

# Oxford Knee Group

A patient's guide to:

## **Total knee replacement Uni-compartmental knee replacement**

Together you and your surgeon have decided you need a knee replacement operation. This booklet will explain what to expect and what to do after the operation to speed your recovery.

The Surgeons within the Knee service perform over 500 knee replacements each year and have been at the forefront of developing the most commonly used uni-compartmental knee replacement in the world (the Oxford partial knee replacement). We continue to be involved in development of technologies in arthroplasty surgery and currently are looking at the role of patient specific instrumentation technologies (Signature).

We regularly review our results after knee replacement surgery to ensure patients are receiving care of the highest quality.

The whole care package patients receive is important to us from their first consultation, the process of making the right decisions, right through to the delivery of high quality surgery and rehabilitation. We monitor the whole patient experience and are grateful for feedback from patients on any aspects that they think could be improved.

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**It is important to read this booklet before discussing the operation with the surgeon and signing the orange consent form.**

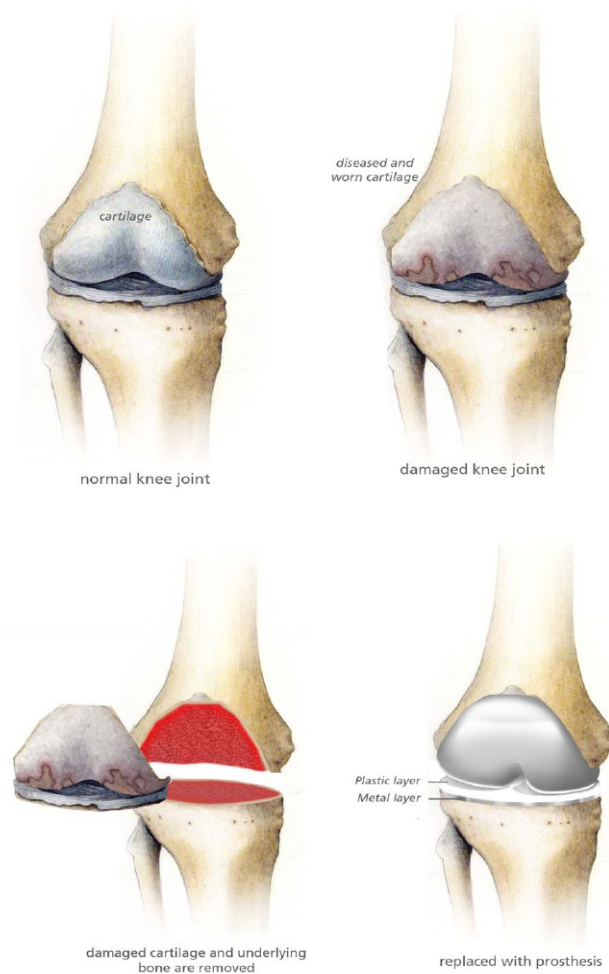
## **Knee replacement surgery**

Arthritis leads to the weight bearing surfaces of the knee joint wearing away. They are no longer smooth and free running and this leads to stiffness and pain. Eventually the joint wears out to such an extent that the bone of the femur (thigh bone) grinds on the bone of the tibia (shin bone).

Osteoarthritis often develops in just one compartment of the knee, usually the inner (medial) compartment. A uni-compartmental knee replacement (UKR) is designed to replace the worn joint surfaces on one side of the joint, thereby relieving pain and improving function. The operation can be performed through a smaller incision (12cm) which allows quicker healing and recovery.

If the arthritis involves more of the knee then a total knee replacement (TKR) may be recommended. This decision may sometimes be made at the time of

surgery when the surgeon can directly inspect the joint surfaces.



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Images c/o the British Orthopaedic Association

A TKR replaces the surfaces of the knee with plastic and metal. The femoral replacement is a smooth metal component, which fits snugly over the end of the bone. The tibial replacement is in two parts: a metal base sitting on the bone and a plastic insert, which sits between the metal base on the tibial and femoral component. If necessary the patellar surface (under the knee cap) is replaced with a plastic button, which glides over the metal surface of the femoral replacement, however the patella is often satisfactory, and may not require surgery. To be able to replace the surface of the knee joint a 20cm incision is made down the front of the knee and the joint opened. The arthritic joint surfaces are removed and the bone is shaped so that the joint replacement components sit firmly on the bone. The replacement parts are positioned and held in place with bone cement.



