

# Knee Osteotomy Surgery

## Information for patients

### Introduction

Osteoarthritis ('wear and tear') of the knee joint is common and can cause considerable pain and sometimes deformity of the joint.

Normally when we are walking or standing, the weight goes through the centre of our knee. Unfortunately, when wear and tear affects one side of the joint, it can cause a bow leg or a knock knee. When this happens the weight is taken by the worn part of the joint, which can become more and more painful over time.

This can be seen when looking at the x-rays below. On the left the weight is going through the centre of the knees and on the right it is going through the inner part of the knees, which are worn with bow legs.



Normal alignment



Knock knees

## **Treatment**

Early treatment can involve the use of painkillers, physical therapy, injections and weight loss, but when these options no longer control the pain adequately, a major surgical procedure may be required.

Often, it is a joint replacement that is required, but this can sometimes be regarded as a risk in a young and relatively active patient due to concerns that the joint replacement may 'wear out' in the future, needing further surgery.

Osteotomy surgery is an option that can be used instead of performing a joint replacement, particularly when the wear and tear is confined to only one side of the knee joint. The principle is that the leg is re-aligned so that more weight goes through the good side of the knee rather than the bad side that has the wear and tear.

## **What are the benefits of the surgery?**

There is no evidence that leaving an arthritic knee without surgery puts it at any particular risk but it is likely that the pain and deformity may worsen over time.

This operation is typically performed to delay the need for any joint replacement. Success is therefore often recorded as how many extra years are 'bought' before needing to have a knee joint replacement. It is expected that 90% of patients should avoid needing a knee replacement in the first five years after surgery. Once 10 years after surgery are reached, the number of patients avoiding a knee replacement varies from report to report, but is somewhere between 45-80%.

## **What are the risks of the surgery?**

- Bleeding - which rarely could result in a collection of blood needing to be drained.
- Poor wound healing or infection.
- Need to remove metal work as a later procedure if it irritates your skin/tissues.
- Blood clots in the deep veins (deep vein thrombosis or pulmonary embolism).
- Delayed healing (non-union) of the bones, which could require another operation.
- A fracture into the joint requiring more metalwork to repair.
- Damage to nerves or blood vessels.
- Compartment syndrome where bleeding and swelling could increase the pressure around the muscles. This could require further operations to correct.

## **Pre-operative exercises**

Patients who already have good muscular strength and control will find their recovery is easier after surgery. Exercises which are recommended before your surgery are those 'lower impact' activities such as cycling, rowing and the cross trainer.

## **What does the surgery involve?**

The aim of osteotomy surgery is to reduce the pain and improve function. It may not produce complete pain relief but it should significantly improve the pains from the worn part of the knee.

Osteotomy surgery can be performed either with a general anaesthetic (completely asleep), or with a spinal anaesthetic (needle in the back) to numb the legs.

The surgery involves cutting and then fixing with a plate and screws the bone around one side of the knee joint. The idea is that by realigning the bones, the body weight now passes through the good side of the knee rather than the worn side.

The x-rays below show images of how the weight through the knee changes from before the procedure (left) to after the procedure (right). It can be seen that the weight has moved from being over the worn part of the joint, to closer to the unworn part of the joint.



Before



After

The bone has been cut below the knee and then opened up to make a wedge shaped opening. This is then stabilised with a plate and screws. Over time new bone fills in the gap where the opening has been made and the leg feels stronger and stronger to walk on.

## **After the osteotomy operation**

After the operation you will have a knee brace for the first four weeks to give you some extra support and confidence. You will have crutches over the first six weeks to help you share the weight of walking with the knee. Full movement is encouraged as soon as possible.

Typically you will be able to go home the following day after your surgery. After two weeks you will require a wound check and you would be seen in the clinic again after six weeks to have an x-ray and a consultation with your surgeon.

The bone gradually heals over the six months following surgery and you will feel stronger and stronger as this process occurs. Normally you would not drive in the first six weeks after your surgery.

Most patients can return to leisure sports after surgery if they wish, such as walking, hiking, cycling, swimming and tennis. This will be discussed with you by your surgeon. Contact sports and distance running are generally not recommended.

### **When should an osteotomy not be done?**

- If you smoke (as this can stop the bone healing).
- If there are signs of arthritis on both sides of the joint.
- If you have rheumatoid arthritis (or similar inflammatory forms of arthritis).
- If you have a lot of pain from the front of the joint relating to the knee cap.
- If you have very stiff knees.
- If you have a very large deformity of the knee beyond the scope of this procedure to correct.

### **Data collection**

By providing your consent to having your results collected in the United Kingdom Knee Osteotomy Register (UKKOR), this will help ongoing research into osteotomy and help to drive quality improvements. You would be asked to fill in occasional questionnaires about how your knee is feeling to you.

This information is available in audio, Braille, large print and other languages. To request a copy, please ask a member of staff.