

INFORMATION ABOUT YOUR OPERATION AND WHAT TO  
EXPECT AFTERWARDS AT HOME

# Oxford Unicompartmental Knee Replacement

INFORMATION DEVELOPED WITH PATIENTS FOR PATIENTS

ABOUT YOUR OPERATION

ABOUT PAIN RELIEF

ABOUT RECOVERY



READ THIS BOOKLET AND OR VISIT THE TEPI WEBSITE AT

[www.ndorms.ox.ac.uk/tepi](http://www.ndorms.ox.ac.uk/tepi)



This information booklet can also be viewed in video graphic and voice format at [www.ndorms.ox.ac.uk/tepi](http://www.ndorms.ox.ac.uk/tepi)

It has been produced to help you understand your operation and to gain the maximum benefit from your operation.

**It is not a substitute** for professional medical care and should be used in association with advice and treatment provided by your treating hospital.

**Individual variations** requiring specific instructions not mentioned here **may be required**.

Using patient feedback, this booklet was written in December 2015 by:

**Prof Andrew Price** (Professor of Orthopaedic Surgery)

**Mr William Jackson** (Consultant Orthopaedic Surgeon)

**Mr Nicholas Bottomley** (Consultant Orthopaedic Surgeon)

**Mr Abtin Alvand** (Clinical Lecturer in Orthopaedic Surgery)

**Mrs Cathy Jenkins** (Senior Physiotherapist)

**Ms Jane Moser** (Consultant Physiotherapist)

**Ms Sam Hynes** (Senior Physiotherapist)

Anaesthetic techniques and pain relief sections by:

**Dr Alex Marfin** (Consultant Anaesthetist)

**Dr Jason Reidy** (Consultant Anaesthetist)

Help and feedback was given from many people who have had Oxford unicompartmental knee replacement surgery.

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## About your knee

The knee joint is one of the largest joints within the body, working mainly as a complex hinge. It is made from four bones; the femur (thigh bone), the tibia (shin bone), the fibula and the patella (knee cap).

The bony ends of the knee joint are covered with articular cartilage, with shock absorbing meniscal cartilage found between the tibia and the femur.

The movement of the joint is normally smooth and painless as the surfaces glide over each other as the knee bends.

Right knee xray – viewed from the front



(a) without arthritis

(b) with arthritis

## **Symptoms of osteoarthritis in your knee**

Arthritis results in loss of the smooth articular cartilage that normally covers the surfaces of your knee joint. Consequently, when your knee joint moves, the worn out surfaces of the end of the thigh bone (femur) and top of the shin bone (tibia) rub against each other which may cause pain. The joint may become progressively stiff adding to the problem. Most people also get pain that can wake them at night even when the knee joint is not moving.

## **Making a shared decision about your treatment options**

For some patients with arthritis, the symptoms may improve with non-surgical treatments such as painkillers, weight-loss and physiotherapy. However, if your symptoms are not helped by these means, knee joint replacement surgery is an option. The main aim of surgery is to relieve your pain and to improve the function in your knee, helping you walk longer distances, get back to the activities you enjoy, and improve your quality of life.

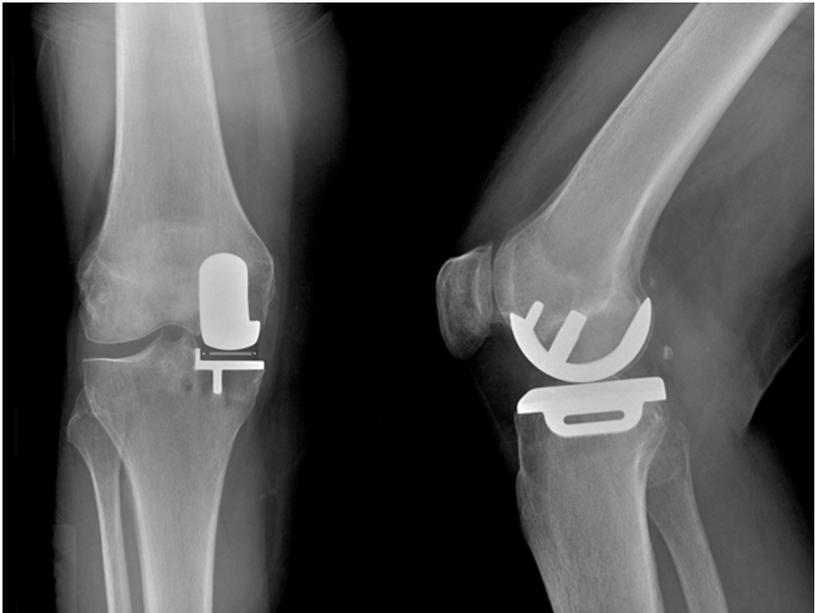
## Oxford Unicompartmental Knee Replacement

Depending on how much of your knee is affected by arthritis, surgeons can sometimes perform a partial knee replacement (also known as a unicompartmental knee replacement, UKR) as opposed to a total knee replacement (TKR). In most cases, the clinical team can say whether a UKR is possible before your surgery. However, the final decision whether to perform a UKR or a TKR is made at the time of your surgery when the surgeon inspects the knee joint surfaces and ligaments.

