Ankle Fusion

What is it?
This is an operation to "fuse" or stiffen the ankle joint.

Why would it be done?
Ankle fusions are done for two main reasons:

1. **Arthritis of the joint**, because of a previous injury that has damaged the joint, a generalised condition such as osteoarthritis or rheumatoid arthritis, or because the joint is just wearing out for some other reason.

2. **Severe deformity** of the rear part of the foot, such as a flat foot or high-arched foot, in which the ankle joint is also deformed, unstable or damaged. Sometimes ankle problems in the presence of major foot deformities can be treated by correcting the deformity by breaking and reshaping the foot bones or fusing the other foot joints, then clearing out the ankle with a telescope (arthroscopy). In other cases it is best to stiffen the joint in the corrected position, particularly if the joint is already stiff or the foot is weak.

If you have a severe foot deformity you may be advised to have this corrected at the same time as your ankle fusion by fusing other joints and/or breaking and realigning the foot bones. This would be discussed at the same time as your ankle fusion and we have other information sheets which give information about major foot fusions. The only extra operation which will be discussed here is the combination of a fusion of the ankle and the joint below the ankle (the "subtalar" joint). This operation is called a "tibiotalocalcaneal fusion" as it fuses the shin bone to the main bones in the back of the foot (tibia, talus and calcaneum). It is included here because it changes the way the ankle operation is done.

We are sometimes asked if a fusion can be changed to an ankle replacement later. This is not possible, as the foot becomes too stiff for an ankle replacement to work.

What does it involve?
A cut is made on each side of the ankle. Usually the inner cut is about 3 to 4 cm long and the outer cut is about 10cm. The bony bumps on each side of the ankle ("malleoli") are removed to allow the surgeon to get into the joint. The joint is opened up and the joint surfaces removed and, if necessary, reshaped to correct a deformity. The joint is then put in the correct place and fixed with two or three screws. If you have a tibiotalocalcaneal fusion the bones are usually fixed together with a large metal pin or "nail" inserted through a cut in the bottom of the heel and sometimes with a screw passed through the back of the heel as well.

It is usually necessary to put some extra bone into an ankle fusion to get it to heal and to fill any gaps in the fusion left by correcting deformity. Often this extra bone can be obtained from the bone that is cut out to prepare the fusion. Sometimes there is not enough bone from this and bone has to be taken from the pelvis just above the hip.

Some people who have foot deformities have a tight Achilles tendon ("heel cord"), or weak muscles, or both. The Achilles tendon may be lengthened during surgery by making three small
cuts in the calf and stretching the tendon. Weak muscles may be compensated by the tendons of normal muscles to do the work of the weak ones. This might be done at the same time as an ankle fusion, or it may be best to do it at another operation. These "tendon transfer" operations are planned individually and your surgeon and physiotherapist will discuss this with you.

Some people with deformities of the foot also have deformed toes. Again, these may be corrected at the same time or at a later operation.

**How long would I be in hospital?**
Most people can come into hospital on the day of surgery. After surgery your foot will tend to swell up quite a lot, especially if you have had extra surgery such as a tendon transfer or toe straightening procedure. You will therefore have to rest with your foot raised to help the swelling to go down.

This may take anything from two days to a week. If you get up too quickly this may cause problems with the healing of your foot.

Once the swelling goes down and the cuts on your foot are healing your foot will be put in plaster and you can get up with crutches and go home.

The physiotherapist will teach you how to walk with crutches. We will get you up as soon as possible! Most people are in hospital for four to five days.

**Will I have to go to sleep (general anaesthetic)?**
The operation is usually done under general anaesthetic (asleep). In addition, local anaesthetic may be injected into your ankle while you are asleep to reduce the pain after the operation even if you go to sleep for the surgery. You will also be given pain-killing tablets as required.

Discussion with your anaesthetist on the morning of your surgery will confirm this.

**Will I have a plaster on afterwards?**
You will need to wear a plaster from your knee to your toes until the ankle has fused - usually three to four months. For the first six weeks you should not put any weight on your foot as it may disturb the healing joint. (Occasionally touching your foot to the ground for balance is OK, but no more.)

**What will happen after I go home?**
By the time you go home you will have mastered walking on crutches without putting weight on your foot. You should go around like this for a month. If you will have problems coping at home on crutches, please discuss this with Nurses in the Pre-assessment Clinic before surgery. We advise you on what arrangements could be made to help you.

You will be seen in the clinic 10 to 14 days after your operation. Your plaster will be removed and the cut and swelling on your foot checked. If all is well you will be put back in plaster. You should continue walking with your crutches.

