



**Nuffield Orthopaedic Centre
NHS Trust**

www.noc.nhs.uk

Total Knee Replacement

Information for Patients

*Delivering
Excellence*

Hip and Knee service

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A Patient's guide to Total knee replacement Uni-compartmental knee replacement

Welcome to Team Two at the NOC. 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 Nuffield Orthopaedic centre performs over 1500 joint replacements a year. It is one of the biggest Orthopaedic units in the country and has an international reputation for clinical excellence and research to improve patient care.

The Nuffield Orthopaedic Centre has been at the forefront of developing the most commonly used uni-compartmental knee replacement in the world (the Oxford partial knee replacement).

We have a comprehensive framework and structure to ensure that our treatments are of the highest standard and all the risks are reduced to a minimum (clinical governance).

The Nuffield Orthopaedic Centre has been rated in the top 20% of hospital trusts in a recent patient satisfaction survey. It is a member of the NHS group LIPS (Leadership in Improving patient safety).

We are keen to ensure that your experience with us is as good as possible and to ensure this happens regularly, monitor aspects of quality and safety, which are available to all patients to view.

All this information along with other information is available on the Nuffield Orthopaedic Centre website: www.noc.nhs.uk

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.

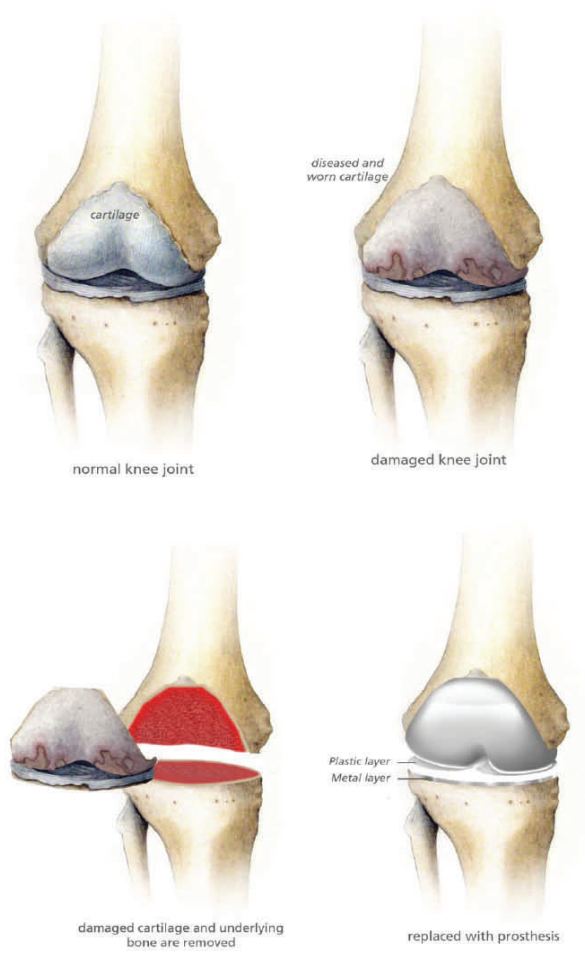
This decision may sometimes be made at the time of surgery when the surgeon can directly inspect the joint surfaces.

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.

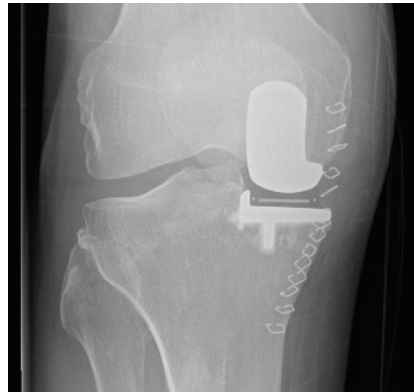
Please turn to page 6 to view images of normal, damaged and replaced knees.



7

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.



X-ray of a Unicompartmental knee replacement.

Surgical clips show length of wound, these are removed after 10-14 days.

X-ray 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 can not 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.

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 cases 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. 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 95% 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

You will receive a letter to attend a pre-operative assessment clinic (POAC) a month or so before your planned surgery. Your visit to the POAC is to help you prepare for your operation, discharge home and recovery. 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 Consultant or a member of the surgical team will discuss the proposed operation and answer any questions you may have. You will then be asked to sign a consent form. You will meet a physiotherapist who will show you some exercises for after the operation.

