



University Hospital
Southampton
NHS Foundation Trust

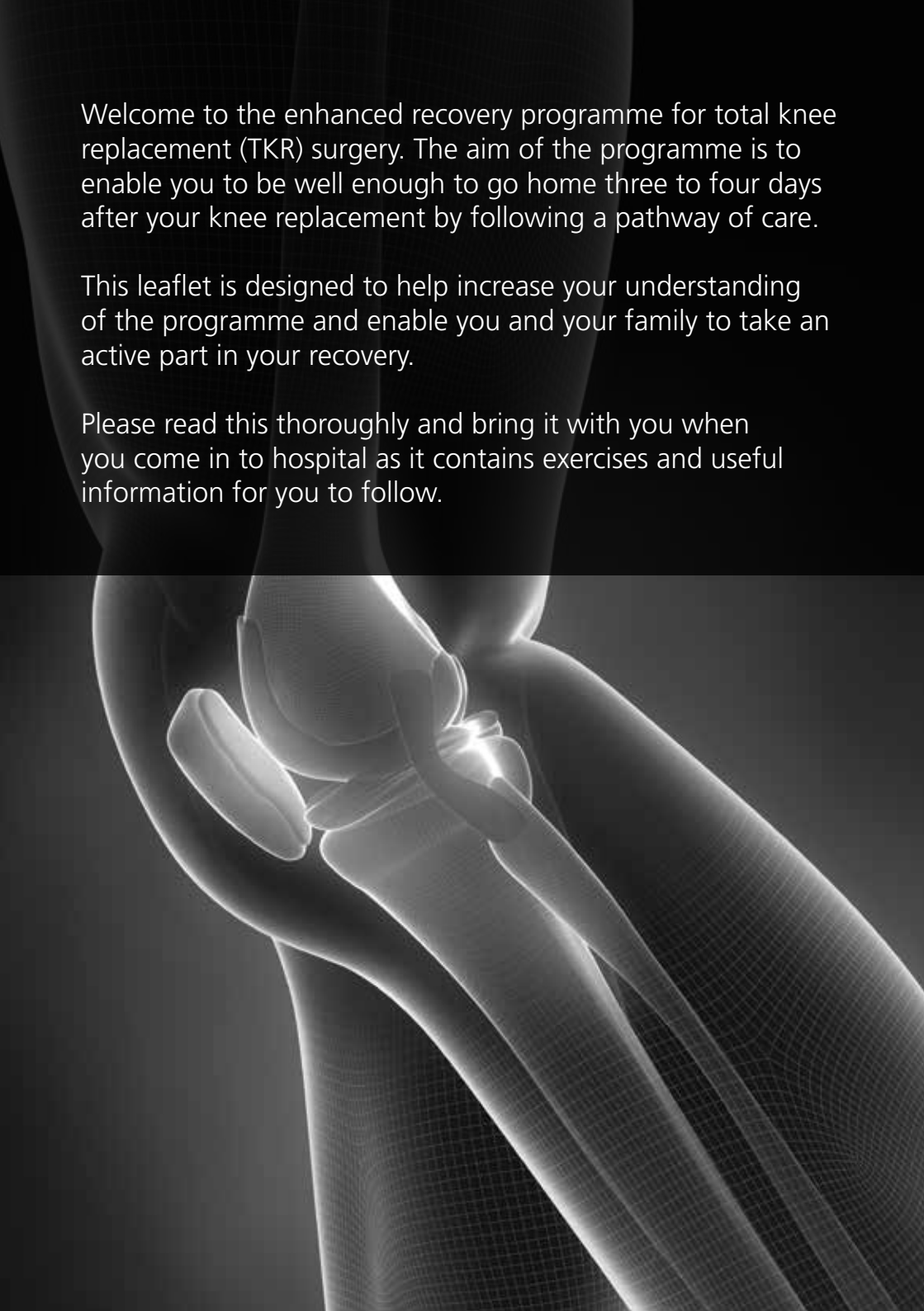
Total knee replacement

Patient information and advice



**Enhanced
Recovery**

Patients and health professionals
working together



Welcome to the enhanced recovery programme for total knee replacement (TKR) surgery. The aim of the programme is to enable you to be well enough to go home three to four days after your knee replacement by following a pathway of care.

This leaflet is designed to help increase your understanding of the programme and enable you and your family to take an active part in your recovery.