If you are suitable for UKR, there are a number of potential benefits. These are:

- Medical complications are minimised
- There is less blood loss during surgery and hence less chance of requiring a blood transfusion
- UKR is performed through a smaller incision with less soft tissue disruption
- Recovery is faster
- Patients often have a very good range of movement in their knee after surgery
- We see very high levels of satisfaction in patients who have had this procedure

### The Oxford Unicompartmental Knee Replacement



## How successful is UKR surgery?

Research suggests 85% of patients who undergo a UKR have a successful outcome with a large improvement in their quality of life. Of the remainder, 10% of patients improve but not quite to the extent they had hoped, and 5% have a poor outcome.

## What are the risks of surgery?

All operations involve an element of risk. Risks you should be aware of before and after your operation include:

### Medical problems

**Infection:** A number of precautions are undertaken to prevent infection during this type of surgery. They include the use of antibiotics as well as performing the surgery under strict sterile conditions in the operating theatres. Despite these precautions, there is a risk of developing infection but this is less than 1%.

**Hospital-acquired blood clots:** Operations involving the lower limb carry a risk of blood clots that can form in the deep veins of the legs (Deep Vein Thrombosis, DVT) and the lungs (Pulmonary Embolus, PE). The overall risk of DVT is between 2-5%. The risk of PE is less than 1% but it is a serious complication. We will make a careful assessment of your risk and follow the National Guidelines for minimising this risk.

**Ongoing Pain:** You may continue to experience some pain following this procedure. This is usually between 2-5%.

**Stiffness:** There is less than 1% risk that the knee joint remains stiff due to scar tissue.

**Bleeding:** In less than 5% of patients there may be continued bleeding into or around the knee which can leak into the dressing covering the wound. This can take a few days to settle, but very few patients require a blood transfusion or further surgery.

**Nerve/Vessel/Tendon damage:** This happens in less than 1% of patients.

**Dislocation of bearing:** There is a less than 1% chance that the mobile bearing of your UKR may dislocate and require surgery to address this problem.

**Need for revision/re-do surgery:** Your knee replacement may wear out or become loose over time (usually after many years) and require further surgery to replace the components. This means that for each patient there is approximately a 1% chance each year that more surgery will be required. Overall at least 80% of patients are still functioning well at 20 years after their surgery.

## Pre-operative Assessment Clinic (POAC)

POAC is to assess your medical fitness for surgery. Many patients can be assessed on the same day as their outpatient clinic appointment but some will have to return on another day for further assessment and tests. Most people will at least need some blood tests, a urine test, a tracing of their heart rhythm (called an ECG), and occasionally further knee x-rays. Please bring all your medication with you to the POAC so that we can keep a record of them.

## The day before your surgery

**Eating/Drinking/Smoking:** It is important that no food is consumed within 6 hours before your surgery. Therefore, if you have been asked to come into hospital early in the morning, we request that you do not eat anything after midnight. You may drink small quantities of water (up to 150ml) within 6 hours before your surgery. Do not smoke on the days leading up to your surgery as this will negatively affect the outcome of your surgery.

**Medication:** Please bring all your medication with you to hospital.

**Bathing/Showering:** Please bathe or shower on the morning you come into hospital. Use the special wash (called chlorhexidine or Hibiscrub) that you were given in the POAC.

## Day of surgery

Patients are routinely admitted to the ward on the day of their surgery unless there is a specific clinical reason for coming in earlier. Please arrive on the specified ward at 7am. It is important that you arrive on time as any delay in your arrival may result in your surgery being cancelled.

Note: The reason that all patients need to arrive at 7am is that sometimes the order of the operations may be changed on the morning of surgery due to clinical reasons. Hence it is important that all patients are prepared for surgery at the beginning of the day.

You will be admitted by one of our nursing staff who will check your pulse, blood pressure and other vital signs. A member of the surgical team will visit you again to answer any further questions you may have and confirm your consent for undergoing a UKR.

A member of the anaesthetic team will also visit you to explain the type of anaesthetic and the pain relief you will receive during and after the surgery. You will either have your surgery under a general anaesthetic or spinal anaesthetic. The anaesthetist will discuss the details of these two techniques with you in order to decide on the most suitable option for you.

## The surgery

UKR is performed under sterile conditions in the operating theatre. You will be anaesthetised so that you don't experience any pain or discomfort during the operation. A vertical incision about 10cm long is made over your knee and the worn out joint surfaces are removed. The lower thigh bone (femur) surface is replaced with a new rounded metal surface and the upper shin bone (tibia) surface is replaced by a flat metal surface. A plastic insert (called a "bearing") is then placed between these two metal components so they can glide smoothly on one another when you bend and straighten your knee. The wound is closed with sutures or surgical clips. It is then dressed with a sterile waterproof dressing and wrapped in a bandage.

After the surgery, you will be transferred to the recovery suite for further monitoring. You will also have a small drip in your arm for administering medication. Routine measurements of your vital signs (such as pulse and blood pressure) are taken at regular intervals and you will be transferred to one of the wards after a few hours.

## The first few days after surgery

For most patients the 'arthritis pain' has gone following the surgery. However nearly all find the knee is very painful for the first few days. This usually settles within the next 2 - 3 weeks.

You will be able to eat and drink within a few hours of your operation. Once you have done this you will be able to stand and start walking with a member of the clinical team. For most people this will be on the same day as the surgery.

Physiotherapists will ensure that you can walk independently and safely using crutches or sticks and advise you on stair climbing. During this initial 24 to 48 hour period it is common for your knee to swell and feel painful – THIS IS NORMAL. You will have a routine x-ray of your knee before going home in order to check the position of the knee replacement.

