Wrightington, Wigan and Leigh Teaching Hospitals
NHS Foundation Trust

High Tibial Osteotomy Surgery

Version number: **5**
Last modified date: **12th November 2026**

High Tibial Osteotomy Surgery

Patient Information

Sports Knee Service

- Author ID: JA Leaflet
- Ref: SKS 004
- Version: 4

- Leaflet title: High Tibial Osteotomy Surgery
- Last review: Sept 2023
- Expiry Date: Sept 2025

Introduction

This leaflet aims to help you gain the maximum benefit from your operation. It is not a substitute for professional medical care and should be used in association with treatment at the Wrightington, Wigan and Leigh NHS Foundation Trust. Each person's operation is individual and you may be given specific instructions that are not contained in this leaflet. This guide has been prepared to help you recover from surgery and to answer many frequently asked questions. It is designed to complement the advice of your Surgeon and Physiotherapist.

Osteoarthritis of the knee

When osteoarthritis occurs in the knee, the articular cartilage becomes rough and thin and can wear down to expose the underlying bone. Articular cartilage is a layer of firm, slippery material that covers the ends of bones which make up joints. In the knee joint there is articular cartilage on the end of the femur (thigh bone), the top of the tibia (shin bone) and the back of the patella (knee cap). The bone at the edge of your joint can grow outwards forming bony spurs called osteophytes. The knee may swell and becomes gradually more painful over time.

If the knee joint is mal-aligned then abnormal forces cause excessive pressure on either the medial (inner) or the lateral (outer) aspect of the knee. Osteoarthritis in a mal-aligned knee can mean that while one side of the knee joint is damaged, the other side is relatively well preserved.

In your case, the medial aspect of your knee is damaged by osteoarthritis. You may be aware that your leg has become more bowed and this may impair your walking ability and cause pain even when at rest.

What is a high tibial osteotomy?

An osteotomy is a surgical operation whereby a bone is cut to alter its length or change its alignment. A high tibial osteotomy involves cutting into the tibia below the painful side of your knee and wedging open a large enough gap to re-align the lower leg. A metal plate is used to hold open the gap and is held in situ with screws. Over time your own bone will grow into the gap.

Often, a keyhole examination of the knee (arthroscopy) will precede the osteotomy to make a final assessment of the knee joint, under the same anaesthetic.



X-ray of knee before Osteotomy



X-ray of knee after Osteotomy





Image showing the tibia with plate and screws in place after osteotomy and close up of the plate.

Aims

The main aim of a high tibial osteotomy is to shift your body weight off the damaged area of your knee to the lateral side where the cartilage is still healthy. This in turn is intended to relieve your knee pain and should improve your walking pattern and function.

Unfortunately, a high tibial osteotomy will not return your knee to normal. It is generally considered a method of prolonging the time before a knee replacement is necessary, as the benefits typically fade after eight to ten years but can last longer.

Risks

All operations involve an element of risk:

- Potential complications from a high tibial osteotomy include residual osteoarthritis symptoms (such as stiffness or swelling), tibial fracture, delayed or non-healing of the osteotomy or pain from the metal plate (which may need later removal)

- Uncommon problems include infection and blood clot (otherwise known as deep vein thrombosis or DVT)

- Rare but potentially serious problems include nerve or blood vessel injury

- Minor complications relating to the anaesthetic such as sickness and nausea are relatively common. Heart, lung or nervous system problems are much rarer

Please discuss these issues with the doctor if you would like further information.

Benefits

The intended benefits of high tibial osteotomy surgery are to:

- Correct poor alignment of the knee

- Prolong the life of the knee joint, delaying the need for Total Knee Replacement surgery. In some patients, knee replacement may be avoided altogether.

- Reduce pain

- Improve function

- Improve quality of life

Frequently Asked Questions

Will it be painful?

This procedure can be painful for several weeks after surgery. However, once your post- operative pain settles, you should no longer experience the same level of pain from your arthritis.

