

PLANTAR FASCIITIS

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What is Plantar Fascia?

It is connective tissue located on the sole of the foot. It is attached to the heel and spans out attaching to the ball of the foot. The plantar fascia helps to create a more stable arch to allow the foot to remain rigid during the toe-off phase of walking and/or running.

What are the symptoms of Plantar Fasciitis?

Pain is usually experienced on one foot and is most often noticed in the morning when first getting out of bed. Pain also occurs with the onset of activity such as walking and running. The pain may decrease as activity progresses and the plantar fascia is stretched out, but it usually returns after resting and then resuming activity. The pain usually occurs in the heel forcing people to walk on the outside of the foot, or to walk with a limp. Usually it is more painful to walk with bare feet than with shoes on.



What Causes Plantar Fasciitis?

There are a number of factors that may contribute to the development of plantar fasciitis. Some of the factors are:

- Change in the duration or type of training
- Ill-fitting or poorly constructed footwear
- Biomechanics i.e. increased pronation at the heel joint; decreased motion at the big toe
- Physical characteristics e.g. high arched foot; leg length discrepancy; tight achilles tendon; tight calf muscles
- Overweight
- Age

What Treatment Options Do I Have?

The key is to try to determine the cause of your plantar fasciitis. Since there may be more than one factor contributing to your injury, it is a good idea to address the easy things first – footwear, for example. Icing 15 to 20 minutes after activity or at the end of the day helps to relieve pain and reduce swelling in the short run.

However, ongoing treatment is very individualized – it depends on the factors that contributed to your condition. The following is a list of the many treatment interventions for plantar fasciitis:

Treatment Options (continued)

- 1. Footwear:**
 - (a) Determine what shoes would be most appropriate for your foot type
 - (b) Determine if your shoes are worn out
- 2. Stretching:**
 - (a) Stretching the calf muscles, the achilles tendon and the plantar fascia 3 to 5 minutes before standing in the morning, and after any period of rest (such as sitting at a desk or driving a car), will help to prevent further injury.
 - (b) Use a night splint to stretch the plantar fascia while sleeping.
 - (c) Taping may help to support and unload the plantar fascia
- 3. Strengthening:**
 - (a) Strengthening of muscles in the lower limb and foot to create optimal muscle balance
 - (b) Strengthening muscles at the sole of the foot to help the plantar fascia support the bones of the foot (picking up marbles with your toes)
- 4. Physiotherapy:**
 - (a) Foot joint mobilization (making sure all the bones in the foot and lower limb are moving optimally)
 - (b) Big toe mobilization (making sure the big toe joint moves enough)
- 5. Analysis:**
 - (a) Analysis of training duration and type
 - (b) Analysis of running/walking mechanics
 - (c) Analysis and treatment of any low back/pelvis/hip dysfunction which may be a contributing factor
- 6. Orthotics:**
 - (a) To help control excessive or prolonged foot pronation
 - (b) To control for improper foot mechanics and reduce compensatory movements (due to pain or limping), to reduce point pressures, to provide shock absorption and to reduce stress on the inside arch of the foot
- 7. Massage Therapy:**
 - (a) Massage of the plantar fascia and the muscles at the back of the leg
- 8. Medication:**
 - (a) Anti-inflammatory medication may be prescribed.
 - (b) In extreme cases, cortisone injections may be recommended.

See back for Stretches



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Stretches:

Perform the following stretches before getting out of bed and during periods of rest:

- **Ankle Rotations**
 - sit with leg outstretched and knee straight
 - make slow controlled circles with the foot
 - draw the alphabet with the toe

- **Arch Stretch**
 - while sitting, bend right knee and place right foot across opposite knee
 - grasp toes with palm of right hand and pull toes and ankle towards shin until stretch is felt
 - never pull past the point of pain, hold stretch for 3-5 minutes

- **Foot Massage**
 - Repeat stretch above and apply a deep pressure while running your knuckles through the arch area of the bottom of the foot

- **Belt Stretch**
 - sit with **back straight** leg outstretched
 - hook belt around toes and pull foot towards you while keeping the knee straight
 - hold stretch for 4 minutes or longer
 - this stretch can be repeated with the knee bent

- **Phone Book Stretch**
 - stand with **back straight** and place ball of right foot on top of a phone book with right heel on the ground
 - take step forward with left foot, keeping right leg straight, and hold for 4 minutes
 - keeping this position, bend right knee slightly and hold for 2 minutes more
 - **keep back straight** through entire stretch