Please read this thoroughly and bring it with you when you come in to hospital as it contains exercises and useful information for you to follow.

Enhanced recovery 'joint school'

An essential part of the enhanced recovery programme is 'joint school' where you have the opportunity to meet other patients having similar surgery. It is run by the orthopaedic elective nurse practitioner and the therapy team.

This is an informal educational session enabling you to discover what will happen during your hospital stay, your rehabilitation and your recovery and also gives you the opportunity to ask any questions you may have. You will be given two carbohydrate drinks (unless you are a patient with diabetes) to take home and drink at 6.30am on the morning of your operation before you come into hospital. This will be explained in more detail in the enhanced recovery joint school.

Occupational therapy

You will be seen by a member of the therapy team who will help you overcome any identified problems. They can also identify if you will need any help after your operation with personal care and domestic tasks, so that appropriate referrals can be made as soon as you are admitted to the ward. Please try to find assistance from family or friends if possible. Before your operation, the therapy team will explain how to get equipment to support you when you leave hospital.

Some helpful hints

It is important to think about your discharge now in order to prevent any delays in you going home.

Things to consider

- Do not undertake any major decorating before your admission that leaves your house unsafe.
- Think about asking someone to come and stay with you if you think you may need help once you are home.
- Ask friends or family for help with shopping, cleaning or looking after pets if you think you may find this difficult.
- Think about personal hygiene as you may find it difficult to bath or shower.
- If stairs are difficult consider making space for a bed downstairs and arrange to have it brought down before you come into hospital.
- You may need a commode if you decide you cannot manage stairs. Your local Red Cross could supply one for you.
- Have a phone by your bed, or carry a cordless phone in your pocket if you live alone.
- Remove or move loose rugs, trailing electrical flexes and make sure the lighting is good to reduce the risk of you tripping or falling.
- Stock up the freezer with precooked food or microwave meals.
- Keep everyday kitchen items in easy reach.
- If there is room, have a table and high chair to eat at or a high chair by a work surface so you do not have to carry your meals from room to room.
- An apron with large pocket is useful for carrying small items.

If you feel you are likely to have difficulty with any of these, then a social worker will be able to give advice on extra help available.

Pharmacy information

Please bring your usual medications into hospital with you but keep them in their original containers as we cannot use them if they have been transferred into anything else.

Please make sure you have plenty of your usual medicines at home before you come into hospital.

Please do not stop taking any medication, including on the day of your operation unless advised to do so by the staff at your pre-assessment appointment.

If you do have to stop any medication, you should have been given written information at pre-assessment to remind you which to stop and when.

Some herbal and homeopathic remedies have some side effects and some can increase your risk of bleeding which could delay your surgery.

We cannot always tell which ones do this so please stop taking any remedies at least one week before your operation. This is especially important for the following remedies:

- echinacea
- ephedra
- kava
- St John's wort
- ginkgo biloba
- ginseng
- valerian
- garlic (safe in cooking).



Total knee replacement surgery

A total knee replacement is an operation to relieve pain in someone with arthritis of the knee. There are many types of knee replacements, including cemented and uncemented that are made from plastic and metal components. Your surgeon will explain the different types to you and will select the right knee replacement for you. Most knee replacements will last between ten to fifteen years.

What can be expected from your new knee?

Knee replacement surgery gives excellent pain relief, and in most cases will improve the range of movement in the joint. Most people will experience a significant improvement in their quality of life, and some will even return to sports such as golf, cycling and swimming.

What are the risks of a total knee replacement?

- Small risk of heart attack, stroke or chest infection
- Deep vein thrombosis (DVT). This is a blood clot in your leg. To help avoid this you will be given anticoagulant (blood thinning) drugs and encouraged to mobilise regularly.
- Pulmonary embolism (PE). This is a blood clot in the lungs which can come from a DVT, or arise spontaneously in the lungs. This is managed with anticoagulant drugs.
- Infection can be a complication of any surgery. Antibiotics are given before surgery starts and after your operation. Southampton Hospital has one of the lowest infection rates in the whole country, due to excellent infection control and hand hygiene policies that are in place.
- Persistent knee pain.
- Haematoma (swelling due to bleeding). This can be uncomfortable but will clear with guidance and time.
- Nerve injury is rare. The peroneal nerve runs very close to the knee and if damaged can cause numbness and weakness in the leg, resulting in a foot drop.
- In the long term, the knee replacement may wear out and become loose. This is more common in younger patients due to their active lifestyle.