The following pain control methods are used to ensure you have as little discomfort as possible after your operation:

- Local anaesthetic injection into the wound immediately post op
- Painkillers and anti-inflammatory medication taken regularly
- Ice application

Local anaesthetic injection

This is used to decrease the pain in the knee joint and the incision area immediately after your operation which can:

- Reduce the risk of feeling sick or vomiting
- Allow you to eat and drink earlier
- Enable you to get up and mobilise earlier
- Lessen the chance of an overnight stay in hospital

Painkillers

You will be given painkillers (either as tablets or injections) to help reduce the discomfort whilst you are in hospital. A one-week prescription for continued pain medication will be given to you for your discharge home. Keep the pain under control by using the medication regularly at first. It is important to keep the pain to a minimum as this will enable you to move the knee easier, recover muscle function in your thigh muscles, and begin the exercises you will be given by the physiotherapist.

Ice

If you do not have any circulatory disorders, you will benefit from applying ice regularly following surgery. This will help to minimise pain and swelling. Firstly, wrap the leg with cling film when applying prior to your wound having healed. Then place a bag of frozen peas, ice cubes, or an ice pack in a damp tea towel. Elevate your affected leg and apply your ice pack for approximately 20 minutes. This should be done regularly throughout the day.

Will I need to use crutches?

You will be provided with a pair of crutches for use when walking. The physiotherapists on the ward will instruct you in their use so that you do not place too much weight through your leg. You must use your crutches whenever mobilising for the first six weeks after your surgery. **Do not stop using your crutches** until you have been to outpatient clinic where you will have an x-ray. It is very important you follow the advice on how to use the crutches as putting weight on your knee too early may damage the cartilage regrowth and prolong healing time. It is also important that you are not on your feet for prolonged periods of time early on after the operation as this may increase your swelling and discomfort. Your physiotherapist will show you how to gradually decrease the use of your crutches once you have been given the go ahead. The crutches can be returned to Wrightington Physiotherapy Department when you have finished using them.

Do I need to do exercises?

Yes, it is important to start getting the knee moving straight away so that it does not stiffen. The Physiotherapist on the ward will show you the exercises you will need to start with.

These will be progressed as you are physically able, under the guidance of your Physiotherapist. You will be referred for continued physiotherapy as an out-patient and it is essential that you are seen within one to two weeks of your operation.

Unlike other surgical treatments for arthritis, osteotomy relies on bone healing before more vigorous, weight bearing exercises in the gym can begin. It is important that you are guided by your physiotherapist as to how you can progress your exercises.

What do I do about the wound?

When you are discharged from hospital (usually the day after surgery) you will have a compression bandage on your knee that should remain in place for 24-48 hours. After this time, remove the bandage. The sticky dressings underneath should be left alone unless they are heavily blood stained or loose.

It is important to keep your wound clean and dry until it is fully healed. Stitches or staples may need removing. This is usually carried out between 10 and 14 days after your operation. The ward staff will inform you about how to get them removed. They may send a referral to your General Practitioner (GP) or you may be asked to go to your GP to arrange this yourself. The wound should remain covered with the dressings until the stitches or staples are removed.

You may shower before the removal of the stitches / staples – you will need to put several layers of cling film around your leg to keep the area dry. Pat the area when drying yourself and do not rub over the wound. Be guided by the clinician who removes your stitches / staples as to when you can stop using cling film and leave the wound uncovered.

Is there anything I need to watch out for?

You may notice some loss around your wound. This is normal. Occasionally the area of numbness over the front of the leg can extend further down. The area will shrink in size over time but you may experience a small area of numbness permanently.

Occasionally problems do occur

Signs of possible problems include:

- Increased pain not reduced by medication, dramatic increase in knee/lower leg swelling, inability to weight-bear, redness of the skin or discharge from the wound – this could indicate an infection and you should contact the team as soon as possible. Failing that, you should attend the Emergency Department or see your GP urgently

- Marked calf pain or swelling and swelling around the ankle – this could indicate a blood clot (deep vein thromobosis) and you should contact the team urgently or failing, that attend the Emergency Department as soon as possible

- Increased temperature. It is normal to have slight warmth following surgery but anything more, or that lasts, may indicate a problem

- Stomach upset after taking medication

- Increased loss of knee movement

Unless otherwise stated, if you experience any of these problems in your first week, please contact **one of our team** or see your GP.

