

## PATIENT INFORMATION

# Hindfoot Arthritis

Talonavicular joint

Ankle joint



Calcaneocuboid joint

Subtalar or  
Talocalcaneal joint

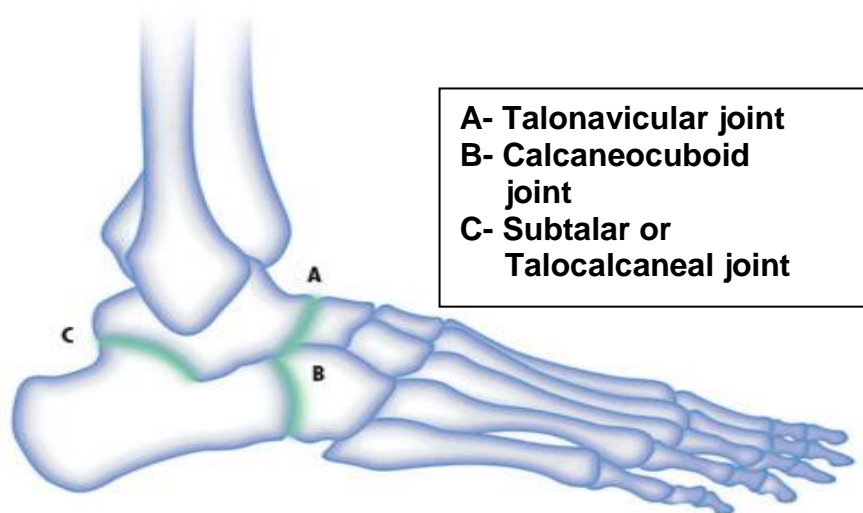
## The hindfoot

The hindfoot consists of three joints which lie around and below the ankle –

These three joints include:

- The **talonavicular joint**, where the talus connects to the inner midfoot bone (navicular)
- The **calcaneocuboid joint**, where the heel bone connects to the outer midfoot bone (cuboid).
- The **subtalar or talocalcaneal joint**, where the bottom of the talus connects to the heel bone (calcaneus);

The hindfoot enables the foot to make the most of its sideways movements and provides flexibility to the foot particularly on uneven ground. These joints are separate to the ankle joint where most of the up and down movements occur.



**Figure 1 joints of the hindfoot**

### **What is hindfoot/ankle arthritis?**

Hindfoot arthritis can be caused by degeneration (osteoarthritis) or inflammation (e.g. rheumatoid arthritis, ankylosing spondylitis, and psoriatic arthritis). In both cases the cartilage, which is the shiny white gristle that lines and articulates the joint, becomes damaged. This causes bone to rub on bone, which is painful. Osteoarthritis is usually secondary to damage to the joint, for example as a result of previous fracture, repeated sprains of the ankle, malalignment of the joint or infection. Excess body weight can overload a joint and worsen the symptoms of arthritis. Every extra kilogram of body weight is multiplied by 5 to 7 times when it is carried by the ankle. The alignment of the leg is such that the weight passes from the centre of the hip, through the centre of the knee, and into the centre of the ankle. Anything which changes this alignment will alter the way the ankle is loaded and cause it to wear unevenly, and more quickly. 'Bow legs' or 'knock knees' are examples of malalignment, which can affect the ankle. Similarly ankles which point inwards are more prone to sprains, and consequently early arthritis. In some cases realignment of the bones may be helpful in treatment.

### **Who gets hindfoot arthritis?**

Anyone can get hindfoot arthritis. Osteoarthritis tends to become commoner as we get older; nevertheless ankle fractures, repeated sprains, and inflammatory arthritis can cause arthritis to occur at a younger age.

### **What are the symptoms?**

**Pain:** Pain is the commonest and most troublesome symptom. This is usually made worse by walking. It may disturb sleep. Simple ways to see if your pain is getting worse

is to record whether your walking distance is decreasing, or whether you need more painkillers to ease the pain.

**Stiffness:** With osteoarthritis stiffness, or reduced movement, is common. With inflammatory arthritis stiffness can often be worse first thing in the morning.

**Cracking/popping:** There may be little pieces of loose cartilage or bone caught within the joint causing this sensation.

**Giving way:** This may be due to looseness of the ligaments, or secondary to pain.

**Swelling:** Swelling may be as a result of extra bone, or fluid within the joint. The soft tissues can also inflame and swell.

## **How is hindfoot arthritis investigated?**

X-rays of the hindfoot/ankle are taken whilst you are standing. This simple test will give the most information on whether the hindfoot is worn or not. Blood tests are sometimes used to investigate inflammation, or gout. Occasionally special tests are needed to determine the extent of the arthritis, or exactly which joint is involved. An MRI scan can give a lot of information on the thickness of the cartilage lining the joint and whether there are small areas of wear and loose cartilage. CT and bone scans may also be used to investigate hindfoot arthritis.

## **Treatment**

With any form of arthritis there are two forms of treatment. The first is without an operation, and the second is with surgery. Most arthritis can be treated without surgery, and only in severe arthritis will surgery be considered.

### **Non operative treatments**

In the first instance simple modifications of the way you lead your life should be tried. These include resting when the pain necessitates, slowing down and altering sporting activities. Weight loss, insoles within shoes, supportive boots and walking sticks are also useful. Splintage or bracing can sometimes help. The most important and effective non-operative treatment if necessary is weight loss.

For many people the arthritis can be controlled by support of the ankle. Supports take 2 forms. Ankle braces, which can be bought from many sports shops. These may be bandages, lace up braces, or even individualised plastic braces that can be made for your leg. These braces can be hot and cumbersome and so HIGH TOPPED, LACE UP

boots with a cushioned sole should be tried. Elasticated boots do not give such good support.