Health advice

You need to be as healthy as possible for major surgery to aid a quick recovery:

- Try to give up smoking or at least cut down.
- Cut down on alcohol.
- Eat a well-balanced diet. By doing this it improves your skin condition and helps with wound healing. It will also prevent constipation.
- Maintain the correct weight for your height.
- Make sure skin is unbroken and free from sores or open areas. This will reduce the risk of infection. An infection could stop you going to surgery.
- Check for foot problems and visit a chiropodist if necessary.
- Make sure teeth and gums are free from infection.
- Walk and exercise within the limits of your pain. You will find the rehabilitation process easier if you have a good level of fitness before your surgery.

Hospital admission

The day of surgery

You should have drunk your two carbohydrate drinks at 6.30am on the day of your surgery. You will be asked to come in early on the day of your surgery to the surgical day unit (SDU) which is next to the orthopaedic unit. From there you will go to theatre. Your surgery is likely to take approximately one hour. If your operation is in the afternoon then you may be given two more carbohydrate drinks at 11am. You will spend some time in the recovery area in theatres. You may also be given something to eat and drink. A short while later you will return to the ward and the nursing staff will make sure you are comfortable and continue to do regular observations on you. Your pain will be managed with painkillers in tablet or liquid form. You may also have a drain coming from your wound and a drip into your arm to build up your fluid levels. You will also have oxygen. Some patients need to have a catheter if they are having difficulty passing urine.

You will have pneumatic pumps wrapped around your calves or feet to promote good circulation and you may also have to wear anti-embolic stockings to prevent blood clots. Please start your exercises within this booklet as soon as you are able to.

Day one after surgery

You will be given a dose of blood-thinning medication and painkillers as required. You will have a post operative x-ray which a senior doctor will review. A member of the therapy team or a nurse will come and get you out of bed and encourage you to try to walk with the use of a walking aid, for example crutches or zimmer frame. They will also reinforce your exercises and talk through the rehabilitation process.

Your drips and drains will be removed and the nurses will monitor your observations, your wound and dressings (which will be changed only if necessary). A member of the therapy team will also come to see you to talk through what you will need to be able to do at home, offering any advice needed. They will also be able to establish any further equipment you need to go home by looking at activities such as getting on and off the bed or chair and toilet. If you need more practise or do not feel ready to do this today they will see you tomorrow instead.

An ice pack may be applied to your knee to help to reduce any swelling in the knee. You can use this several times throughout the day.

Day two after surgery

You will be given a dose of blood-thinning medication and painkillers as required. The nurses will monitor your observations and your wound and dressing and will change it if necessary. By now your walking will be much easier and you should be able to move around the ward comfortably. You will also be encouraged to continue your exercises by yourself during the day in order to gain more strength and flexibility in your knee. The physio may check through the exercises with you, until you are confident to try them on your own.

They will also give you advice on how to manage at home and weaning from walking aids etc. If you are not bending your knee more than 45 degrees then you may be started on a continuous passive motion machine (CPM) to increase your knee bend. The nurses and therapy team will now have a good idea of your abilities and will now be able to confirm your discharge plans with you.

Day three and four after surgery (potential day of discharge)

You will be given a dose of blood-thinning medication and painkillers as required. Before discharge, you will practise the stairs with guidance from the physiotherapy team on the technique most applicable to your home environment.

By now you should be able to walk independently with crutches, wash and dress with minimal or no help and be ready to go home. We aim to discharge patients in the morning before 11am. Please make arrangements where possible for someone to come and collect you. You may have to wait in the discharge lounge until your transport arrives if it is after 11am.

Before going home you will be given advice on how to manage your knee in the future and when to wean off your walking aids. Your follow up physiotherapy will be discussed and planned. Please feel free to contact us on **023 8120 4452** if you have any queries whilst recovering at home.

The nursing staff will advise you on pain control and continued use of a blood thinning medication/anticoagulant, and supplies will be given to you prior to discharge.

Your wound care will be managed by either the district or practice nurse from your own GP surgery but the ward nurses will advise you before you go home.