Xray of a uni-compartmental knee replacement

(surgical clips show length of wound, these are removed after 10-14 days)



Xray of a total knee replacement

(surgical clips show length of wound, these are removed after 10-14 days)

## Benefits of a Total / Uni-compartmental Knee replacement

The main benefit of this type of surgery is relief of pain.

Patients may also notice an improvement of function, allowing them to walk easier and further. Daily activities should become more comfortable and quality of life improved.

Some patients may find an improved range of movement in the knee after the surgery although this cannot be guaranteed.

Many patients report that the function and pain relief from their knee replacement continues to improve for up to 18 months following the surgery.

## **Risks and complications of knee replacement surgery**

The majority of patients will recover well from their knee surgery without significant problems. As with all operations there are some risks that might occur and these include:

Infection: Surgery is carried out under strict sterile conditions in an operating theatre. Antibiotics are administered intravenously at the time of your surgery. **(Any allergy to any known antibiotics should be brought to the attention of your surgeon or anaesthetist).** Despite these measures, there is still a chance of developing an infection but this is less than 1%. Infections may require further hospitalisation and treatment. Sometimes they necessitate removal of the knee replacement for a period of time; antibiotics are administered via a drip for a few weeks (during this period you may be able to go home). Following this another knee replacement may be reimplanted.

Deep vein thrombosis and pulmonary embolus: All operations on the lower limb carry a risk of blood clots forming in the deep veins of the leg, and occasionally in the lungs. We take precautions during and after the operation to try to minimise this risk. A combination of immobilisation of the limb, smoking and the oral contraceptive pill or hormonal replacement therapy all multiply to increase the risk of a blood clot. Any past history of blood clots should be brought to the attention of the surgeon prior to your operation. The oral contraceptive pill, hormonal replacement therapy and smoking should cease 6 weeks prior to surgery to minimise the risk. Following the operation we routinely use special stockings and medicines to reduce the risk of blood clots. We also encourage patients to mobilise as soon as possible after the surgery, often a few hours after the surgery itself.

Stiffness: Sometimes the knee becomes stiff after surgery (1%) due to scar tissue forming inside the knee. If this happens the knee may require a manipulation under a second general anaesthetic to help regain movement.

Pain following TKR: In 20-30% of cases patients still have some discomfort from the knee. In a few cases pain in the knee is severe and the joint is very sensitive. In these case further hospital care may be required.

Excessive bleeding: Inevitably some blood is lost at the time of surgery. Sometimes people lose larger volumes of blood and a transfusion may be required (about 10% with TKA and 1% with UKA). Bleeding is more likely to occur with patients taking aspirin or other anti-inflammatory drugs. They should be stopped at least one week prior to surgery.

Tendon, nerve or blood vessel damage: Very rarely these structures can be injured during the operation. Normally they recover, but occasionally patients may experience extensive bruising or have difficulty moving their foot up and down. Often after a knee replacement patients have a small patch of numbness to the outside of the scar due to small nerves in the skin being damaged; this normally does not cause problems and often diminishes with time.

Revision surgery: Over time the components of the knee replacement can wear out or become loose. This normally presents with worsening pain and may require further surgery to replace the joint components.

Dislocation of the bearing (specific to UKR): The UKR has a mobile plastic bearing. Rarely this can dislocate and require further surgery to reposition it (<1%).

General Risks: After any general anaesthetic there is always a risk of developing a chest infection. This risk can be minimised by early mobilisation and performing deep breathing exercises after surgery. If you have any history of respiratory problems you should inform the staff at the hospital. Any major operation carries small risks of stroke or heart attacks. These risks are small but very dependent on the patient's general health and lifestyle prior to the operation.

## **What should I expect from my Knee Replacement**

Despite the list of complications above 90% of patients will have no complications. Most people find significant improvement in their pain and disability for many years.

The results from our centre show at 7 years over 95% of the Total knee replacements will still be functioning. Knee replacements are not perfect and we have shown a proportion of patients will have some pain at longer follow-up. At 7 years 30% of patients will have started developing moderate pains in their TKR'S (J Bone Joint Surg Br. 1999 Jul;81(4):742. Murray DW, Frost SJ).

The results of our uni-compartmental replacements show they last as long as TKR's, and patients usually have better function. At 5 years following a Uni-compartmental knee replacement over 95% are still functioning with over 95% of patients still reporting good or excellent function (J Bone Joint Surg Br. 2006 Jan;88(1):54-60. Pandit H, Jenkins C, Barker K, Dodd CA, Murray DW).

