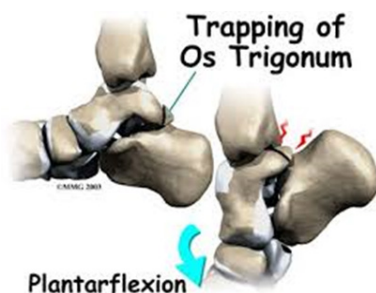


# Posterior Impingement Surgery (os trigonum)

Following your consultation with a member of the Foot and Ankle team you are considering an operation to improve your posterior ankle impingement. This leaflet aims to give you additional information about your condition and the treatment. It is designed to give you some general details about the recovery from surgery if necessary and the common risks and complications. This leaflet is not for self-diagnosis. Please ask your surgeon if you have any further questions. If anything changes before the operation please let your surgeon or their secretary know (e.g. skin problems, infections, injuries).

## What is it?

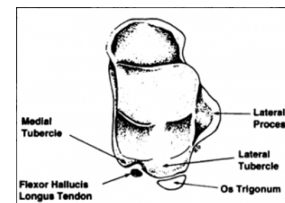
The os trigonum is an accessory (extra) bone that sometimes develops behind the talus (ankle bone) during adolescence. Not many people have this extra bone, and many of those who do don't know they do as they experience no problems with it. Os Trigonum Syndrome refers to posterior ankle pain and reduced plantarflexion caused by "the nutcracker-phenomenon". When an os trigonum is present, this accessory ossicle together with surrounding soft tissues can become wedged between the tibia, talus and calcaneus. This can lead to inflammation of the involved structures. The os trigonum syndrome can also be named the symptomatic os trigonum, the talar compression syndrome or posterior tibial talar impingement syndrome.



There are three common mechanisms for the development of an os trigonum:

1. fusion failure of an ossification center
2. fracture of the posterior margin of the tibia
3. fracture of the posterior process of the talus.

The presence of an os trigonum isn't sufficient to create the syndrome. It is usually combined with a traumatic event. The os trigonum syndrome can be caused by overuse or trauma. When it's due to overuse, it's mostly found by ballet dancers and runners. The forceful plantar flexion that happens during an "en pointe" or "demi-pointe" position, as well as by running downhill, produces compression on the posterior aspect of the ankle joint. In cause of a trauma, the os trigonum can be displaced by forced plantarflexion. Soft tissue structures, including the ankle joint capsule and surrounding ligaments, may react by forming a painful mass.



Talus bone from above.

## Why would surgery be performed?

Following diagnosis of os trigonum syndrome, non-surgical treatment is often used to relieve symptoms. This is likely to include rest, modification of activity, and taping techniques with physiotherapy. Should the non-surgical treatment fail to be effective, surgery to remove the bone is used. Removal of the bone is possible as it is unnecessary for normal functioning of the foot. Steroid injections or special scans can help us to decide whether an operation is likely to be successful.



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### What does it involve?

Surgical excision is now usually performed with keyhole techniques (arthroscopy or endoscopy). Small cuts are made either side of the Achilles tendon and special instruments used to remove the bone and soft tissue that is causing the problem. Fluid (normal saline) is used to create a working space for the instruments. The wounds are sutured, often with absorbable stitches and then the leg bandaged. Occasionally a plaster cast is used to rest the ankle for a few weeks after surgery but usually gentle movements are encouraged immediately after the operation. Some people have a tight Achilles tendon ("heel cord"). The Achilles tendon may be lengthened during surgery by making small cuts in the calf and stretching the tendon. Most people who are reasonably fit can come into hospital on the day of surgery, having had a medical check-up 2-6 weeks before. After surgery, your foot can swell up quite a lot. You will therefore have to rest with your foot raised to help the swelling to go down. This may take anything from 2 days to more than a week. If you spend too much time with the foot down, this may cause problems with the healing of your wounds. Generally you should keep the foot elevated as much as possible but, unless you are in a cast, you can rest the foot to the ground for balance. Gentle movements of the ankle are encouraged. The physiotherapist or nurse will show you how to walk with crutches. We will get you up as soon as possible! Most people are only in hospital for the day. The bandaged ankle will feel a little strange and stiff but gentle movements should be reasonably comfortable. The foot may feel numb and tingly for up to 48 hours due to the local anaesthetic used during the operation.

### Will I have to go to sleep (general anaesthetic)?

The operation can be done under general anaesthetic (asleep). Alternatively, an injection in the back, leg or around the ankle can be given to make the foot numb while you remain awake. Local anaesthetic injections do not always work and, in that case, you may have to go to sleep if the operation is to be performed. Your anaesthetist will advise you about the best choice of anaesthetic for you. In addition, local anaesthetic will be injected into your leg or foot 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 painkilling tablets as required.

