



## Adult Acquired Flatfoot

A variety of foot problems can lead to adult acquired flatfoot deformity (AAFD), a condition that results in a fallen arch with the foot pointed outward.

Most people — no matter what the cause of their flatfoot — can be helped with orthotics and braces. In patients who have tried orthotics and braces without any relief, surgery can be a very effective way to help with the pain and deformity.

One of the more common signs of flatfoot is the "too many toes" sign. Even the big toe can be seen from the back of this patient's foot. In a normal foot, only the fourth and fifth toes should be visible.



## Symptoms

Depending on the cause of the flatfoot, a patient may experience one or more of the different symptoms below:

- Pain along the course of the posterior tibial tendon which lies on the inside of the foot and ankle. This can be associated with swelling on the inside of the ankle.
- Pain that is worse with activity. High intensity or impact activities, such as running, can be very difficult. Some patients can have difficulty walking or even standing for long periods of time.
- When the foot collapses, the heel bone may shift position and put pressure on the outside ankle bone (fibula). This can cause pain on the outside of the ankle. Arthritis in the heel also causes this same type of pain.

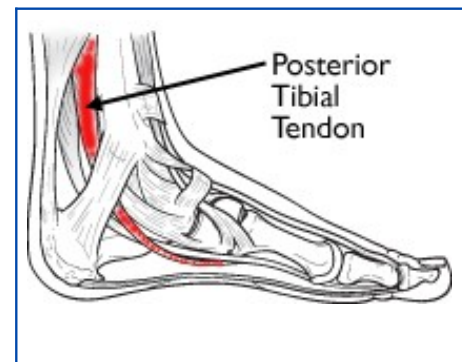
- Patients with an old injury or arthritis in the middle of the foot can have painful, bony bumps on the top and inside of the foot. These make shoe wear very difficult. Occasionally, the bony spurs are so large that they pinch the nerves which can result in numbness and tingling on the top of the foot and into the toes.
- Diabetics may only notice swelling or a large bump on the bottom of the foot. Because their sensation is affected, people with diabetes may not have any pain. The large bump can cause skin problems and an ulcer (a sore that does not heal) may develop if proper diabetic shoe wear is not used.

## Cause

As discussed above, many health conditions can create a painful flatfoot.

### **Posterior Tibial Tendon Dysfunction (PTTD)**

Damage to the posterior tibial tendon is the most common cause of AAFD. The posterior tibial tendon is one of the most important tendons of the leg. It starts at a muscle in the calf, travels down the inside of the lower leg and attaches to the bones on the inside of the foot.



The main function of this tendon is to hold up the arch and support your foot when you walk. If the tendon becomes inflamed or torn, the arch will slowly collapse. Women and people over 40 are more likely to develop problems with the posterior tibial tendon. Other risk factors include obesity, diabetes, and hypertension. Having flat feet since childhood increases the risk of developing a tear in the posterior tibial tendon. In addition, people who are involved in high impact sports, such as basketball, tennis, or soccer, may have tears of the tendon from repetitive use.

### **Arthritis**

Inflammatory arthritis, such as rheumatoid arthritis, can cause a painful flatfoot. This type of arthritis attacks not only the cartilage in the joints, but also the ligaments that support the foot. Inflammatory arthritis not only causes pain, but also causes the foot to change shape and become flat.

The arthritis can affect the back of the foot or the middle of foot, both of which can result in a fallen arch.

### **Injury**

An injury to the ligaments in the foot can cause the joints to fall out of alignment. The ligaments support the bones and prevent them from moving. If the ligaments are torn, the foot will become

flat and painful. This more commonly occurs in the middle of the foot (Lisfranc injury), but can also occur in the back of the foot.

In addition to ligament injuries, fractures and dislocations of the bones in the midfoot can also lead to a flatfoot deformity.

### **Diabetic Collapse (Charcot Foot)**

People with diabetes or with a nerve problem that limits normal feeling in the feet, can have arch collapse.

This type of arch collapse is typically more severe than that seen in patients with normal feeling in their feet. This is because patients do not feel pain as the arch collapses. In addition to the ligaments not holding the bones in place, the bones themselves can sometimes fracture and disintegrate - without the patient feeling any pain. This may result in a severely deformed foot that is very challenging to correct with surgery. Special shoes or braces are the best method for dealing with this problem.