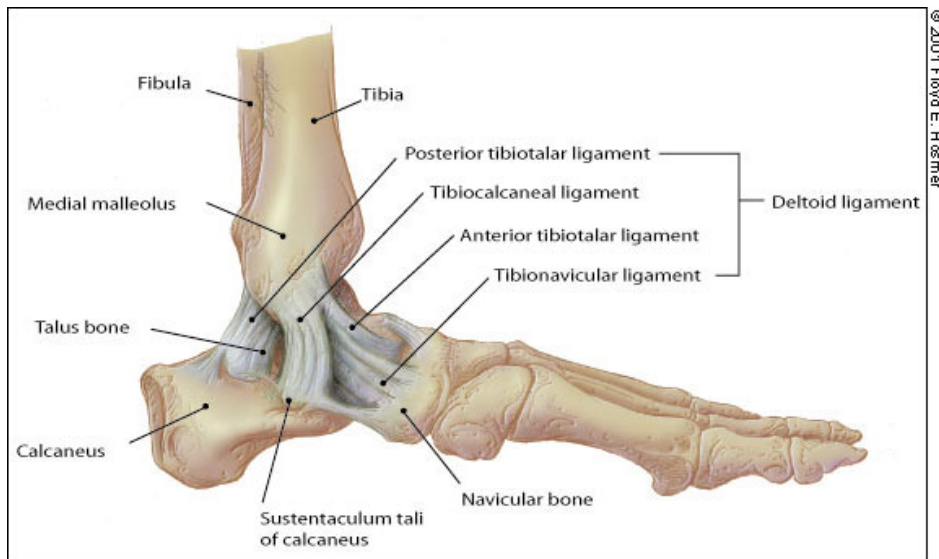


## Foot and Ankle Conditions

### Foot and ankle anatomy

The bones and joints of the foot and ankle are held together by a strong network of muscles and ligaments. The foot is connected to the ankle where one of the tarsal bones, called the **talus**, meets the lower leg bones, called the **tibia** and the **fibula**.

Each foot contains 26 bones. The main arch of the foot is called the **plantar arch**. It runs lengthwise and touches the ground only at the heel bone and at the ball of the foot. The plantar arch is thickly padded at both ends. There is also a thick pad of fat under the heel of the foot that acts as a shock absorber.



### Foot and ankle injuries

The most commonly reported injuries in the foot/ankle region are **ankle sprains**. A sprained ankle means that the *ligaments* (the strong bands of tissue that connect the bones of the foot) are stretched beyond their normal limits, resulting in inflammation, tearing, or rupture of the tissue.

If you're in pain for more than a day or two, or if the pain is intense, you should see a physiotherapist or sport medicine physician.

**"Shin splints"** The term shin splints refers to a painful condition that develops along the inside (medial edge) of the shin (tibia). Repeated running on hard surfaces, weakness in the leg muscles, or flat feet or a high arch can lead to this condition. Shin splints may progress from a stress reaction within the bone to an actual stress fracture. It is important to see a physician to rule out a stress fracture.

*Tendons* are the strong fibrous cords that attach muscles to bones. The *Achilles tendon* is easily felt at the back of the ankle.

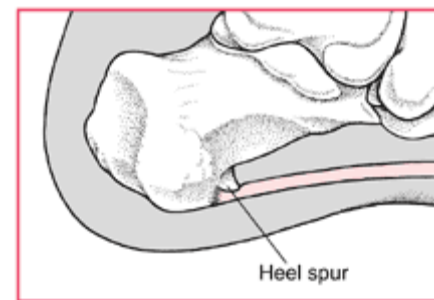
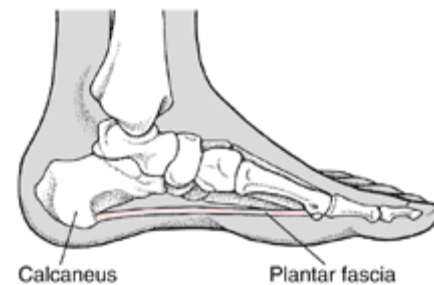


**Achilles tendinitis** is an inflammation of this tendon, often resulting from sports (such as basketball or aerobic dancing) that require a great deal of jumping.

**Plantar fasciitis** is an irritation of the plantar fascia - the tough tissue on the very bottom of the foot that begins at the heel and is attached to the toes. It can result in pain and lead to a **heel spur**, a bony growth on the underside of the heel bone. This kind of pain is usually at its worst in the morning, and then gradually diminishes during the day.

**Flat feet**, is a condition in which the arch is judged to be lower than normal. Flat feet can cause discomfort, and sometimes can lead to plantar fasciitis or other problems.

**High arches**, as opposed to flat feet, is a condition in which the arches are higher than normal. The main concern here is to make sure that the shoes have enough surface contact and support for the arches; otherwise, the stresses put on the foot and ankle can move "up the chain" through the legs and spinal column. In some cases, high arches may require custom orthopedic shoe inserts to prevent more serious problems.



## Do shoes matter?

Improper **shoes** can cause or aggravate foot problems. It's important for all of us to know that if you're going to stay on your feet and keep going, your shoes have to fit properly, be comfortable, and provide support - and support means maximum coverage of the surface area under the plantar arch. Your shoes must be able to absorb shock while you walk, and provide stability to the heel area.

## Usual symptoms include:

- Pain in the heel/sole of the foot/shin
- Pain on weight bearing where pressure is applied to the heel
- Difficulty with walking/running, stairs, rising on your toes, squatting with the heels on the ground

## What physiotherapy can do to help

- We use massage and stretches to lengthen the tightness in the plantar fascia.
- We use electrotherapy and/or acupuncture to relieve pain and promote healing of damaged tissue in the foot and shin.
- We progressively strengthen the weakened tissue by teaching you specific exercises.
- We use tape to control the imbalances until your muscles can do the job.
- We suggest orthotics if your medial arch needs ongoing support.
- We progressively return you to daily and sporting activity.