Common patient concerns

Wound

Your wound will be on the front of your knee. Therefore it is normal that it will feel tender and sore for a few days and may be uncomfortable or feel tight when you are bending your knee. It may also ooze a little and this can be normal. The nursing staff will monitor this. You will be given the appropriate level of pain control and advised to move around to stop it being so tender. It is very common to have swelling around your wound and down your leg. This will decrease over a few weeks. Bruising may appear after a few days and again, can be variable in amount and colour. Your practice or district nurse will look after your wound once you are discharged. You may have a dressing check a few days after discharge, and if you have clips or sutures requiring removal this will be done at approximately 10 to 14 days after your operation.

If your GP starts you on antibiotics for a wound infection please ring us as soon as possible on 07768 295081 (as we would like to review it).

Scar

You will be left with a small straight scar at the front of your knee approximately six inches long. Once the wound has healed, we advise that you gently massage the scar using a simple moisturising cream (such as E45 or vitamin E cream) every day to prevent any thickening and adhesions. Apply pressure across the scar and up and down the length of the scar. Use your thumbs to work the tissues around your scar for about five minutes, once or twice a day.

Pain and stiffness

While your muscles are healing it is perfectly normal to have some discomfort in your knee. This may be due to muscle spasm or just the trauma of the surgery. Some people experience pain in their thigh and even ankle. This is called 'referred pain' and occurs due to the stresses put on the muscles and ligaments. Whilst you are in hospital you will be prescribed painkillers. It is important to take these as suffering from pain can slow down your recovery.

It is important to continue your exercises to improve the flexibility and strength of your knee, giving your knee more stability in the long run. It is also important to walk to improve your walking pattern and stamina. Periods of rest during the day also allow the muscles and ligaments to rest and recuperate, ready for the next activity.

If your pain levels concern you when home then it may be wise to contact your GP to discuss this.

Swelling and bruising

The amount of swelling and bruising varies from patient to patient. Swelling can be isolated around the knee, but can also travel as far down as the ankle and foot, and may last for some time. Bruising is common and variable in degree.

Rest periods on the bed with your legs elevated are important to reduce the swelling, but moving around and exercises are equally important to encourage a muscle pumping action to move the circulation efficiently around your leg.

Ice

Ice should be used to reduce swelling, bruising and discomfort. A bag of unopened frozen peas works well. Wrap the bag in a damp tea towel and placed on the affected area for twenty minutes. Check the area every five minutes. The skin should be pink. If the skin goes white, remove the bag until the pink flush is regained. Ice may be repeated, but with a gap between each session of forty-five minutes.

Kneeling

This may be uncomfortable to begin with, but you can kneel down whenever you are happy to try. You may find it more comfortable to place a small cushion or pad underneath to provide support. Some people may never return to kneeling comfortably due to restricted movement or discomfort.

Getting off crutches

When you go home it is important to keep up with your exercises and generally increase the amount and distance of walking. If you have been using crutches you will soon be able to progress to either two sticks, or if able to one crutch or one stick. It is usually a good idea to practise indoors with this before venturing outside where the ground is more unpredictable. Do not try to hobble around without using anything as this will encourage limping, increased pain and getting into bad habits! You will know when you feel ready to reduce the amount of support you need because you will have less pain and feel more strength around your knee. If you are using one stick or crutch, make sure you hold it in the hand opposite to your operated knee and are not limping.

Sleeping

Finding a good position to sleep in can be quite tricky. You may feel more comfortable on your back or lying on your side perhaps with a pillow between your knees to relieve the pressure. Please do not put a pillow underneath your knee as this will cause stiffness in the joint and make it more difficult to move. It may also restrict blood flow behind the knee.

Sexual activity

You can resume sexual activity whenever you feel comfortable to do so (often this is around four to six weeks after the operation).

Sometimes taking a more passive role is more comfortable initially, but bear in mind kneeling may be uncomfortable for several weeks.

Work

You can return to work after six weeks, but if you are in a manual job or do a lot of driving, you may need to discuss this with your consultant before you consider going back. If you have a sedentary occupation and are eager to return to work before six weeks then this is something that you can discuss with the team leading up to or after your operation.

Driving

You can drive after six weeks. If you have concerns then please discuss this with the doctors at your clinic review appointment.