Your surgical team will visit you to check on your recovery and answer any questions you may have concerning your surgery and post-operative care. Your wound must be kept dry until your stitches or clips have been removed (usually 10 days following your operation).

Some patients may find it difficult to sit on the toilet during the first 24 hours due to feeling unsteady from the anaesthetic agents and also due to pain in the knee. This is normal and in such circumstances, the nursing staff will help you to use a bedpan.

As a routine part of preventing the development of blood clots in the leg, you will be required to wear compression stockings (called TEDS) and have blood-thinning injections (called Heparin) following your surgery for approximately

2 weeks. The exact length of this treatment would be discussed with you prior to discharge from hospital.

## Walking

You will be taught by the physiotherapist how to walk with appropriate walking aids, probably crutches, putting as much weight through your operated leg as is comfortable.

You should continue to use the walking aids provided until at least two weeks after your operation. It is important not to discard your crutches or sticks too quickly. It is better to walk well with a walking aid than to limp without it.

### Points to aim for when walking:

- Step length – make sure both steps are of equal length
- Rhythm – try to spend the same length of time on each leg
- Always put your heel on the ground first
- Remember: when turning around, take care not to twist your knee. Step around taking small steps

## Climbing up Stairs

If you prefer you may wish to use the banister, if you have one, to go up and down the stairs. Hold the banister with one hand and the crutch in the opposite hand. If you want to carry the other crutch up and down the stairs with you, hold it in a “T” shape against the other crutch as shown in the picture. Remember to carry the second crutch on the outside so that if you do drop it, it won't hit your legs or trip you up.



### Climbing up Stairs

1. Unaffected (good) leg.
2. Operated (bad) leg
3. Crutches / stick



### Climbing down Stairs

1. Crutches / stick
2. Operated (bad) leg
3. Unaffected (good) leg



## Ready to go home

Some patients will go home safely on the same day as their surgery while others take longer. For all patients, the following items are required prior to being discharged:

- Physiotherapists are happy with your mobility and you are performing your exercises correctly.
- Clinical team are happy with the status of your wound and your post-operative progress.
- Pain management for home is in place and you understand what tablets you have to take and how often you should take them.

## After leaving hospital & recovering at home

Please ensure that your wound is covered with the dressings and kept dry until the clips/sutures are removed. We will arrange for you to have this carried out either at your GP surgery by the practice nurse or at home by the District Nurse at about 10 days following your surgery.

Your follow-up visit at the hospital will normally be 6 weeks after surgery. Most patients are discharged by the orthopaedic clinic at this point if there are no outstanding issues related to their UKR. However, we will monitor your progress by sending you special postal questionnaires to ensure that you are on track in terms of your recovery.

## Pain relief after the operation.

As with all joint replacement operations, it is normal to have some pain after your surgery. You will be given painkilling tablets to help reduce this.

We strongly advise you to take the prescribed painkillers before going to bed on the day of your operation. Continue to take the painkillers regularly, at the dose prescribed, for the first few days after surgery. This tends to work much better than waiting until the knee is painful before taking pain relief because tablets normally take about one hour to reach their full effect. As the pain settles in the first 6 weeks you can reduce the dose or how often you are taking the painkillers.

You will be given two or three different types of painkilling tablets to take home. The different tablets reduce pain in different ways, so it is best to take them as a combination of drugs rather than a single drug on its own. It is normal to experience pain even in the first 12 weeks after your surgery. This will gradually improve. Your pain is likely to improve for up to 6 months after your surgery.

## **What painkilling tablets will I be given?**

This depends both on the type of anaesthetic you have and any side effects you may be susceptible to.

### **Paracetamol**

This is an effective painkiller particularly when taken regularly. It has a reputation for being weak but you should not forget it as it helps reduce the amount of other drugs you need. It has very few side effects.

### **Codeine (codeine phosphate)**

This painkiller is moderately strong when taken at the same time as Paracetamol. It causes sleepiness, mild nausea and constipation in some people. You may wish to increase fruit and fibre in your diet and take the laxative prescribed for you whilst you are on codeine.

### **Ibuprofen**

These aspirin-like drugs are very effective painkillers. They can make indigestion worse however, and you should not take them if you have had a stomach ulcer in the past. Some people with severe asthma may also have been advised to avoid them but they rarely cause breathing problems.

### **Morphine/Sevredol/Oxycodone**

These opiate tablets are the strongest you can use outside hospitals and are very effective painkillers. They can make people drowsy, nauseous or constipated. If you find these side effects troublesome you may want to stop them or reduce the dose. For most patients these are the painkillers to stop first after your operation.

## Frequently asked questions

### Who can I contact if there is a problem?

For 'Day Case' patients discharged within 48 hours of surgery, please contact the hospital using the advice given to you on discharge. If you would like medical advice in the case of an emergency, you should contact your GP.

### How long will I be in hospital?

One of the advantages of UKR is that the recovery is faster and hence many patients go home on the day of surgery or within 24 hours. Others may take longer.

Note: Patients who can be discharged home on the same day as their surgery are identified beforehand and will be provided with further information with regards to this.

### What do I do about the wound?

Please ensure that your wound is covered with the dressings and kept dry until the clips/sutures are removed. We will arrange for you to have this carried out either at your GP surgery by the practice nurse or at home by the District Nurse. You can wash or shower and use ice packs, but protect the wound with cling film. Avoid using lotions near or on the wounds until they are well healed.