An occupational therapist will discuss with you any adjustments to your home situation that may be helpful for your discharge.

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 a member of the surgical team 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 24-48 hours 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 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.

The recovery from the operation requires about 4 to 5 days in hospital for a TKR and 2 days for a UKR. In this time, usually the day after 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. On the day after surgery 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 occupational therapists.

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 (Figure. 1):** 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.

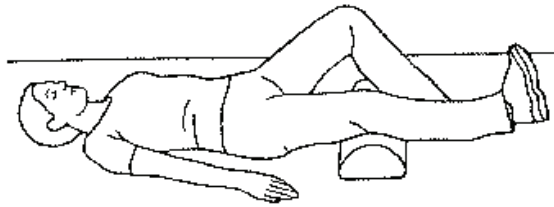
Figure 1



- 3. Inner Range Quadriceps (Figure 2):** 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

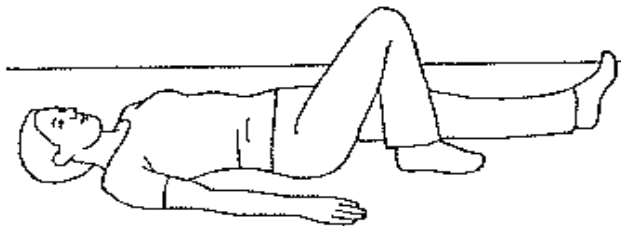
for a count of 3 seconds, as you get stronger increase hold up to 10 seconds. Relax completely then repeat.

Figure 2



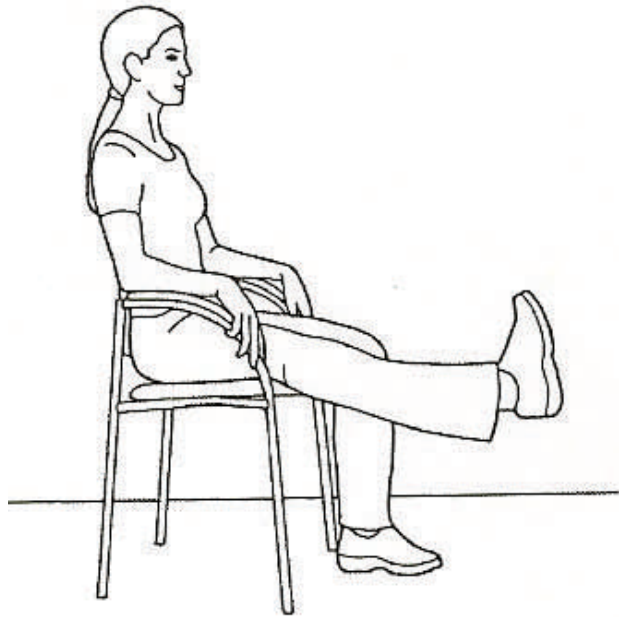
4. Knee bending exercise in lying (Figure 3): Sit or lie with your legs stretched out in front of you. Slide your heel up towards your bottom, allowing your knee to bend. Slide your heel back down again. Relax completely then repeat.

Figure 3



5. Knee bending and straightening in sitting (Figure 4): 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

Figure 4



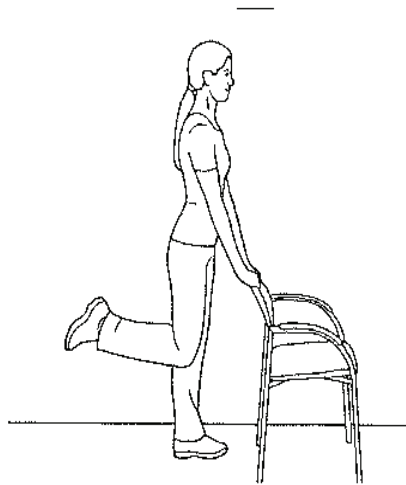
Phase 2: Exercises from Day 3 onwards

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 (Figure 5):

