

# YOUR PODIATRIC PHYSICIAN Talks About

## Heel Pain



### Heel Pain Has Many Causes

**I**n our pursuit of healthy bodies, pain can be an enemy. In some instances, however, it is of biological benefit. Pain that occurs right after an injury or early in an illness may play a protective role, often warning us about the damage we've suffered.

When we sprain an ankle, for example, the pain warns us that the ligament and soft tissues may be frayed and bruised, and that further activity may cause additional injury.

Pain, such as may occur in our heels, also alerts us to seek medical attention. This alert is of utmost importance because of the many afflictions that contribute to heel pain.

### Heel Pain

**H**eel pain is generally the result of faulty biomechanics (walking gait abnormalities) that place too much stress on the heel bone and the soft tissues that attach to it. The stress may also result from injury, or a bruise incurred while walking, running, or jumping on hard surfaces; wearing poorly constructed footwear; or being overweight.

The heel bone is the largest of the 26 bones in the human foot, which also has 33 joints and a network of more than 100 tendons, muscles, and ligaments. Like all bones, it is subject to outside influences that can affect its integrity and its ability to keep us on our feet.

Heel pain, sometimes disabling, can occur in the front, back, or bottom of the heel.

### Heel Spurs

**A** common cause of heel pain is the heel spur, a bony growth on the underside of the heel bone. The spur, visible by X ray, appears as a protrusion that can extend forward as much as half an inch. When there is no indication of bone enlargement, the condition is sometimes referred to as "heel spur syndrome."

Heel spurs result from strain on the muscles and ligaments of the foot, by stretching of the long band of tissue that connects the heel and the ball of the foot, and by repeated tearing away of the lining or membrane that covers the heel bone. These conditions may result from biomechanical imbalance, running or jogging, improperly fitted or excessively worn shoes, or obesity.

### Plantar Fasciitis

**B**oth heel pain and heel spurs are frequently associated with an inflammation of the band of fibrous connective tissue (fascia) running along the bottom (plantar surface) of the foot, from the heel to the ball of the foot. The inflammation is called plantar fasciitis. It is common among athletes who run and jump a lot, and can be quite painful.

The condition occurs when the plantar fascia is strained over time beyond its normal extension, causing the soft tissue fibers of the fascia to tear or stretch at

points along its length; this leads to inflammation, pain, and possibly the growth of a bone spur where it attaches to the heel bone.

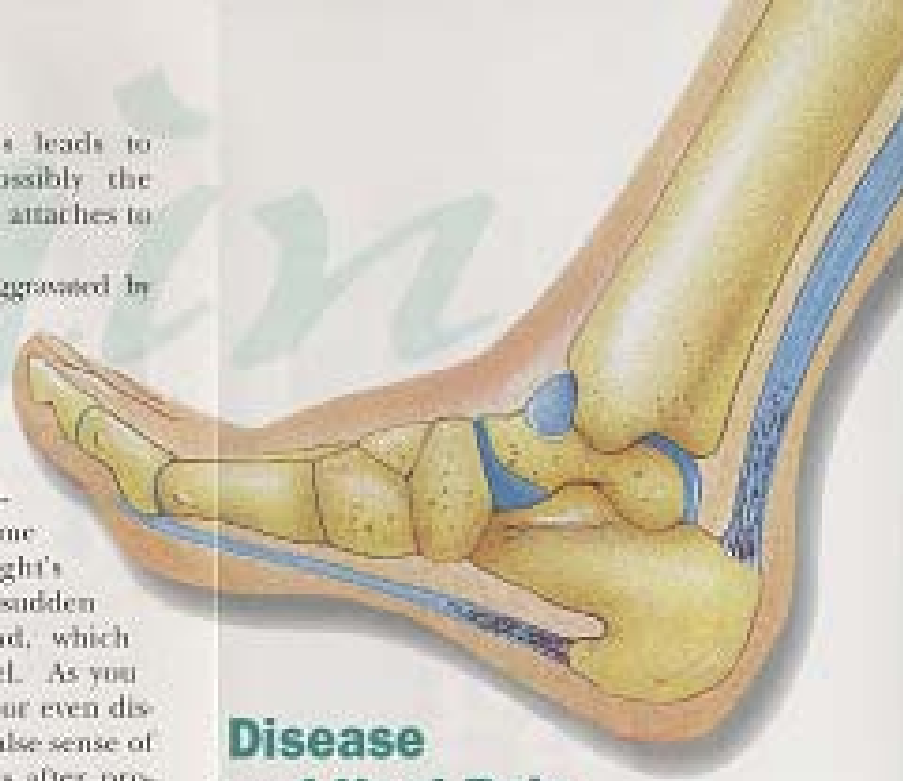
The inflammation may be aggravated by shoes that lack appropriate support, especially in the arch area, and by the chronic irritation that sometimes accompanies an athletic lifestyle.

Resting provides only temporary relief. When you resume walking, particularly after a night's sleep, you may experience a sudden elongation of the fascia band, which stretches and pulls on the heel. As you walk, the heel pain may lessen or even disappear, but that may be just a false sense of relief. The pain often returns after prolonged rest or extensive walking.