### Do I need to do exercises?

Yes.

This is an extremely important part of the recovery as only **you** can get the movement and strength back in your knee. There are some simple exercises shown in this booklet and on the [TEPI website \(www.ndorms.ox.ac.uk/tepi\)](http://www.ndorms.ox.ac.uk/tepi). They aim to stop your knee getting stiff and to strengthen the muscles. It is common to have pain immediately after surgery and for some weeks. Use pain medication to control the pain and do not be frightened to gently move your knee joint and walk. Initially the best exercise will be moving the knee during normal, gentle activities.

You cannot damage the surgery that has been done but overall let the pain settle before over-challenging the knee. Follow the advice from your physiotherapist.

## **Are there things that I should avoid?**

There are no restrictions (other than the pain) to movement although kneeling on your knee is not recommended until about 6 weeks after surgery.

## **When can I drive?**

Drive once you are no longer using your crutches or sticks and feel you can be in complete control of your vehicle. For most patients it may be possible to drive at around 6 weeks depending on how quickly you are recovering.

## **When can I return to work?**

Returning to work depends on your level of mobility and your job but you must avoid any strenuous activities for at least three months (for example lifting heavy objects). Ask your consultant and physiotherapist about specific work related or sporting activities.

## **When can I participate in my leisure activities?**

In general you can start to try your leisure activities any time between 6 weeks and 6 months but this will depend on your progress following surgery and the activity involved. Regular exercise is recommended but avoid high impact activities such as running.

**Swimming:** We recommend that you use front or back crawl, avoiding breast stroke until at least six months. If breast stroke is uncomfortable when you try it, leave it for 2-3 weeks and try again once you are a little stronger. As with all exercises build up the amount you do gradually.

**Cycling:** Only cycle if your knee feels comfortable on a full turn of the pedal and it is not being forced to bend. You may like to begin with an exercise bicycle then progress to an outdoor bicycle when you feel safe to do so.

**Gym Work:** If you wish, you can return to your local gym from 6 weeks onwards. Start with gentle non-impact activities and progress the exercise intensity and variety gradually as you get stronger. Do remember to warm up prior to starting heavier exercises.

## **How long will my UKR last?**

Research shows that 80% of patients will still have a well functioning UKR at 20 years after surgery.

## Exercises

The following exercises are recommended. Individual variations requiring specific instructions may apply. If you prefer you can go to the [TEPI website](http://www.ndorms.ox.ac.uk/tepi) at [www.ndorms.ox.ac.uk/tepi](http://www.ndorms.ox.ac.uk/tepi) where there are video demonstrations of these exercises which you may find helpful.

## General advice about the knee exercises

Do your exercises about 30 minutes after you take your pain relief.

Perform these exercises once or twice a day for the first week. Start by doing each exercise 10 times or as many as comfort allows. Build to a maximum of 20 repetitions. Try to do them correctly every time.

If you feel you are struggling to do any of the exercises stop and rest. Then try it again a few hours later.

Remember that a small number of correctly performed exercises is much better than many incorrect exercises.

Little and often is best.

If:

- You get pain lasting more than 2 hours after exercise
- There is a significant increase in swelling
- You are not able to complete 6 good quality repetitions of the exercise.

Decrease the number of repetitions and/or decrease the effort you are making

If:

- You are able to complete about 6 - 12 good quality repetitions but are still finding the exercises quite difficult to perform
- The pain in your knee is staying about the same

Keep doing the same number of exercises

If:

- You can complete more than 12 good quality repetitions and the exercises are getting easier to perform
- The pain and swelling in your knee is getting less

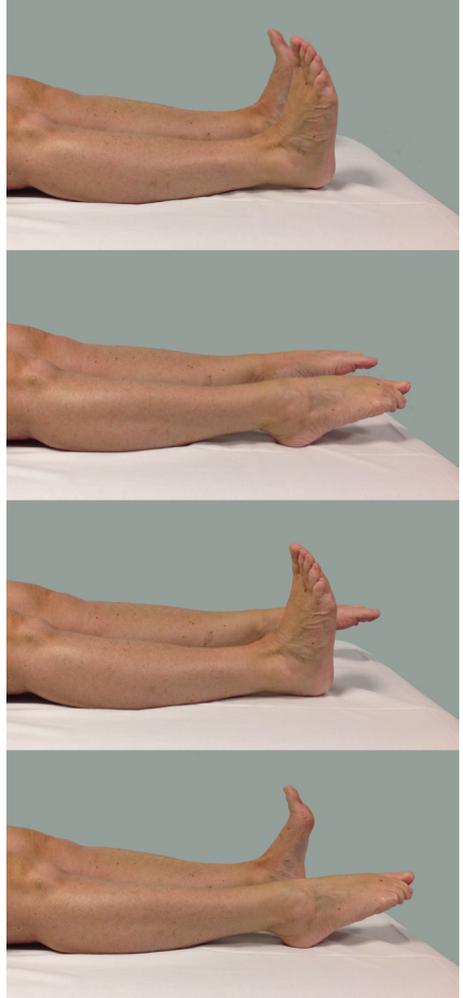
Increase the number of exercises you are doing

## Exercises

### Day 0 - Week 1.

#### 1. Ankle Pumps

- Lying on your bed pump both feet up and down by pulling your toes and ankles towards you and then pointing them away from you as far as possible.
- Repeat ten times.
- You can also do this by alternating your feet so the right one is pointed down while the left one is pulled towards you, then change direction.
- Repeat ten times.

