


**PLANTAR FASCIITIS**
**DIAGNOSIS**

 USUALLY NOT X-RAY DIAGNOSIS  
 CALCANEAL HEEL SPURS CAN BE SEEN

**HOME PROGRAM**

1. TAPING OF THE ARCH
2. ICE MASSAGE
3. PLANTAR FASCIA AND ACHILLES STRETCHES
4. INTRINSIC MUSCLES FOOT STRENGTHENING
5. NEW SHOES AS NEEDED
6. PLANTAR HEEL PADDING AND LIFTS
7. POSSIBLE VARUS HEEL WEDGE

**FUNCTIONAL FOOT ORTHOSES**

- TYPICAL SHOE MODIFICATIONS
1. SUSPENSION CASTING TECHNIQUES
  2. FIRST METATARSAL ACCOMMODATION
  3. HEEL BURSAE ACCOMMODATION
  4. SOFT ORTHOSES INITIALLY WHEN ACUTE
  5. PLANTAR FASCIAL GROOVES
  6. FOREFOOT CORRECTION EXTRINSIC

**PHYSICAL THERAPY**

1. ELECTRICAL GALVANIC STIMULATION WITH CONTRAST BATHS
2. ULTRASOUND
3. ICE MASSAGE
4. CONTINUATION OF TAPING IF NEEDED

**SERIAL CORTISONE SHOTS**
**CORTISONE INJECTION WITH BELOW THE KNEE CAST**

1. NORMALLY 6 TO 8 WEEKS
2. MUST BE TOTALLY PAINFREE TO WEIGHT BEAR
3. REMOVE EVERY 2 WEEKS TO CHECK PAIN LEVEL
4. REMOVE PERMANENTLY WHEN PAINFREE

 IF ALL ELSE FAILS  
 SURGICAL RELEASE

**Shin Curls.** Run your injured foot slowly up and down the shin of your other leg as you try to grab the shin with your toes. A similar exercise can be done curling your toes around a tin can.

**Repeat** \_\_\_\_\_ **times,**  
\_\_\_\_\_ **times/day.**

**Stretches.** Stand at arm's length from a counter or table with your back knee locked and your front knee bent. Slowly lean toward the table, pressing forward until a moderate stretch is felt in the calf muscles of your straight leg. Hold 15 seconds. Keeping both heels on the floor, bend the knee of



your straight leg until a moderate stretch is felt in your Achilles tendon. (Tendons attach muscles to bones; the Achilles tendon attaches the muscles of the calf to the heel bone.) Hold 15 seconds more. You should feel a moderate pull in your muscles and tendon, but no pain. Change legs and stretch the other leg.

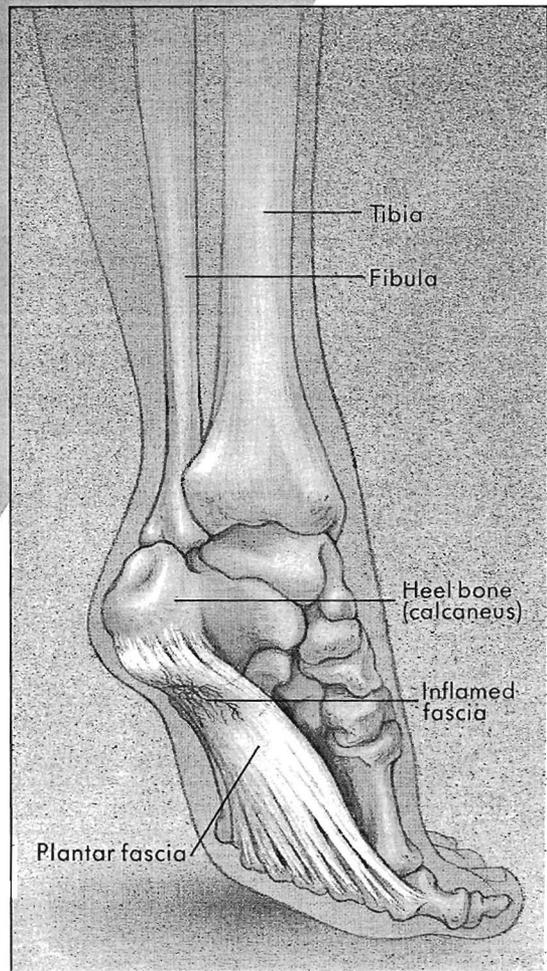
**Repeat** \_\_\_\_\_ **times,** \_\_\_\_\_ **times/day.**



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# Plantar Fasciitis

ORTHOPEDIC  
SPORTS MEDICINE  
KIT



## THE INJURY

Plantar fasciitis (heel-spur syndrome) is a common problem among people who are active in sports, particularly runners. It starts as a dull intermittent pain in the heel which may progress to a sharp persistent pain. Classically, it is worse in the morning with the first few steps, after sitting, after standing or walking, and at the beginning of sporting activity.