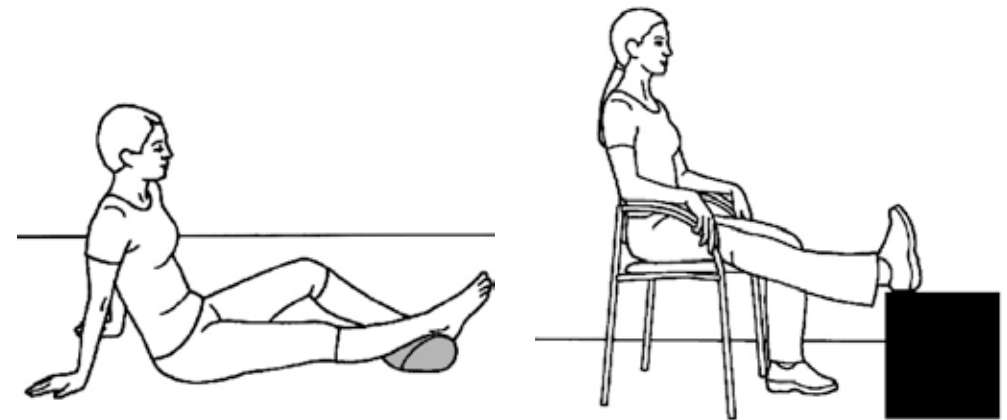
Day to day

Give yourself a goal to achieve every day, whether it's walking further, being out of bed longer or adding a few more repetitions of your exercises. This will motivate you to get better and you will see progress faster. Before getting out of bed, try your bed exercises. This will loosen up your leg and help reduce the amount of stiffness you have first thing. Change position regularly and don't sit for long periods initially as this will be uncomfortable. Half an hour at a time is sufficient until your wound has healed. Rest assured that your knee will continue to heal and progress over the next six to twelve months before really feeling like your own natural knee.

Rest postures

It is important to vary your knee position at rest.

- It is good to rest with your legs elevated while you apply an ice pack to reduce any swelling in your knee.
- It is also beneficial to rest with your knee bent to allow the structures at the front of the knee to relax and for the wound to get used to your knee bending.
- It is very important to rest with your knee fully straight, either with a towel rolled under your heel or with your foot resting on a stool (with the knee unsupported). This will allow for the structures at the back of the knee to stretch and relax. Aim to rest in this position for about fifteen minutes every hour. If at first you cannot tolerate fifteen minutes then start with a comfortable period of time and slowly increase this until you can manage fifteen minutes.



Diagrams – ©Physio Tools Ltd

Car transfers

Getting into a car

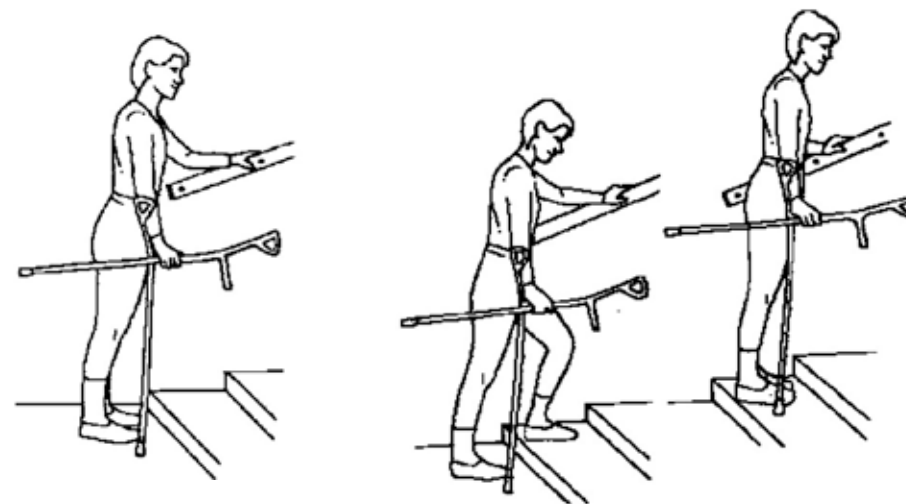
- Be sure the passenger seat is pushed all the way back.
- Recline the seat a little.
- With your walking aid in front of you, slowly back up to the car seat.
- Sit on the car seat.
- Move your legs into the car. Lean back if you need to help clear your feet if you are struggling to fully bend your knee.
- When traveling, make frequent stops and get out and walk around.

Getting out of car

- Push the seat all the way back.
- Recline the seat a little.
- Lift your legs out. Lean back if you need to help clear your feet if you are struggling to fully bend your knee. Place your walking aid in front of you and stand up (bearing more weight on the unaffected leg as this is your stronger leg to push up on).