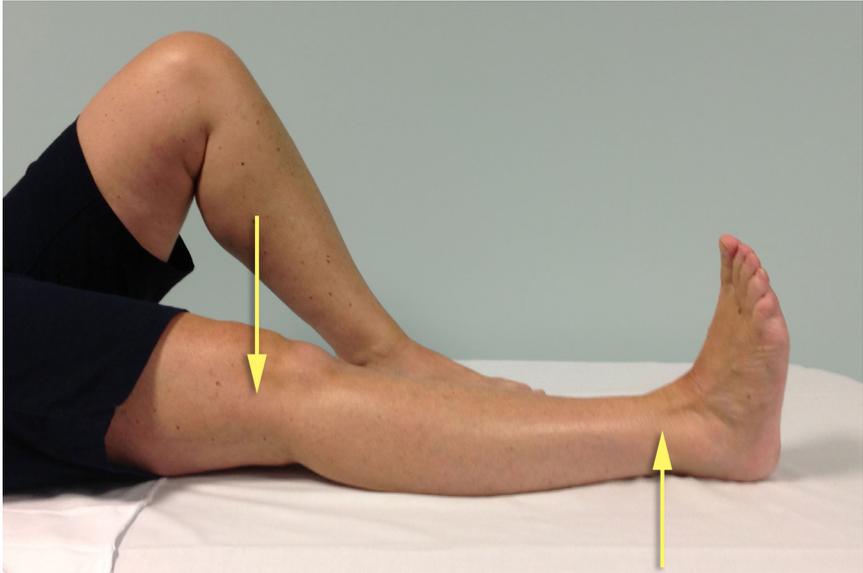


- Progress this exercise by performing the foot and ankle movements more strongly.
- When you are in bed less and walking around more you can do this exercise less often.

It is best to do exercises 2 - 5 lying flat on your back with your head on a pillow. If you are not comfortable lying flat you can sit more upright on a bed with your legs stretched out straight in front of you. All exercises are shown for the right knee.