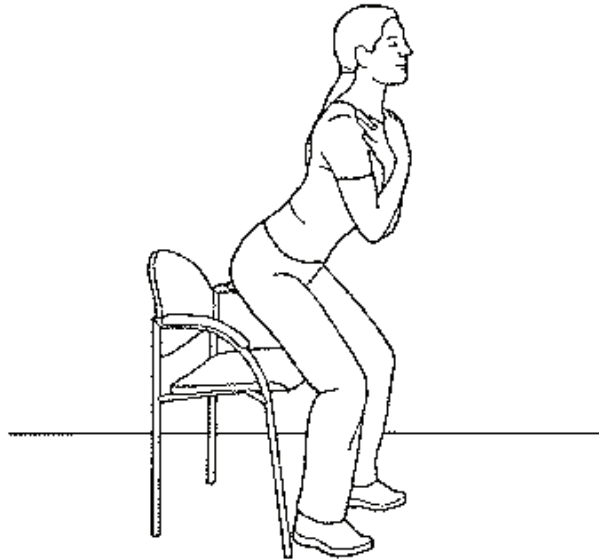
Stand with hands supported on a table or high-backed chair, bend your knee by taking your heel towards your bottom and count for 5. Lower heel back to ground, relax completely and then repeat.

Figure 5



7. Sitting to standing (Figure 6): 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.

Figure 6



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:

- Step length. Make sure both steps are equal
- Timing. Try to spend the same length of time on each leg
- 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 at the NOC 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 in the post soon after your discharge home.

After 6 weeks most people are discharged from out-patient care and no further visits to the NOC are required. In the long term if you have problems with your knee replacement please discuss the situation with your GP and he/she will refer you to the NOC if required.

Our Vision

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

As with all operations if at any stage anything seems amiss it is better to call for advice rather than wait and worry. A fever, or redness or swelling around the line of the wound, an unexplained increase in pain should all be brought to the attention of your doctor.

Useful telephone numbers

NHS Direct	0845 4647
Ward (make a note of the number in the space above)	01865 _____
Physiotherapy	01865 738074
Occupational therapy	01865 737551
Rheumatology unit	
Occupational therapy	01865 737557
Recovery	01865 738156
Outpatients	01865 738149
Orthotics	01865 227775
Pre-operative assessment clinic	01865 738237
Your consultant's secretary (make a note of the number in the space above)	01865 _____
Patient advice and liaison service (PALS)	01865 738126
Nuffield Orthopaedic Centre Switchboard	01865 741155

Notes

Notes

Are we speaking your language?

If you would like information in another language or format please call 01865 738126.

Albanian

Në se e doni këtë dokument në një gjuhë tjetër, ju lutem telefononi Zyrën e Shërbimit Këshillimor dhe Ndërlidhës për Klientët (PALS) në: 01865 738126.

Bengali

আপনি যদি এই লেখাটি অন্য কোনও ভাষায় চান তাহলে অনুগ্রহ করে আমাদের প্যালস অফিসে 01865 738126 নম্বরে টেলিফোন করবেন।

Chinese

如果你需要這文件以別的語文提供，請致電我們的病人諮詢聯絡服務 (PALS) 電話：01865 738126。

Gujarati

જો તમને આ દસ્તાવેજ કોઈ બિજી ભાષામાં જોઈતું હોય તો મહેરબાની કરીને અમારો પાલસ ઓફિસને (PALS Office) 01865 738126 ઉપર ફોન કરો.

Hindi

अगर आपको यह पत्रिका दूसरी भाषा में चाहिए कृपया हमारे पी ए पेल ऐस(PALS) ऑफिस के साथ 01865 738126 पर सम्पर्क कीजिये।

Polish

W celu uzyskania niniejszego dokumentu w innym języku należy dzwonić do Biura Doradztwa i Pomocy Pacjentom (The Patient Advice and Liaison Service – PALS) pod numer 01865 738126.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਦਸਤਾਵੇਜ਼ ਹੋਰ ਭਾਸ਼ਾ ਵਿੱਚ ਚਾਹੀਦਾ ਕਿਰਪਾ ਕਰਕੇ ਸਾਡੇ ਪੈਲਸ (PALS) ਦਫਤਰ ਨੂੰ 01865 738126 ਉੱਤੇ ਟੈਲੀਫ਼ਨ ਕਰੋ

Urdu

اگر آپ کو یہ دستاویز کسی دوسری زبان میں درکار ہے تو براۓ مہربانی ہمارے پال (PALS) کے دفتر سے اس نمبر پر رابطہ کریں۔ 01865 738126

This booklet can also be
provided in large print on
request.

Please call 01865 738126

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