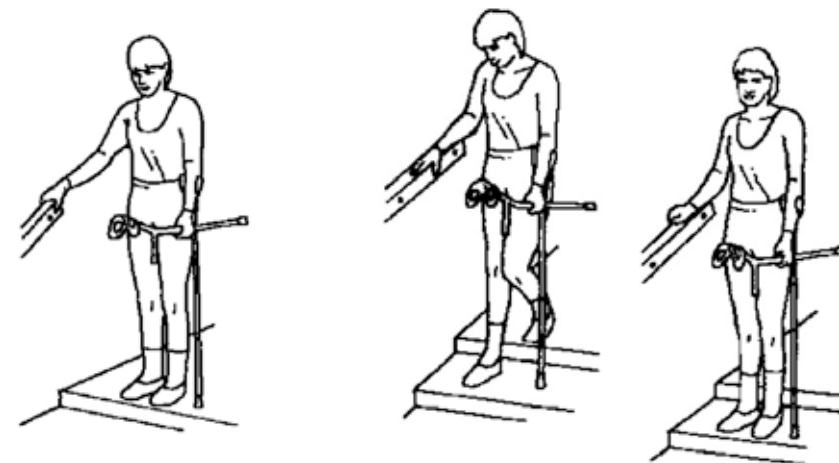
Climbing up stairs

- Use a hand rail (if available) to climb stairs (or two crutches).
- Lead with your non-operated leg, then your operated leg, and finally your crutches or stick.
- Someone should stay one step below, standing on your operated side, when helping you climb stairs.



Going down stairs

- Use a hand rail (if available) to go down stairs (or two crutches).
- Lead with your crutch or stick, followed by your operated leg, and finally your non-operated leg.
- Someone should stay one step below, standing on your operated side, when helping you go down stairs.



Diagrams – ©Physio Tools Ltd

Core exercises following knee surgery

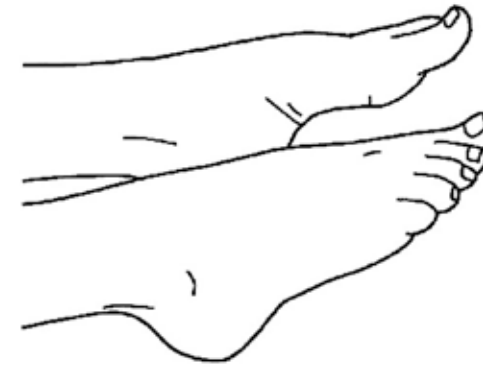
These exercises are to assist you in your recovery after knee surgery and are helpful in restoring flexibility and strength.

As a rule, these exercises should be carried out little and often. It is important not to push through pain in the early stages, but equally important that you try some in order to aid your recovery.

If the exercises give you pain, stop and try them again later, reducing the amount you do and then build them up again gradually.

The physiotherapist can advise on the right level of exercise and repetitions for you.

Diagrams – ©Physio Tools Ltd

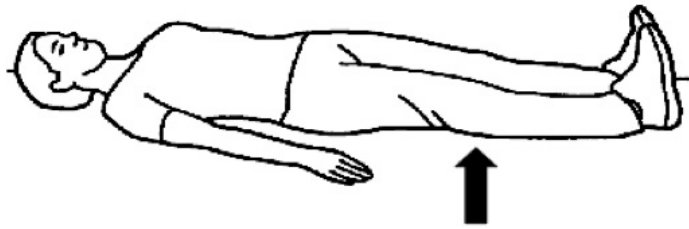


Ankle pumps

Bend and straighten your ankles to pump your feet up and down.

Repeat twenty times every hour.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

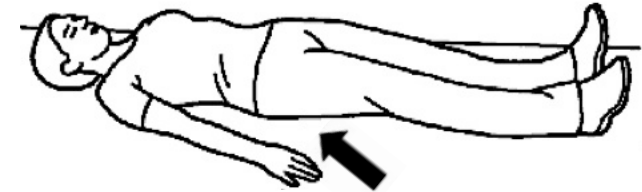


Static quad

Slowly tighten the thigh muscles of the straight leg, by pulling the toes up to point towards the ceiling and pushing your knee down into the bed while counting out loud to five. Repeat with other leg to complete set.