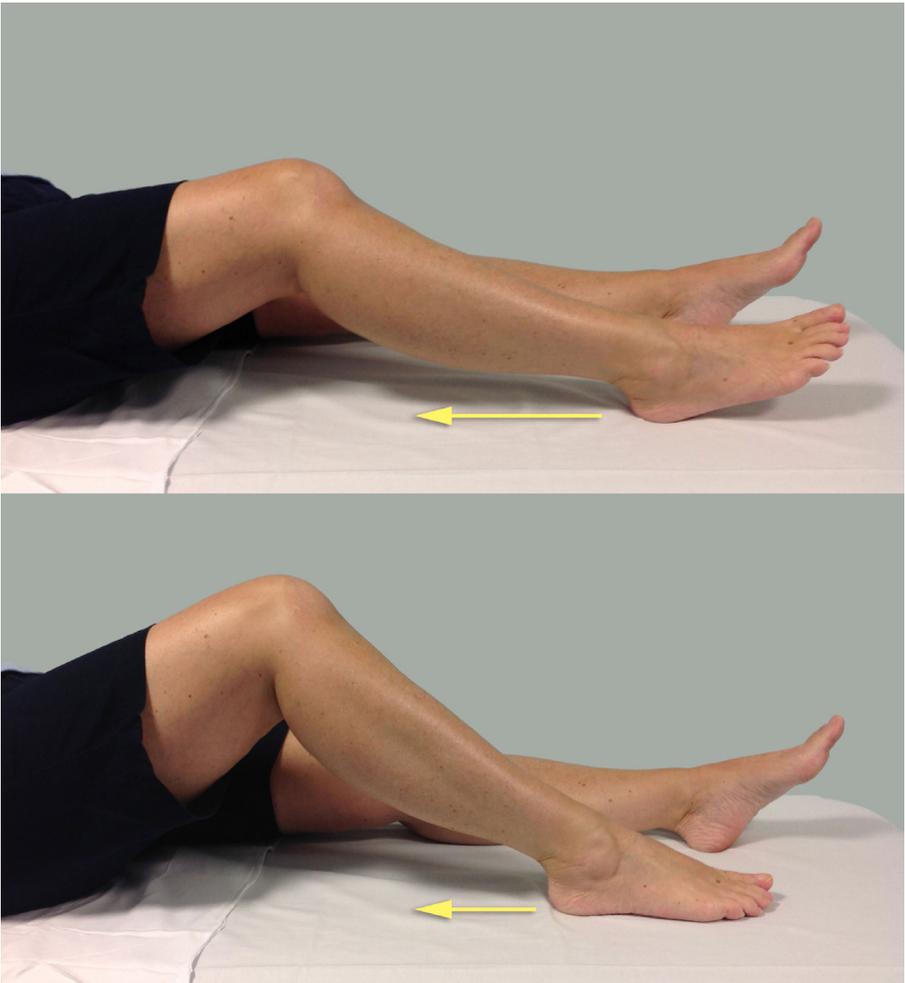
## 2. Static Quadriceps Contraction

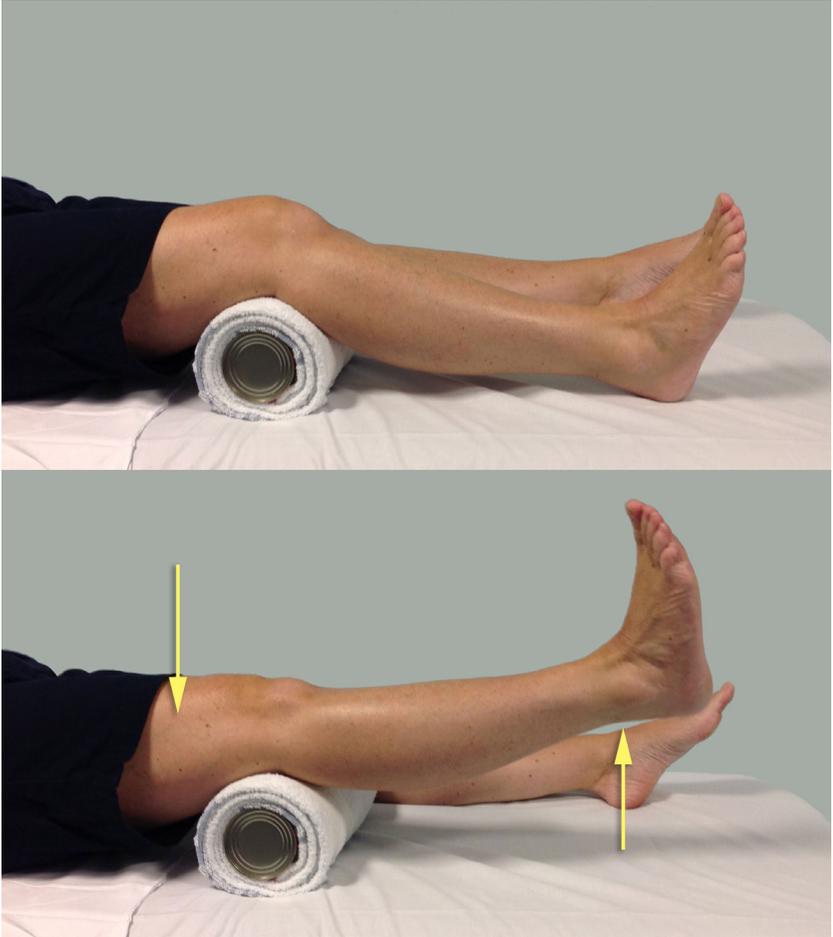
- Tighten your thigh (quadriceps) muscles by pushing the back of your knee down into the bed and pulling your toes up towards you.
- Hold for approximately five seconds and relax completely.
- Aim to repeat ten times.
- Progress by increasing the length of time you hold the contraction up to ten seconds.



### 3. Knee Bending Exercise in Lying

- Slowly slide your heel up towards your bottom, allowing your knee to bend gently. Increase the amount of bend in your knee as comfort allows.
- Slide your heel back down again and relax completely.
- Aim to repeat ten times.
- Progress by slowly and gently increasing the amount of bend in your knee.





#### 4. Inner Range Quadriceps

- Place a firm cylinder (such as a tin of soup wrapped in a towel) under your knee.
- Pull your foot and toes up, tighten your thigh muscles, push the back of your knee into the towel and straighten your knee, lifting your heel off the bed, whilst keeping the back of your knee on the towel. Aim to get your knee fully straight.
- Hold for approximately five seconds.
- Relax completely.
- Aim to repeat ten times.
- Progress by gradually increasing the hold to ten seconds as you get stronger.