### Will I have a plaster on afterwards?

You do not usually need a cast if the surgery is done using keyhole techniques. (Occasionally a larger wound is needed to remove the os trigonum; a plaster cast may be needed in these cases)

### What will happen after I go home?

By the time you go home you will have mastered walking on crutches without putting much weight on your foot (touch weight bearing). You should go around like this for 1-2 weeks being guided by pain and swelling. Keep the foot up and apply ice to the affected area (over the dressings). Try to have a seated exercise plan to keep up your strength and stamina. Take regular painkillers for the first 48 hours and then use what you need to stay comfortable. Approximately 13-17 days after your operation you will be seen by a nurse in the clinic. Your dressings will be removed and the cuts and swelling on your foot checked and stitches removed or trimmed. If all is well you can gradually increase your mobility with the help of physiotherapy. By this stage most of the pain is usually resolved and you can be putting



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your full weight through your foot. 6 weeks after your surgery, your plaster will be removed and an aircast boot is often fitted. After this, you can put your full weight on your foot with crutches. Increase the weight you put through your foot gradually as pain and swelling allow. If you are in a removable boot, take this off when safe at home and move your foot and ankle about gently. Physiotherapy will begin shortly after coming out of plaster.

### How soon can I....

#### Walk on the foot?

You can touch weight bear on the foot for 2 weeks after surgery. Your surgeon or physiotherapist will advise you when you can start full weight on the foot.

#### Go back to work?

If your foot is comfortable and you can keep your foot up, you can go back to work within 2-4 weeks of surgery. 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 2-3 months off work. How long you are away will depend on where your job fits between these two extremes.

#### Drive?

If only your left foot is operated on and you have an automatic car, you can drive within a few weeks of the operation, otherwise when your foot is comfortable enough and you can fully bear weight through it. Drive short distances before long ones. If you cannot safely make an emergency stop your insurance will not cover you in the event of an accident.

#### Play sport?

After your bandage is removed you can start taking increasing exercise. Start with walking or cycling, building up to more vigorous exercise as comfort and flexibility permit. Many people find that because the foot is more comfortable

than before surgery they can do more than they could before the operation. Walking on rough ground can be difficult for a few months. Getting back to playing vigorous sports such as rugby or football will take 2-3 months and full recovery can be more than 6 months .

### Risks

- COVID-19 infection increases the risk of complications and we recommend you read the separate leaflet about this. If you are in one of the vulnerable groups you should think very carefully about proceeding with surgery unless it is absolutely necessary
- Chronic regional pain syndrome (CRPS)
- The main problem is the swelling of the back of the foot, which may take many months to go down fully. Some people's feet always remain slightly puffy. 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 you may be concerned that something has gone wrong. If you are worried about the swelling of your foot, ask one of the foot and ankle team (your physiotherapist, nurse or surgeon) whether the amount of swelling you have is reasonable for your stage of recovery.
- The most serious possible problem is infection in the bones of the foot. This happens in less than 1 in 100 people, but, if it does, it is serious as further surgery to drain and remove the infected bone will be necessary. You may then need more surgery to encourage the foot to heal in a satisfactory position. The result is not usually as good after such a major problem as if the foot had healed normally.
- Minor infections in the wounds are slightly more common and normally settle after a



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short course of antibiotics.

- Sometimes the cuts are rather slow to heal. This usually just requires extra dressing changes and careful watching to make sure the wound does not become infected.
- Deep vein thrombosis/Pulmonary Embolus (blood clot in your legs or lungs)
- Nerve injury - small nerves run near the operation site and can be injured leaving tingling and occasionally burning pain. This usually resolves and can be addressed with a number of treatments.
- Other structures at the back of the ankle can be injured. This is uncommon but can give further symptoms or require further operations.

aboutnhs/constitution

[www.footcaremd.com](http://www.footcaremd.com) - Designed for patients and run and maintained by the American Orthopaedic Foot and Ankle Society.

### What can I do to help?

Most patients find that simple measures can make a big difference to the outcome of surgery. The evidence from studies and our experience supports this: Take simple Vitamin C and vitamin D tablets or multivitamins – needed for healing. STOP smoking – smoking slows down healing and is linked to a large increase in complications.

Keep fit and a healthy diet – many foot problems are improved by losing weight.

### Further information

The British Orthopaedic Foot Surgery Society web site is available at:

[www.bofas.org.uk](http://www.bofas.org.uk)

Mann, Coughlin and Saltzman (2007) Surgery of the Foot and Ankle 8th edition, Elsevier, Philadelphia

Myerson, S (Ed) (2000) Foot and Ankle Disorders, Saunders, Philadelphia

NHS Constitution. Information on your rights and responsibilities. Available at [www.nhs.uk/](http://www.nhs.uk/)