When do I return to the outpatient clinic?

An appointment is usually arranged for 6 weeks after you are discharged from hospital to check your progress. Please discuss any queries or worries you may have when you are at the clinic. Appointments are made after this as necessary. You will have an X-ray taken upon arrival at each of your outpatient appointments.

If you have not received an appointment, it is essential you phone the outpatient department.

Your physiotherapy appointments should begin within one to two weeks of your operation and these will continue for several weeks until you are able to return to your normal pre- injury activities.

Are there things I should avoid doing?

To protect the osteotomy in the first 6 weeks, you will need to avoid putting too much weight through your leg. Your physiotherapist will teach you how to do this.

You should avoid standing for prolonged periods of time in the early stages, as this will increase your swelling. If your leg is swollen you will need to elevate it and use ice as instructed.

It is important to avoid walking with a limp – use crutches as instructed to reduce the weight you put through your leg, but ensure you walk in the correct manner i.e. walk with the heel going down first, and do not walk on a bent knee.

When can I drive?

You must not drive for the first six weeks following your surgery. After this you may drive when you are comfortable and safe to do so. You must have stopped using crutches; be able to sit comfortably; and have enough power and bend in your knee to perform an emergency stop. The law states that you should be in complete control of your car at all times. It is your responsibility to ensure this and to inform your insurance company about your surgery. Please ask your Physiotherapist for advice.

When can I return to work?

When you return to work depends very much on the demands of your job and it is difficult to generalise. You need to feel that you can cope with the tasks involved in performing all duties of your job including any travelling required. As a general rule it is recommended that if you are in a sedentary job, you will require approximately 2-3 weeks off work. For a heavy manual job, you may require up to 12-16 weeks. Discuss this with your surgeon and Physiotherapist before you contemplate a return to work and you may also wish to consider approaching your employer regarding a phased return.

When can I fly?

As a general rule we recommend you do not fly for at least 6 weeks following your surgery.

Each airline has its own regulations about flying after surgery and you should check with your airline before flying.

The Civil Aviation Authority has published some guidance about how long a person should wait before flying after different surgical procedures/ These include: 24 hours after keyhole surgery, and three months after a knee replacement.

Restrictions may also apply to flying with other medical conditions and you should check with the doctors involved in your care and consult with the airline before you fly.

How will I progress?

During your first physiotherapy visit after surgery, your Physiotherapist will decide how often they would like to see you depending on your progress. Initially you may need regular appointments to help and support you through the early stages of rehabilitation. You will be given exercises to perform regularly at home.

Unlike other surgical treatments for arthritis, osteotomy relies on bone healing before more vigorous, weight bearing exercises in the gym can begin.

It is extremely important that you continue to work on the exercise programme you are given and follow your physiotherapist’s instructions carefully.

Your return to leisure activities will be guided by your physiotherapist and will depend on how you are progressing and whether you are reaching certain goals. Your therapist will advise you when you are physically capable to deal with different activities and will ensure you progress to a level where it is safe for you to return to certain activities.

Although surgery should alleviate the pain in your knee, you will still have osteoarthritis present in the joint. You should, therefore observe the following to help

protect the knee joint:

- avoid anything that makes your knee ache for more than 24 hours
- avoid heavy impact through the knee during every day and sporting activities
- keep the muscles in your thigh and lower leg strong

As well as keeping your joints healthy, exercise helps you to maintain overall fitness. This can help promote weight loss which can also take stress off your knees.

Cross-training exercise programmes are recommended if you have arthritis in your knees.

Vary your work-outs to include cycling, cross-trainer, rowing, and swimming and other low impact cardiovascular exercise.

You should avoid high-impact or repetitive stress sports involving sprinting, twisting, or jumping.

Useful Telephone Numbers

Admissions	01257 256211

Pre-operative Clinic		01257 256340
Wards:		
D A B	01257 256269	
John Charnley	01257 256276	
	01257 256277	
	01257 256267	
Physiotherapy		01257 256307
Out-patient Department		01257 256295
Main Switchboard		01942 244000



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