

Adult Tibialis Posterior Dysfunction

Adult Acquired Flat Foot
(Pes Planus)

A patient's guide

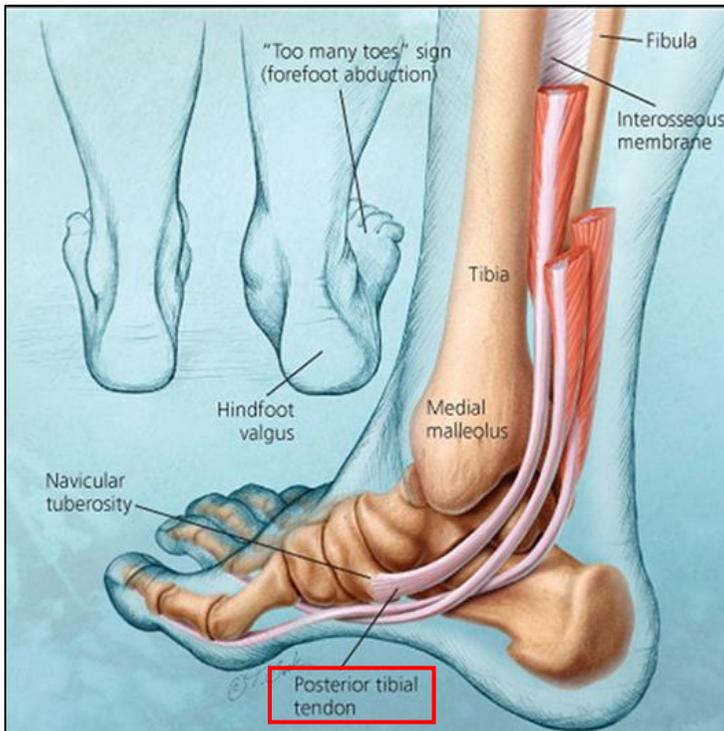


Figure 1 – Illustration of the tibialis posterior (red square box), viewed from the inside of the ankle.

What is the tibialis posterior tendon?

The foot and ankle is held in balance by bands of tissue known as tendons and ligaments.

Tendons originate from muscles. One of these is the tibialis posterior. This passes from the lower leg across the inside of the ankle and into one of the small bones on the bottom of the foot (Navicular).

The muscle pulls on the navicular bone maintaining the arch of the foot (medial longitudinal). This stops the foot rolling over.

What is tibialis posterior dysfunction?

When the tendon of the tibialis posterior muscle becomes stretched and inflamed, it fails to function effectively. This causes pain at the inner surface (medial aspect) of the ankle.

As the tendon becomes worn, the function of this muscle declines and stops working effectively.

As the condition worsens, the support is lost and the patient develops a flat foot (pes planus).

What are the causes?

The condition has a number of causes, listed below. It is most common in women aged 40-50 years.

- *Injury* – If there is a sprain or damage to the tendon, the condition may result.
- *Flat foot* – Where the patient already has a flat foot, overuse can cause the arch to progressively flatten. This results in further pain and swelling.
- *Age* – Increased age is a risk factor for developing the condition.
- *Weight* – Being overweight increases the risk of suffering due to the increased strain put across the tendon.
- *Underlying condition* – Certain health conditions that reduce sensation to the foot (neuropathic foot) can lead to this condition.

What are the symptoms?

The symptoms of tibialis posterior dysfunction include discomfort when walking, progressive flattening of the foot arch and difficulty walking on tip toes. As the condition progresses, arthritis can affect the joints of the foot and ankle.

How is it diagnosed?

The diagnosis is made on the medical history and clinical examination. The examination will look at your feet for signs of tibialis posterior dysfunction. This includes:

- Tenderness on the path of the tibialis posterior muscle, worse on stressing.
- Flattened medial longitudinal arch
- Too many toes sign when viewed from behind – see fig 1.
- Difficulty standing on tip toes on one foot at a time (single foot heel rises)

Will I be sent for any investigations?

The diagnosis is largely clinical and, in most cases, no further investigations are needed. X-rays may be carried out in the first instance to assess the degree of deformity and any other areas of arthritis in the foot.

What are the different stages?

Tibialis posterior dysfunction is divided into a number of different stages as the condition worsens. These are numbered 1 to 4 and indicate how severe the case is.

- Stage 1 – Tendon is inflamed, remains intact
- Stage 2 – Tendon dysfunction and the arch has become flattened. The deformity is correctable.
- Stage 3 – Foot deformity is fixed.
- Stage 4 – Foot deformity is fixed with associated deformity in the ankle joint

What are the treatment options?

Most cases of tibialis posterior dysfunction do not require surgery. It is advisable to initially treat it without surgery, and leave surgery as a last resort. Some of the non-operative treatments include:

- Footwear and orthotics – these include ankle braces, lace up shoes and insoles with a support for the foot arch.
- Painkillers – these can be topical or oral tablets. Ice packs can reduce swelling
- Physiotherapy - can help with stiffness and discomfort and keep the surrounding muscle in good condition
- Activity modification – avoiding activities that create excessive impact on the ankle joint and taking up activities with are less load bearing (eg. Cycling). Some working roles may need to be re-considered.
- Weight loss - the ankle has to bear 5 to 7 times the body weight during day to day activities, such as standing and walking. Any amount of weight loss can reduce the load on the ankle joint and reduce pain.