Repeat five to ten times.
Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

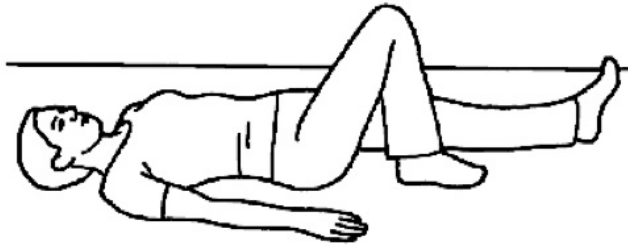


Static glutes

Squeeze buttock muscles as tightly as possible while counting out loud to five.

Repeat five to ten times.
Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							



Heel slides

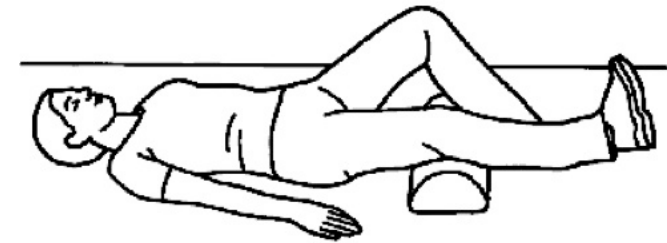
Make sure the bed is flat. Bend your knee and pull heel toward buttocks. Hold for five seconds. Then relax out straight.

Repeat five to ten times.

Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

If you find it difficult to bend your knee, you could try placing a plastic carrier bag under your heel to help it slide or use a towel or bandage to help to pull your knee up into a greater bend.



Inner range quads

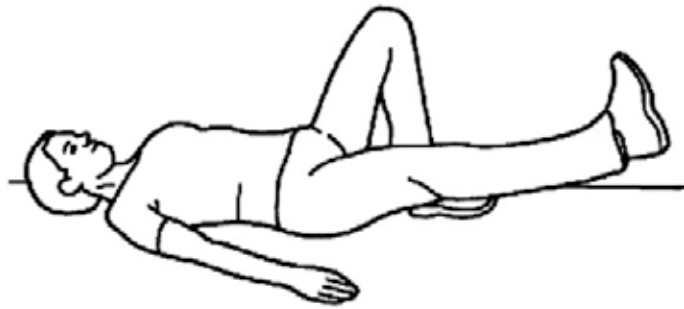
Place a rolled towel under your knee. Raise the lower part of your leg until your knee is straight. Hold for five seconds.

Repeat five to ten times.

Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

If you struggle to lift the foot off the bed, then you can try bending the other knee to help you brace or use a towel or scarf to help lift it straight but use your thigh muscles to assist the movement and hold the straightened position.

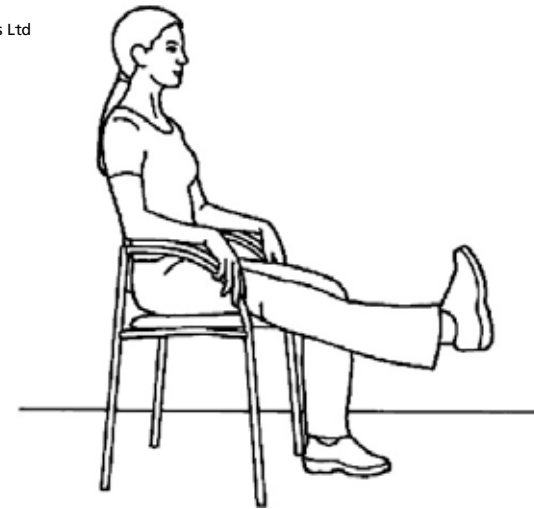


Straight leg raise

Bend your un-operated knee to help brace as you lift a straight leg up about ten inches off of the bed. Hold for five seconds and then slowly relax.

Repeat five to ten times.
Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							



Knee extension in sitting

Straighten your operated leg and try to hold it for five seconds.

Repeat five to ten times.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

If you initially struggle with this exercise then you can use a bandage to help to lift your leg into a straight knee position. Try to then release some slack on the bandage or support, but try to maintain a straight knee position.



Knee flexion in sitting

Bend your operated knee as far as you can. Hold for five seconds.

Repeat five to ten times.

Do three to five sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

To help increase the amount of knee bend that you have during this exercise, you can try:

- crossing your good leg in front of the operated leg and pushing the bend further using your good leg
- fixing your foot to the floor when the knee is bent to its maximum, then sliding your bottom forwards in the chair to increase the amount of knee bend.