About six weeks after your operation you will come back to the clinic for an X-ray. If this shows the joint is healing in a good position you can start putting about half your weight through the plaster.
The physiotherapist will teach you how to do this. Later you will probably be allowed to put your full weight through the plaster.

Your surgeon will advise you when this is possible.

You will have further X-rays over the next few weeks: exactly when and how often will be determined by how well your foot is healing. When the X-rays show that the joint is fused enough to take your weight, the plaster will be removed and you can start walking without it.

We usually give people a brace to wear at this point to give them some support as they get used to walking without the plaster. This is usually worn for about a month.

**How soon can I?…**

**Walk on the foot?**

As explained above, you should not walk on the foot for at least six weeks after surgery. Your surgeon will advise you when you can start taking some weight on the foot.

When you start putting weight on your foot we will give you a special shoe that you can wear over your plaster.

**Go back to work?**

If your foot is comfortable, and you can keep your foot up and work with your foot in a special shoe, you can go back to work within three to four weeks of surgery. On the other hand, in a manual job with a lot of dirt or dust around and a lot of pressure on your foot, you may need to take anything up to six months off work. How long you are off will depend on where your job fits between these two extremes. Most people need four months off work.

**Drive?**

If you have only your left foot operated on and have an automatic car you can drive within a few weeks of the operation, when your foot is comfortable enough and you can bear weight through it. Most people prefer to wait till the plaster is removed and they can wear a shoe i.e. four months.

**Play sport?**

After your plaster is removed you can start taking increasing exercise i.e. after four months. Start with walking or cycling, building up to more vigorous exercise as comfort and flexibility permit. Obviously, the foot will be stiffer after surgery and you may not be able to do all you could before.

However, many people find that because the foot is more comfortable than before surgery they can do more than they could before the operation. Most people can walk a reasonable distance on the flat, slopes and stairs, drive and cycle. Walking on rough ground is more difficult after an ankle fusion because the foot is stiffer. It is rare to be able to play vigorous sports such as squash or football after an ankle fusion.

**What can go wrong?**

1. **Swelling**
   The main problem is the swelling of the foot, which may take many months to go down fully, and some people’s feet always remain slightly puffy. You may find that only trainers are comfortable for several months. Keeping your foot up, applying ice or wearing elastic stockings may help to keep the swelling down. Swelling is part of your body’s response to
surgery rather than the operation "going wrong" but it is a nuisance to many people who may be concerned that something has indeed gone wrong. If you are worried about the swelling of your foot, ask one of the foot and ankle team (your physiotherapist, chiropodist, nurse or surgeon) whether the amount of swelling you have is reasonable for your stage of recovery.

2. **Pain**
   If you need to have a bone graft taken from your pelvis, this is often quite painful for a couple of weeks, and some people have a little numb area beneath the scar. Again, this is normal, but can be irritating.

3. **Infection**
   The most serious thing that can go wrong is infection in the bones of the ankle.
   
   This only happens in about 5% of people, but if it does it is serious, as further surgery to drain and remove the infected bone and any infected screws or pins will be necessary. You may then need yet more surgery to get the ankle to fuse in a satisfactory position. The result is not usually as good after such a major problem as if the ankle had healed normally.

4. **Not healing**
   About 10 to 15% of ankle fusions do not heal properly and need a further operation to get the bones to fuse - basically another ankle fusion.

5. **Minor Infections**
   Minor infections in the wounds are slightly more common and normally settle after a short course of antibiotics. Sometimes the cuts, especially the one on the outer surface of the foot where the blood supply is not so good, are rather slow to heal. This usually just requires extra dressing changes and careful watching to make sure the wound does not become infected.

Research shows that 10% of ankle fusions do not heal in exactly the position intended, either because the position achieved at surgery was not exactly right or because the bones have shifted slightly in plaster. Usually this does not cause any problem, although the foot may not look "quite right". Occasionally the position is a problem and further surgery is required to correct it.

Sometimes the screws become loose as the bone heals and cause pain or rub on your shoe. If this happens they can be removed - usually a simple operation which it is often possible to do under local anaesthetic. We find that about 10% of our patients need the screw taken out.

It is unusual for a nail to need to be taken out, but if it does this is a bigger operation needing a full anaesthetic and sometimes an overnight stay in hospital.

**Consent**
Although you consent for this treatment, you may at any time after that withdraw such consent. Please discuss this with your medical team.

**Important information**
The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.
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Reference
The directorate group that have agreed this patient information leaflet: Orthopaedics

Next review date: March 2019
Responsible clinician: Mr A Skyrme, Consultant Orthopaedic Surgeon

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