information on how to modify physical activity; how to return slowly to sports & information on how to use the gel heel-inserts
- **Strength training** - high-load strength training - involves single-leg calf-raise with a towel to dorsiflex the hallux
- **Stretching exercises** - includes plantar fascia, Achille's tendon and soleus stretches
- Mobilisations & manipulations - may help decrease pain in some cases when applied to the posterior talocrural joint and subtalar joint respectively
- **Extracorporeal shock wave therapy & strength training** - stimulate neovascularisation and collagen synthesis in degenerative tissues
- Cryotherapy & NSAIDs - application of ice after activity +/- oral or topical NSAIDs for analgesia
- Use of **orthotic insoles**- reduces loading of the plantar fascia when weight-bearing by supporting the medial arch of the foot
- Corticosteroid injections - interrupts plantar fascia inflammation and thickening
- **Weight loss** - reduces mechanical load on plantar fascia



Want to learn more?

With AcePhysio the learning journey doesn't stop here! Take a look at our further reading recommendations below to become an expert in Plantar Fasciopathy:

1. Rathleff MS, Mølgaard CM, Fredberg U, Kaalund S, Andersen KB, Jensen TT, Aaskov S, Olesen JL. High-load strength training improves outcome in patients with plantar fasciitis: A randomized controlled trial with 12-month follow-up. Scand J Med Sci Sports. 2015 Jun;25(3):e292-300.
2. van Leeuwen KD, Rogers J, Winzenberg T, et al. Higher body mass index is associated with plantar fasciopathy/'plantar fasciitis': systematic review and meta-analysis of various clinical and imaging risk factors. Br J Sports Med. 2016;50:972-981.
3. Lou J, Wang S, Liu S, et al. Effectiveness of extracorporeal shock wave therapy without local anesthesia in patients with recalcitrant plantar fasciitis: a meta-analysis of randomized controlled trials. Am J Phys Med Rehabil. 2017;96:529-534.