Hamstring stretch

While sitting, place your operated leg straight out in front focusing on keeping your knee straight. Sit tall and reach forwards towards your toes on your operated leg. You should feel a stretch in your hamstrings behind your thigh. Hold the stretch for twenty to thirty seconds and then relax.

Repeat three times.

Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

In time you will be able to reach further down your leg as your hamstring flexibility improves.

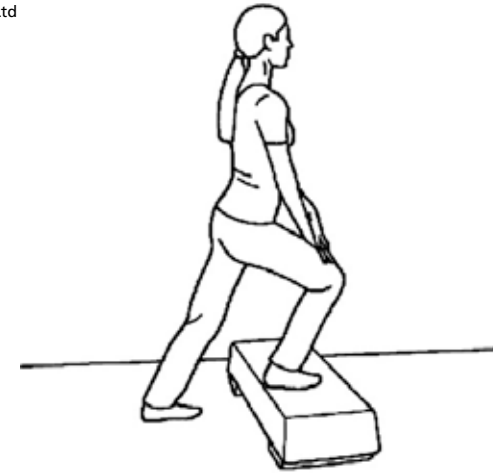


Calf stretch

Holding onto a chair or solid surface for support, step your operated leg back behind you, keeping your knee straight and heel on the floor. Your feet should be hip distance apart and both facing forwards. Bend your front knee to increase the stretch in your back calf. Hold for twenty to thirty seconds and then relax.

Repeat three times.
Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							



Lunges

Place your operated leg up onto a step. Hold onto the banisters or walls for support. Lunge forwards to bend your operated knee as much as possible. Hold for ten seconds and relax.

Repeat ten times.
Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

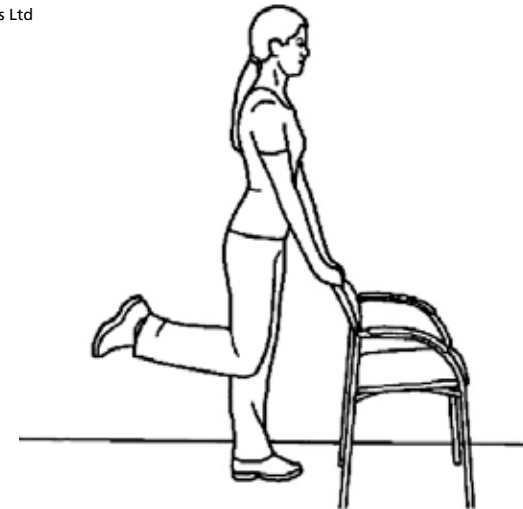


Squats

Holding onto a steady support, slowly squat down, sinking your weight into your heels. Do not lose sight of your toes under your knees as you squat down. Hold for ten seconds and slowly return to standing.

Repeat ten times.
Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

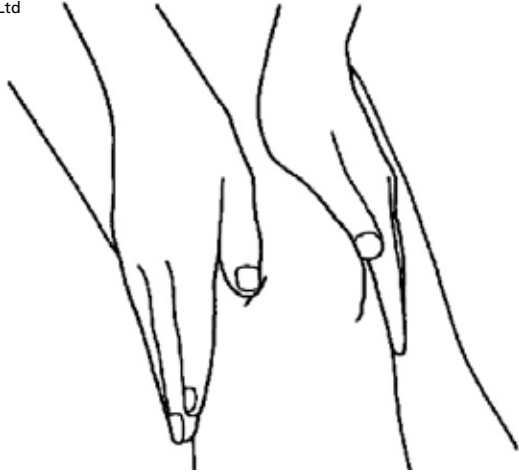


Hamstring curls

While standing, bend your operated knee to lift your heel towards your bottom. Hold for five seconds. Slowly relax.

Repeat ten times.
Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							



Patella mobilisations

Sometimes if your knee cap gets a bit stiff then this can limit your knee bend. Gently move your knee cap from side to side to mobilise this joint.

Move your knee cap ten times from side to side.
Do three sessions each day.

Date	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							

Notes



Enhanced Recovery

Patients and health professionals
working together

**If you need a translation of this document,
an interpreter or a version in large print,
Braille or on audiotape, please telephone
023 8120 4688 for help.**

www.uhs.nhs.uk

© 2019 University Hospital Southampton NHS Foundation Trust. All rights reserved. Not to be reproduced in whole or in part without the permission of the copyright holder.

Version 2. Reviewed January 2019. Due for review January 2022. 1982