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What is plantar fasciitis?

Plantar fasciitis is probably the most common cause of heel pain in adults. The plantar fascia is a thick band of fibrous connective tissue that attaches to the heel bone, runs across the bottom of the foot and then fans out to connect at the base of each toe. (Figure 1). It provides support for the arch during normal walking, and also acts as a shock absorber during walking and running.

Overuse of the plantar fascia, most commonly during weight-bearing athletics such as running or even extended periods of standing, can cause small, repetitive tears in the fiber that make up the fascia.

The resultant inflammation and swelling produces the pain of plantar fasciitis. Damage is most common in areas where the stress on the connective tissue is greatest and where the fascia is thinnest, as it curves around the back of the heel. Plantar fasciitis is particularly common in older people because the heel fat pad that normally protects the plantar fascia in this region thins with age. Patients with plantar fasciitis typically feel sharp pain in the heel, particularly on rising in the morning and at the beginning of a walk or run, that may also occur with prolonged standing and is sometimes accompanied by stiffness.

Treatments for Plantar Fasciitis include:

- Icing
- Exercises
- Rest
- Steroid Injections
- Orthotics
- Splints
- Use of non-steroidal anti-inflammatory drugs (NSAIDs) to treat pain and inflammation

Exercises are not only effective for the relief of active plantar fasciitis, but also help to minimize recurrence of this painful condition. This information sheet will provide practical instruction in the use of some of these simple exercises.

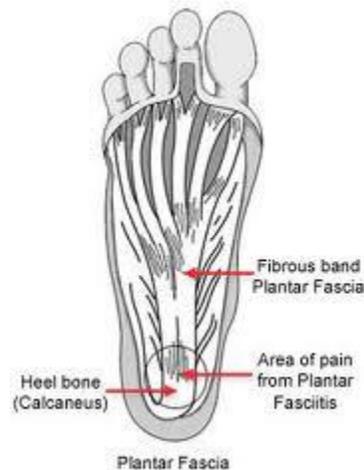


Figure 1.



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Stretching exercises are used to increase the flexibility of the muscles of the thigh and calf and of the plantar fascia itself. Tightness in the muscles of the leg can result in disproportionate stress being applied to the plantar fascia during walking and running, increasing the risk of injury. Stretching exercises for the plantar fascia itself can increase the flexibility of the fascia and, thus, reduce the potential for damage. Some examples of stretching exercises with illustration follow:

The gastrocnemius is one of the major muscle groups in the calf. To stretch this muscle, place your hands against the wall and stand with both feet flat on the floor, one foot forward of the other. Keep the rearmost leg straight and the foot pointed straight ahead.

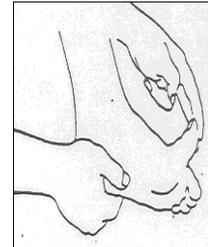


Lean forward without arching the back, placing your weight on the forward leg while bending it at the knee. You should feel a stretch in the mid-calf of the straight leg. Hold the stretch for 10 - 15 seconds, release, and then repeat 6 - 8 times. Reverse the position of the legs and then stretch the other leg.



The gastrocnemius can also be stretched using a simple exercise that can be performed while standing on a stair. Stand with the ball of the foot on the edge of a stair and heels off the step. While holding the banister for balance. Perform for 30 seconds.

During normal walking, the plantar fascia lengthens and then shortens as the foot lands. If the plantar fascia is insufficiently elastic repetitive lengthening and shorting can result in damage to the fibers of the fascia with subsequent inflammation. Exercises that stretch the plantar fascia can improve its flexibility and help it withstand the stresses that are placed on it without damage. The plantar fascia can be easily stretched while



sitting. Sit on the chair or on the edge of a bed with one leg crossed over the other. See illustration above. Place the fingers of the hand of the same side as the crossed leg across the base of the toes and pull the toes back toward the shin while keeping the leg steady until stretch is felt in the bottom of the foot. Repeat the exercise 5 times for each foot.

The rolling stretch is another simple way to stretch the plantar fascia. To perform this exercise sit on the edge of a bed and place your foot on a hard cylindrical object such as a plastic water bottle or a ball. Roll the foot over the object while maintaining pressure against it. Continue rolling for 30 - 60 seconds, stop, and then repeat for a total of 5 times. This stretch should be performed 3 times per day. For pain relief while performing the exercise, use a water bottle filled with cold water or chill the ball in the refrigerator prior to performing the exercise.