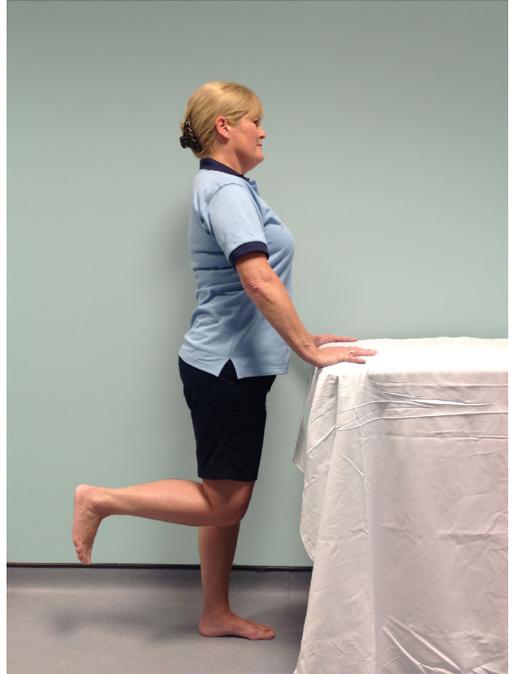
## 5. Knee Extension

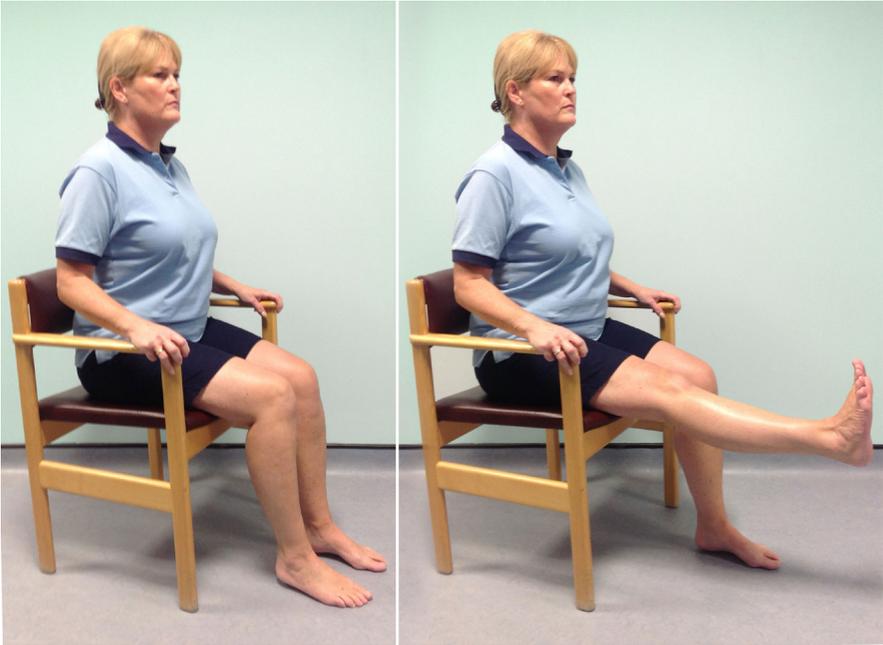
- Place a rolled up towel under the heel of your operated leg.
- Try to relax your leg allowing it to fully straighten.
- Aim to keep your leg in this straight position for approximately one minute.
- Progress by increasing the time you spend with your leg fully straight aiming for a hold of two to three minutes.



## 6. Knee Bending Exercise in Standing

- Stand with your hands supported on a high surface such as the kitchen worktop.
- Bend your knee by lifting your heel up towards your bottom.
- Hold for approximately five seconds.
- Lower foot to ground.
- Relax completely.
- Aim to repeat ten times.
- Progress by gradually increasing the hold to ten seconds as you get stronger.





## 7. Knee Straightening in Sitting

- Sit on a firm chair with your feet on the floor.
- Pull your toes up towards you tightening your thigh muscles. Straighten your knee as far as you can, aiming to get it completely straight. Hold for three seconds then slowly lower your leg.
- Aim to repeat ten times.
- Progress by gradually getting your knee completely straight as comfort and swelling allow. Progress the hold to ten seconds as you get stronger.



## 8. Knee Bending in Sitting

- Sit on a firm chair with your feet on the floor.
- Slowly slide the foot of the operated leg back towards the chair bending your knee as far as is comfortable.
- Aim to repeat ten times.
- Progress by gradually increasing how far your foot slides back under the chair as comfort and swelling allows.

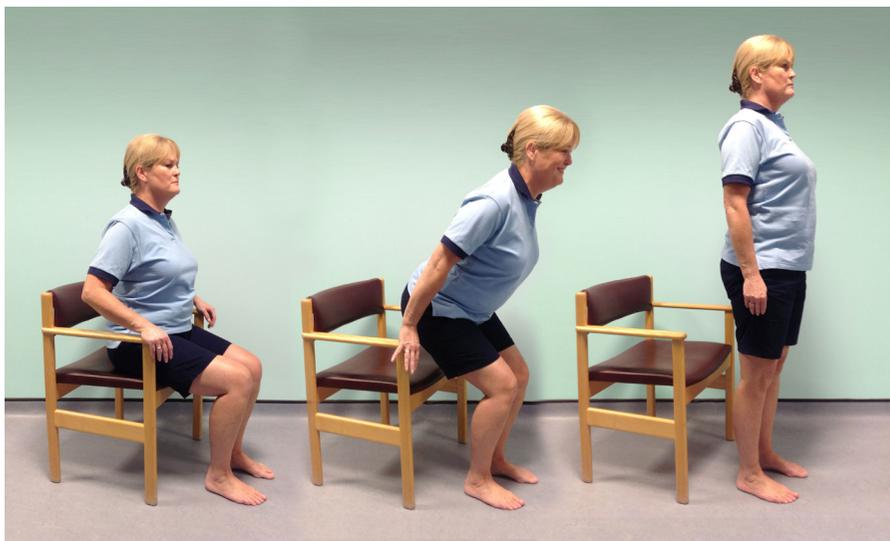
## Weeks 2-6 after your operation

Continue to perform exercises 2 – 8 and now try and increase them up to a maximum of 20 repetitions. When you feel able, add in the following five exercises.



### 9. Placing Operated Leg onto a Step and Off Again

- Stand at the bottom of a flight of stairs and hold the banister gently for support/balance.
- Place your operated leg up onto the first step . Hold for a count of three seconds. Step down.
- Aim to repeat ten times.
- Progress by slowly increasing the hold up to ten seconds.