The plantar fascia is a thick fibrous material on

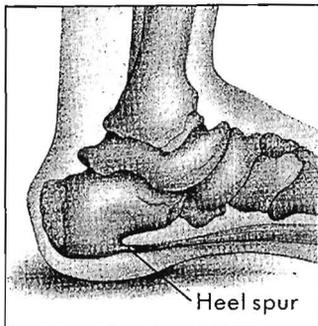
the bottom of the foot. It is attached to the heel bone (calcaneus), fans forward toward the toes, and acts like a bowstring to maintain the arch of the foot.

A problem may occur when part of this inflexible fascia is repeatedly placed under tension, as in running. Tension causes an overload that produces an inflammation usually at the point where the fascia is attached to the heel bone. The result is pain.

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Plantar fascia injury may also occur at midsole or near the toes. Since it is difficult to rest the foot, the problem gradually becomes worse because the condition is aggravated with every step. In severe cases, the heel is visibly swollen. The problem may progress rapidly and treatment must be started as soon as possible.

The inflammatory reaction at the heel bone may produce spike-like projections of new bone called heel spurs. They sometimes show on x-rays. They do not cause the initial pain, nor do they cause the initial problem; they are a result of the problem. But later, having to walk on spurs may cause sharp pain.



### Contributing Factors

- Flat (pronated) feet
- High arched, rigid feet
- Poor shoe support
- Toe running, hill running
- Soft terrain (i.e., running on sand)
- Increasing age
- Sudden weight increase
- Sudden increase in activity level
- Family tendency

## TREATMENT

Improvement may take longer than expected, especially if the condition has existed for a long time. During recovery, loss of excess weight, good shoes, and sedentary activities all help the injury to heal. You should return to full activity gradually.

**Rest.** Use pain as your guide. If your foot is too painful, rest it.

**Ice.** Ice the sore area for 30 to 60 minutes several times a day to reduce the inflammation. Apply a plastic bag of crushed ice over a towel. You should also ice the sore area for 15 minutes after activity.

**Medication.** If your condition developed recently, anti-inflammatory/analgic medication (in tablet form), coupled with heel pads (see below) may be all that is necessary to relieve pain and reduce inflammation. If no pain relief has occurred after two or three weeks, however, your doctor may inject either cortisone

or local anesthetic directly into the tender area.

**Physical Therapy.** The initial objective of physical therapy (when needed) is to decrease the inflammation. Later, the small muscles of the foot can be strengthened to support the weakened plantar fascia.

**Heel Pads.** A heel pad of felt, sponge, or a newer synthetic material can help to spread, equalize, and absorb the shock as your



heel lands, thus easing the pressure on the plantar fascia. It may be necessary to cut a hole in the heel pad so the painful area will not be irritated. Your doctor will tell you where you can get heel pads; they are available at some medical-supply and sporting-goods stores.

**Shoes.** Poorly fitting shoes can cause plantar fasciitis. The best type of shoe to wear is a good running shoe with excellent support. The shoe should be chosen that fits best. Experiment with your athletic shoes to find a pair that is comfortable and gives you fewer symptoms.

**Orthoses.** Orthoses (sometimes misnamed "orthotics") are shoe inserts that your doctor will prescribe if necessary.

## SPORTS

Plantar fasciitis can be aggravated by all weight-bearing sports. Any sport where the foot lands repeatedly, such as running or jogging, can aggravate the problem. The injury may be precipitated by a sudden weight increase, changes in activity profile, or return to activity suddenly after a long period of rest, as in a cast. To maintain cardiovascular fitness, weight-bearing sports can be

**Taping.** Your doctor may tape your foot to maintain the arch; this will take some of the tension off the plantar fascia.

**Surgery.** Surgery is rarely required for plantar fasciitis. It would be considered only if all forms of more conservative treatment fail and if the pain is still incapacitating after several months of treatment. When needed, surgery involves removal of the bone spur and release of the plantar fascia.

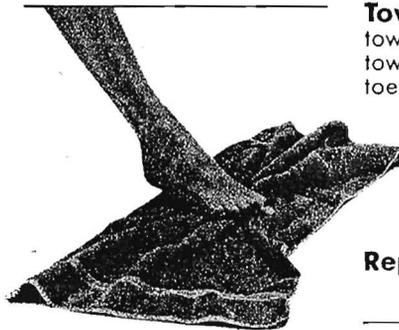
temporarily replaced by non-weight-bearing sports (i.e., swimming, cycling). Weight training can be used to maintain leg strength.

When recovering from plantar fasciitis, return to sports activities slowly. If you have a lot of pain either during the activity or the following morning, you are doing too much.

Using heel pads or changing to different or new shoes may help the problem.

## EXERCISES

The following exercises are designed to strengthen the small muscles of the foot to help support the damaged area. If done regularly, they will help prevent re-injury. DO EACH PRESCRIBED EXERCISE TWO TIMES A DAY OR AS OFTEN AS YOUR DOCTOR RECOMMENDS.



**Towel Curls.** Place towel on the floor and curl it toward you, using only the toes of your injured foot.

Resistance can be increased with a weight on the end of the towel. Relax, then repeat the towel curl.

Repeat \_\_\_\_\_ times,  
\_\_\_\_\_ times/day.