If you experience problems with your knee replacement in the short or long term you will be seen by your surgical team and investigations begun to identify and treat the cause of the problem.

## **Pre-operative assessment clinic**

Prior to surgery you will attend a pre-operative assessment clinic (POAC).. The POAC is run by a team of specialist nurses. At the POAC your medical fitness for an anaesthetic will be assessed and any tests required organised. Most people require some blood tests, urine tests and a heart tracing (ECG). Occasionally other tests are required depending on your state of health..

## **Your Hospital Stay**

You will be asked to come to hospital on the morning of your surgery (unless otherwise advised).

On arrival you will have your blood pressure, pulse, oxygen saturation level and temperature measured. You will be measured for special stockings (TEDS) which are worn to reduce the risks of blood clots in your legs.

The anaesthetist and your surgeon will visit you. They will discuss the proposed anaesthetic and surgery with you again. You will have the opportunity to ask any further questions.

When you wake after surgery you will be in the recovery ward. From here you will be transferred back to your ward. When you awaken you will find your leg is firmly wrapped and you may have a small drain. The drain is to remove any bleeding from the knee; it usually comes out after 24-48hrs on the ward. A drip will be in your arm. The drip makes up for the lost fluid, which may have occurred in your operation and is used to dispense blood or drugs that you may require. The drip is usually removed 24-48 hours after surgery. You will be given regular pain relief by the nursing staff in the form of an injection or tablet as required. You may also have a urinary catheter which will remain until you are more mobile.

Following the operation a treatment plan to reduce the risks

The recovery from the operation requires about 4 days in hospital for a TKR and 1-2 days for a UKR. Either the afternoon of, or day after your surgery you will commence your rehabilitation with physiotherapy. This involves exercises to improve the strength of the muscles and to regain the range of motion of the knee. Your physiotherapist will begin to help you to get out of bed and walk a small distance. This will be progressed over the next days, until you are walking independently.

The exercising and mobilising of the knee will cause some discomfort and swelling, however this is normal, and is just part of the healing process. Any swelling and discomfort in the calf muscle should be brought to the attention of the nursing staff.



## Preparations for your home

It is normally possible to go home as soon as your wound is healing, and you can safely walk to and from the toilet, get dressed, and manage stairs. These activities will be practiced and assessed on the ward with the physiotherapists and nursing staff. If you live alone it can be useful to have some meals already prepared and frozen for when you return home. For the first few weeks walking longer distances may still be difficult and having a friend or relative to help with shopping is useful.

## Rehabilitation and Knee exercises

The following information has been designed to enable you to start your rehabilitation in hospital and continue at home. Your physiotherapist will work through this information with you prior to discharge and will be happy to answer any queries.

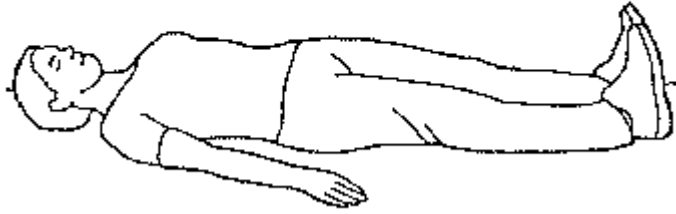
### Phase 1. Day of operation (Day 0) to Day 3

The exercises are the same whether you have undergone a UKR or TKR. If you have had a UKR you may be able to progress more quickly.

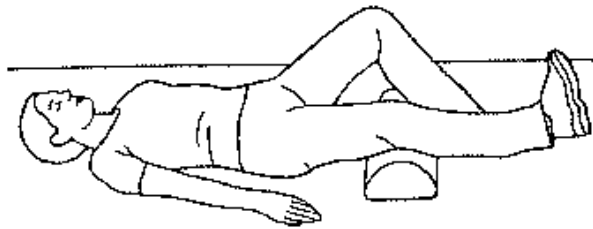
Exercises should be performed at least twice each day (15 times each).