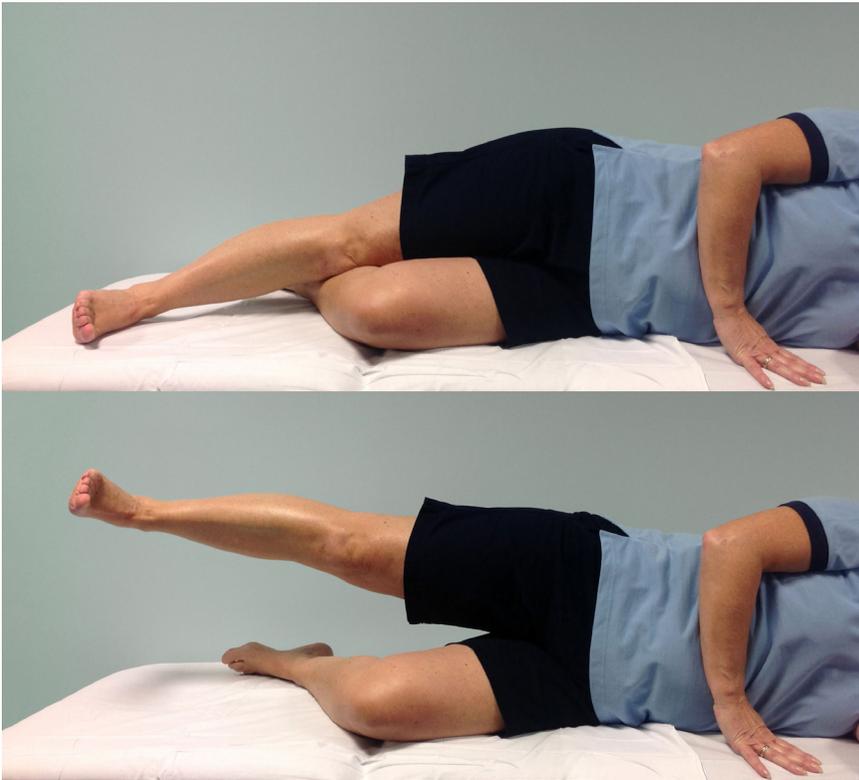


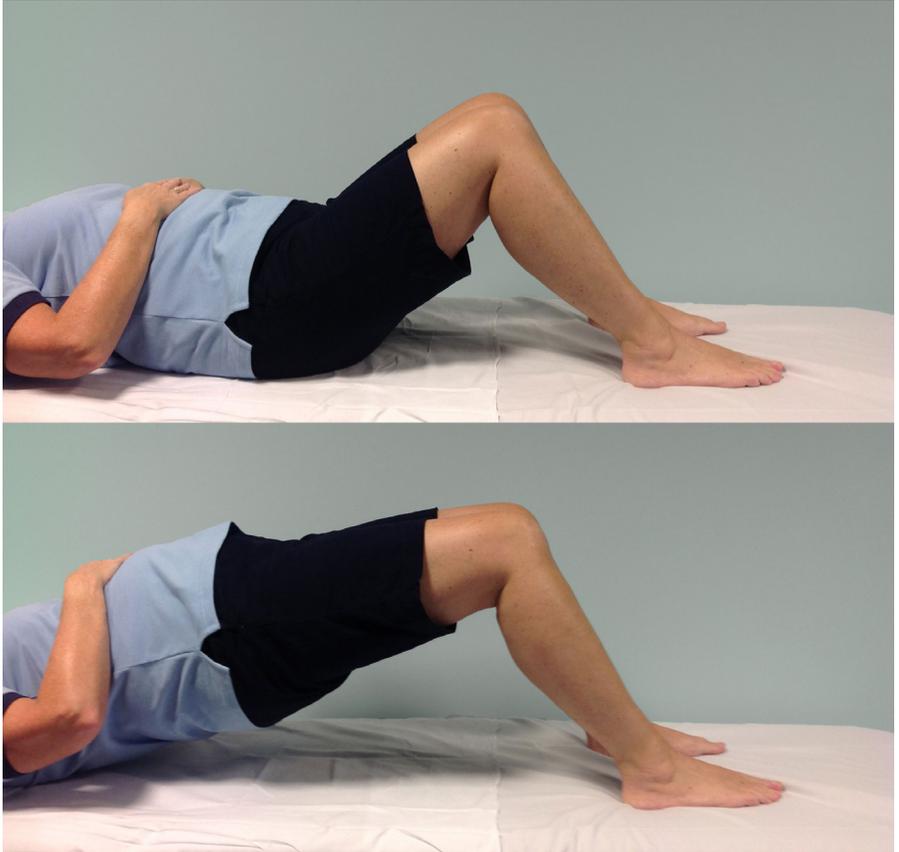
## 10. Sitting to Standing

- Sit on a firm chair with arm rests.
- Bend both knees as far back as possible keeping your feet flat on the floor.
- Slowly stand up and sit down. You may use your arms for support if you feel it is necessary.
- Aim to repeat ten times.
- Progress by decreasing the amount of support from your arms. Eventually you may not need to use your arms for support.

## 11. Leg Raise in Side Lying

- Lie on your side with your operated leg uppermost.
- Bend your lower knee to make you more balanced whilst lying on your side.
- Slowly lift and lower your operated leg using the outer muscles of the thigh.
- Aim to repeat ten times.





## 12. Bridging

- Lie flat on your back with your knees bent.
- Have your arms by your sides.
- Lift your bottom off the bed by pushing your heels down onto the bed.
- Hold for up to ten seconds.
- Relax.
- Aim to repeat ten times.
- Progress by folding your arms across your chest while doing the exercise as shown in this picture.

### 13. Calf Stretch

**You may not feel comfortable to begin these stretches until 3-4 weeks after your operation**

- Stand with your hands supported on a high surface such as the kitchen worktop.
- Have your feet pointing forwards with your operated leg behind.
- Keep your operated knee straight with your heel down on the floor.
- Lean forwards until you feel a stretch in your calf and don't let your heel come off the floor.
- Hold the stretch for 20-30 seconds.
- Relax.
- Aim to repeat three times.
- Progress by holding the stretch for up to one minute.



## General Advice:

Many patients find it very helpful to continue with some/all of the above exercises for many months after their surgery. However, a gradual increase in a normal active lifestyle which includes regular exercise such as walking and some of the above exercises will help you regain full function in your knee and prepare you for more active pastimes.