## **Pain relief**

Pain killers such as Paracetamol can be effective. Non steroidal anti inflammatories (NSAID), such as Brufen, Ibuprofen and Diclofenac can reduce inflammation. Patients need to check with their general practitioner or pharmacist that NSAID's are suitable for them, as they can have side effects, especially if you have asthma or stomach ulcers. Physiotherapy and hydrotherapy can help with pain and stiffness. Patients with inflammatory arthritis are usually looked after by a rheumatologist. Disease modifying anti-rheumatoid drugs (DMARD's) are used to treat these conditions, in conjunction with painkillers and NSAID's.

## **Operative treatments**

### **Steroid injection**

Steroid injection of the affected joint or joints may be an option that may provide temporary relief from pain (depending on the joints involved). This option will require admission to hospital usually as a day case with the injection taking place in an operating theatre with x ray facility to identify the affected joint/s for injection.

### **Hindfoot fusion**

Hindfoot fusion of one, two or three of the hindfoot joints is a surgical procedure to relieve severe pain from arthritis or correct painful deformity.

### **How does the procedure work?**

Hindfoot fusion is a surgical procedure that will **remove the function** of the joint/s below the ankle leaving them stiff (fused). See fig.2

If the fusion involves the subtalar joint only, an incision is made on the outside of the foot just below the ankle. Double and triple fusion (involving the talonavicular and calcaneo cuboid joints – see fig.1) requires an additional incision on the inside of the foot.

The surgeon will remove damaged cartilage and position the joints correctly. They are then fixed in this position using metal screws and staples. Positioned correctly, the screws and staples are often felt by the patient but are not painful and will remain in place indefinitely; there is normally no need to remove them. The operation allows the bones to fuse together into a cohesive, painless structure.



**Figure 1 triple fusion**

**The potential complications of hindfoot fusion include:**

1. Failure of the pain to resolve: This is usually because of one of the reasons outlined below - occasionally no cause can be found.
2. Failure of the bones to heal: This is rare in non-smokers, but does occur with a higher incidence if the talonavicular joint only is fused only. In smokers the complication rate is increased by a factor of five. For this reason it is advisable to stop smoking 3 months before surgery. Nicotine is the cause of the problem, and thus patches should also be avoided. If the bones fail to heal, this can usually be rectified by a second operation.
3. The bones not healing in the correct position (malunion): This can usually be rectified by a second operation.
4. Infection.
5. Bleeding.
6. Blood clots in the leg and, rarely, on the lung (deep venous thrombosis and pulmonary embolus).
7. Wound healing problems.
8. Nerve and blood vessel damage leading to numbness, pain or weakness in the foot.

9. Prominent metalware requiring the screws to be removed at a small second operation.
10. In some people, over the longer term (say more than 10 years), arthritis can develop in other joints in the foot, as a result of the excess strain placed on them by the fusion of the hindfoot joint/s. Treatment with further fusion (depending upon the first procedure) may be possible. Obviously, further fusions can lead to an excessively stiff foot.

Most problems can be treated by medications, therapy and on occasions by further surgery, but even allowing for these, sometimes a poor result ensues.

### **How long will it take to recover?**

After the operation you will wake up with your foot in a plaster cast. To minimise swelling the foot must be kept up (above heart level) most of the time. When the foot is lowered it will throb and swell. This should be avoided. Over time you will be able to increase the time that your foot is lowered. After two to three weeks you will be able to keep your foot down most of the time.

If you have a triple fusion, you are likely to spend about 2-3 days in hospital; less for a single or double fusion.

At two weeks you will attend clinic for removal of stitches and a change of plaster cast.

As this is the period when your bones are in the process of fusing together you will wear a plaster cast for the first 12 weeks following surgery. During this time you must not weight bear on the operated foot for 6 of these weeks. You will then commence partial weight bearing for the second six weeks. Your plaster will typically come off at about twelve weeks.

From three to six months post surgery, you will gradually start to build up your mobility and strength with physiotherapy. Full recovery will take 10 months to one year, (depending on your type of surgery).

There will be some change to lifestyle required and some loss of mobility especially on rough ground (depending on the joints fused). However, most patients are able to resume their old activities, including walking, climbing, running and playing tennis.

### **How will I know if I have a complication?**

You may be experiencing a complication if you bleed or experience an increase in pain or swelling after you go home. If these symptoms continue after you have elevated the leg and taken painkillers you should notify the hospital as this could indicate the early onset of infection or possible deep vein thrombosis. (See contact numbers below)

## **Post-operative Venous Thromboembolism (VTE) prophylaxis**

Whilst your leg is being stabilised within a plaster cast (up to 12 weeks) you may be required to take either an oral or injected blood thinning medication every day to prevent the formation of a blood clot forming in your leg and associated complications. This information will be provided to you during your inpatient stay.

### **Contact numbers**

- Surgical care/nurse practitioner number – 01284 713924 please leave an answer machine message if your call is unanswered by a practitioner. This service is offered Monday to Friday 0800 -1700hours
- West Suffolk NHS Foundation Trust- Switchboard 01284 713000 - ask for your consultant's secretary

### **References**

- National Institute for Health and Clinical Excellence. Venous thromboembolism: reducing the risk of venous thromboembolism (deep vein thrombosis and pulmonary embolism) in patients admitted to hospital 2009 <http://www.nice.org.uk> [accessed 13-1-2009]. (Guideline Ref ID:NICE2009)
- Mr A Robinson, consultant orthopaedic surgeon – [www.fredthefoot.co.uk](http://www.fredthefoot.co.uk) - Ankle Arthritis, patient information leaflet 2003

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