What are the benefits of surgery?

In cases of severe pain and decrease in function which is not responding well to non-surgical methods, then surgery may be a used to improve pain. The aim of surgery is to relieve pain.

Summary of surgery.

The surgery is usually performed under general anaesthetic. You will generally require a few nights in hospital after the surgery.

There are different types of surgery undertaken for tibialis posterior dysfunction, these include:

- Stages 1 and 2:
 - o Tendon debridement or Reconstructive surgery
- Stages 3 & 4
 - o Fusion procedures

Reconstructive surgery

Reconstructive surgery involves using another tendon to replace the worn out tendon (tendon transfer) and cutting the heel bone to straighten the back part of the foot. This is fixed with metal work. There may be other procedures done to straighten the foot and support the tendon transfer.

Following surgery, you will be in a cast for at least 6 weeks and in a walking boot for a further 6 weeks. You will be able to bear weight in the cast/boot 2 weeks after surgery. You will need injections to reduce the risk of clots in the leg for two weeks following surgery.

Fusion Surgery

Fusion surgery is undertaken if the flat foot deformity is permanent and there is arthritis in the joints of the foot and/or ankle. The arthritic joints are accessed via incisions and fixed using metalwork. Eventually the joint will 'fuse' and the bones will join together.

Following surgery, you will be in a cast for up to 12 weeks. You may need a boot for a few weeks after. You will be able to bear weight in the cast 2 weeks after surgery. You will need injections to reduce the risk of clots in the leg for two weeks following surgery.

What are the risks with surgery?

The general risks with surgery include

- Bleeding – rarely may there be bleeding with results in a collection of blood under the wound. Bruising is common after this procedure
- Swelling – common after surgery and can take many months to eventually settle down. Elevation is key to reducing this. Swelling can be permanent in some cases.
- Stiffness – exercises are important to reduce the stiffness after surgery
- Infection – infections can be treated with antibiotics. Deeper infections which are much rarer may require further surgery.
- Nerve injury – this may cause some numbness in the ankle/foot.
- Scarring – some scars can be prominent or dark in colour. This usually fades with time.

- Clots in leg/lung – your risk of clots will be assessed prior to surgery and appropriate treatment/advice will be given.

The specific risks to this surgery include

- Non union/delayed union – in some cases the bones may take longer to fuse or not fuse at all. This may need further surgery.
- Ongoing pain – despite surgery, some patients may still have symptoms of pain and swelling.
- Tendon detachment/rupture – this may need a further operation to repair.
- Deformity – Often there is some residual deformity following the surgery.
- Chronic regional pain – This is excessive pain after surgery and is a very rare complication.

Advice after surgery

The foot should be strictly elevated for the first 2 weeks to avoid excessive swelling which could compromise the wound. Aim to keep the foot elevated for 55 minutes of every hour

The dressings should not be disturbed unless there is a concern with the wound. At around 2 weeks after surgery, you will return to the clinic to have the cast and stitches removed and a new cast applied

You may shower the limb after the stitches have been removed and the wound is fully healed and/or when the cast has been removed. Before that time keep the wound and surrounding area dry and clean.

You will have a period of non-weightbearing and protected weightbearing in a cast or walking boot. You may need crutches. The physiotherapist will show you how to use them. The exact times will be discussed with you by your surgeon.

It may take several weeks before you can drive. Please check with your insurer.

Going back to work depends on the activity undertaken at work and should be discussed with your surgeon.

There is often a lengthy recovery process following surgery. Physiotherapy is essential after surgery. It may take several months before swelling subsides. Return to recreational walking and light activities can take up to 6 months. Return to more intensive sports can take between 9 months to one year. Often a full recovery takes much longer than one would expect – up to 18 months. This is a normal recovery. If you are slower than these times do not panic, they are only averages, but let your surgeon know when you attend clinic.

If I have any questions or concerns?

These guidelines are to help you understand your operation. This level of detail may cause concern, anxiety, or uncertainty. Please let your doctor or nurse know so that we may address these issues.

We aim to see you back in the clinic at regular intervals to monitor your progress and answer any questions you may have during your recovery.

If there is concern regarding the wound, such as increased redness, pus, discharge, or pain, then seek medical attention either at your GP or nearest Emergency department.

Above all else, please do not proceed with surgery unless you are satisfied and understand all you want to know about the operation.

Further information

There are a number of places that you can look at for further information. These days commonest and easiest way is to look in the internet. You can also ask your surgeon or General Practitioner. Below are a few web sites that you may find useful.

<https://www.bofas.org.uk/patient/patient-information>

(under flat feet)

Edmund leong
Consultant Orthopaedic Foot and Ankle Surgeon
www.hertfordshirefootandankle.co.uk
info@hertfordshirefootandankle.co.uk