## Excessive Pronation

**H**eel pain sometimes results from excessive pronation. Pronation is the normal flexible motion and flattening of the arch of the foot that allows it to adapt to ground surfaces and absorb shock in the normal walking pattern.

As you walk, the heel contacts the ground first; the weight shifts first to the outside of the foot, then moves toward the big toe. The arch rises, the foot generally rolls upward and outward, becoming rigid and stable in order to lift the body and move it forward. Excessive pronation—excessive inward motion—can create an abnormal amount of stretching and pulling on the ligaments and tendons attaching to the bottom back of the heel bone. Excessive pronation may also contribute to injury to the hip, knee, and lower back.



## Disease and Heel Pain

**S**ome general health conditions can also bring about heel pain.

- ◆ *Rheumatoid arthritis* and other forms of arthritis, including gout, which usually manifests itself in the big toe joint, can cause heel discomfort in some cases.

- ◆ Heel pain may also be the result of an inflamed bursa (*bursitis*), a small, irritated sack of fluid; a *neuroma* (a nerve growth); or other soft-tissue growth. Such heel pain may be associated with a heel spur, or may mimic the pain of a heel spur.

- ◆ *Haglund's deformity* ("pump bump") is a bone enlargement at the back of the heel bone, in the area where the Achilles tendon attaches to the bone. This sometimes painful deformity generally is the result of bursitis caused by pressure against the shoe, and can be aggravated by the height or stitching of a heel counter of a particular shoe.

- ◆ Pain at the back of the heel is associated with inflammation of the achilles tendon as it runs behind the ankle and inserts on the back surface of the heel bone. The inflammation is called *achilles tendonitis*. It is common among people who run and walk a lot and have tight tendons. The condition occurs when the tendon is strained over time, causing the fibers to tear or stretch along its length, or at its insertion on to the heel bone. This leads to inflammation, pain, and the possible growth of a bone spur on the back of the heel bone. The inflammation is aggravated by the chronic irritation that sometimes accompanies an active lifestyle and certain activities that strain an already tight tendon.

- ◆ *Bone bruises* are common heel injuries. A bone bruise or contusion is an inflammation of the tissues that cover the heel bone. A bone bruise is a sharply painful injury caused by the direct impact of a hard object or surface on the foot.

- ◆ *Stress fractures* of the heel bone also can occur, but these are less frequent.

## Children's Heel Pain

Heel pain can also occur in children, most commonly between ages 8 and 13, as they become increasingly active in sports activity in and out of school. This physical activity, particularly jumping, inflames the growth centers of the heels; the more active the child, the more likely the condition will occur. When the bones mature, the problems disappear and are

not likely to recur. If heel pain occurs in this age group, podiatric care is necessary to protect the growing bone and to provide pain relief. Other good news is that heel spurs do not often develop in children.

## Prevention

A variety of steps can be taken to avoid heel pain and accompanying afflictions:

- ◆ Wear shoes that fit well — front, back, and sides — and have shock-absorbent soles, rigid shanks, and supportive heel counters.
- ◆ Wear the proper shoes for each activity.
- ◆ Do not wear shoes with excessive wear on heels or soles.
- ◆ Prepare properly before exercising. Warm up and do stretching exercises before and after running.
- ◆ Pace yourself when you participate in athletic activities.
- ◆ Don't underestimate your body's need for rest and good nutrition.
- ◆ If obese, lose weight.

## Podiatric Medical Care

If pain and other symptoms of inflammation—redness, swelling, heat—persist, you should limit normal daily activities and contact a doctor of podiatric medicine.

The podiatric physician will examine the area and may perform diagnostic X rays to rule out problems of the bone.

Early treatment might involve oral or injectable anti-inflammatory medication, exercise and shoe recommendations, taping or

strapping, or use of shoe inserts or orthotic devices. Taping or strapping supports the foot, placing stressed muscles and tendons in a physiologically restful state. Physical therapy may be used in conjunction with such treatments.

A functional orthotic device may be prescribed for correcting biomechanical imbalance, controlling excessive pronation, and supporting of the ligaments and tendons attaching to the heel bone. It will effectively treat the majority of heel and arch pain without the need for surgery.

Only a relatively few cases of heel pain require more advanced treatments or surgery. If surgery is necessary, it may involve the release of the plantar fascia, removal of a spur, removal of a bursa, or removal of a neuroma or other soft-tissue growth.



This pamphlet is one of a series produced by APMA about foot health conditions and concerns, including diabetes, arthritis, athlete's foot, warts, foot orthotics, aging, children's feet, knee-foot and rear-foot surgery, walking, foot and ankle injuries, nail problems, footwear, and others. These brochures are to substitute for visiting a podiatric physician for medical advice. The pamphlets are available from many members of APMA. Or call:

Dr. Thomas Sasbacher  
Foot and Ankle Specialist  
30805 Town Center #3 Suite #2  
Laguna Hills, CA 92653  
714-677-7574

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