1. **Ankle pumps:** Move your feet up and down regularly to help the blood circulation in your legs
2. **Static Quadriceps contraction:** Sit or lie with your legs stretched out in front of you. Tense your muscles on the front of the thigh by pushing the back of your knee down into the bed and pull your toes toward you. Hold

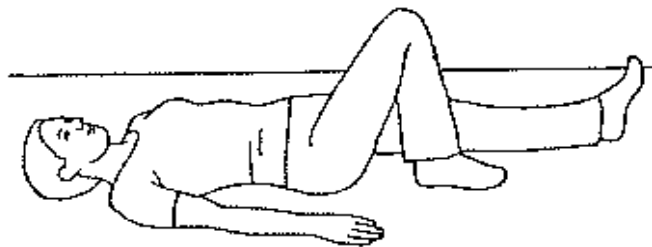
for a count of 5 seconds. Relax completely then repeat



3. **Inner Range Quadriceps:** Sit or lie on the floor or a bed, place a firm cylinder wrapped in a towel under your knee. Push the back of your knee down into the towel and straighten the knee. Hold for a count of 3 seconds, as you get stronger increase hold up to 10 seconds. Relax completely then repeat.

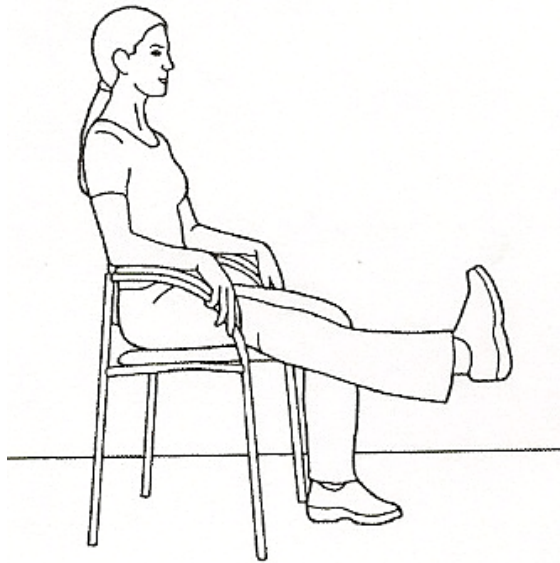


4. **Knee bending exercise in lying:** Sit or lie with your legs stretched out in front of you. Slide your heel up towards your bottom, allowing your knee to bend. Slide your heel back down again. Relax completely then repeat.



5. **Knee bending and straightening in sitting:** Sit on a sturdy surface with your feet on the floor. Straighten the knee as far as you can aiming to get

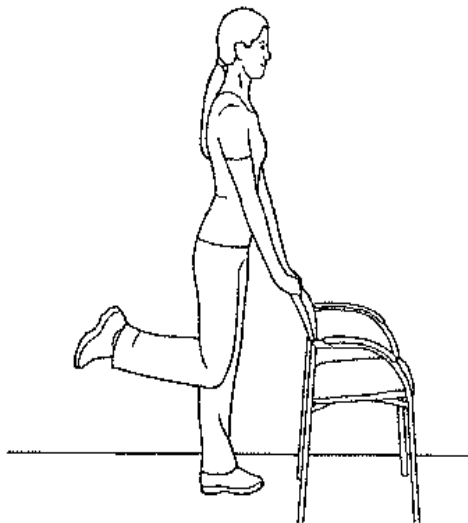
the knee completely straight, hold for 3 seconds then slowly lower your leg. Then bend your knee back as far as possible, by sliding your foot along the floor. Relax and then repeat



Phase 2: Exercises from Day 3 onwards.

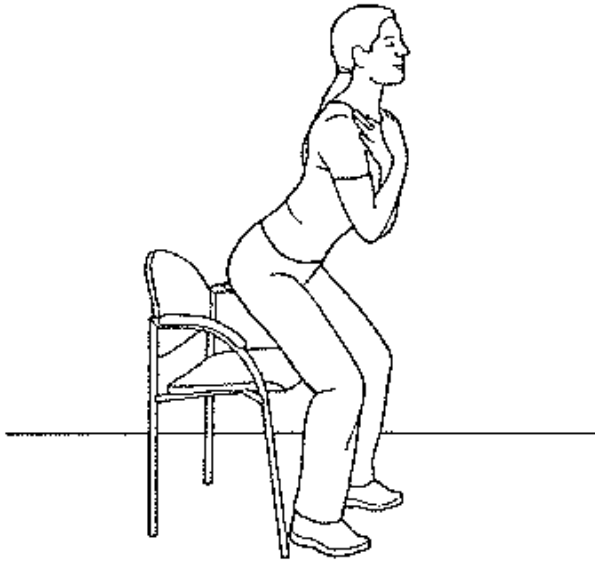
This may be a few days later if you have had a TKR (day 6 onwards). Continue exercise 1-5. But add in following exercises.

6. **Knee bending exercise in standing:** Stand with hands supported on a table or high backed chair, bend you knee by taking your heel towards your bottom and count for 5. Lower heel back to ground, relax completely and then repeat.



7. **Sitting to standing:** Sit on a firm chair with arm rests. Bend both of your knees as far back as possible keeping your feet flat on the floor. Stand up

fully and then sit down. Repeat.



8. **Step up and down:** Stand at the bottom of a flight of stairs and hold the banister for support. Place foot of operated leg onto the first step. Hold for a count of 3-5 seconds then step down. Repeat.

## Walking

You will be discharged from hospital walking safely with walking sticks or crutches.

Walking is a fantastic exercise for your new knee replacement. Initially with short distances, but as the knee becomes more comfortable the distances can be increased. Points to aim for when walking:

1. Step length. Make sure both steps are equal
2. Timing. Try to spend the same length of time on each leg
3. Always put the heel of each foot to the ground first

## Stairs

You will be taught to climb stairs before you go home from hospital.

Sequence for going upstairs:	Unaffected (good) leg first
	Operated (bad) leg
	Sticks/crutches
Sequence for going downstairs:	Sticks/crutches first
	Operated (bad) leg
	Unaffected (good) leg

Make use of the banister if you have one. Hold it with the nearest hand and hold your sticks/crutches in the other hand.

If there is no banister, or when going up a step, use one stick/crutch in each hand and follow the same sequence.

## **Bathing and showering**

It is best to avoid getting your wound wet until it is dry and the stitches clips have been removed (normally about 10 days after the operation). Once the wound is dry you may bath and shower as normal. Take care getting in and out of the bath or shower unit with wet and slippery surfaces, as your knee muscles will not yet have regained full strength.

## **Driving**

Can normally be restarted at 6 weeks after the operation. This is when most patients are comfortable walking and can safely perform an emergency stop.

## **Kneeling**

The new knee will not come to harm if you kneel on it although you should not try to kneel on it until 6 weeks after the surgery to allow the wound to fully heal. Patients often feel uncomfortable kneeling after a TKR/ UKR. This may be due to pressure on the wound and some numbness around the scar. It is wise to check the ground carefully before kneeling as if you have some numb patches of skin you may kneel on sharp objects without realising it. It is best to kneel on a soft mat or cushion and use your arms to support you on a stable piece of furniture.

## **Sleep/rest/pain**

A knee replacement is a major operation. You may find you tire quite easily after the operation and it is important to take rest. When you rest it is important to keep the leg elevated on a foot stool, this will help reduce any tendency for the leg to swell. It is common to feel frustrated on days when you feel your progress is slow. You will gradually improve strength and stamina over a few months.

The knee often remains swollen and warm compared to the other knee, this is normal and can take a long time to settle down This can be as long as 6-12 months for a total knee replacement (TKR).

Following the operation we aim to keep you as pain free as possible. Good pain control will help your overall recovery and rehabilitation. When asked about your pain it is important to give as accurate an answer as possible, this will help your medical team give the most appropriate pain killers.

## **Looking after your wound**

As your wound is healing it often feels hard and itchy, this is normal and settles with time. You may find the skin is numb on one side of the wound; this normally improves with time but may not come back to full normality. It tends not to cause any long term problems. Avoid contact with the wound, it is best to leave it covered up with dressing until the clips and sutures are removed (around 10 days).

If you notice the wound is discharging/ leaking it is best to seek medical advice, you should ring your GP; they will contact the surgical team if they are concerned.

## **Follow-up**

Patients are normally reviewed in clinic 6 weeks after the operation. You should receive a date for your follow-up appointment soon after your discharge home. Within the NHS no further follow up is usually performed.

We believe it is important to keep you and your joint under review to ensure no problems are developing. Most patients are reviewed again at 1 year with an xray and examination. If all is well at 1 year then the new knee is likely to last for many years.

You may be contacted intermittently over the years to fill in questionnaires (Oxford Knee Score) to determine how you are doing. If there are any problems these may be highlighted and you would be invited to attend for a follow-up. If you have problems with your knee replacement at any time please contact your consultant and he will review your situation.

## **Our Vision**

We hope you have a successful journey through our service and look forward to working with you to improve your symptoms and mobility.

## Notes

Use this space to write any questions you may have for the team looking after you