Royal United Hospitals Bath
NHS Foundation Trust

Elective Knee replacement surgery

This booklet should be used in conjunction with the online film resources available at ruh.nhs.uk/jointreplacement.
Please bring it with you when you come in for your surgery.

Introduction

Following detailed assessment and discussions with your consultant and their team you have chosen to proceed to have a knee replacement. Achieving the best outcome from your planned surgery is a partnership between the hospital and yourself. The aim of this booklet is to fully prepare you for the operation and optimise your recovery.

We recommend that you read the whole booklet before you come into hospital and bring it with you for reference during your stay. The booklet is a general guide and there may be changes in your management made by your surgeon, anaesthetist, nurse or therapist – their instructions should take priority.

All members of the team are committed to providing you with the highest standards of care and we look forward to helping you with your recovery. If you have any questions please don’t hesitate to contact a member of the team.

Contents

Knee replacement surgery

Why do I need a knee replacement?

There are several reasons a joint may require replacing, but the most common is osteoarthritis. This causes the protective cartilage on the ends of your bones to break down. Bony growths can develop around the edge of the joint, and the knee can become inflamed, causing pain, swelling and problems moving the joint. These changes may restrict your daily activities and disturb your sleep. Less common reasons are inflammatory arthritis, fracture or deformity.

What is knee replacement surgery?

The knee replacement operation removes the damaged joint surfaces and exchanges them for an artificial surface made of metal and polyethylene (a form of hard plastic). The muscles, tendons and ligaments on the outside of the knee are kept in their normal place to ensure that the joint functions in a similar manner to your original knee.

The knee is made up of three compartments or parts, including the inner (medial) and outer (lateral) aspects of the knee and behind the knee cap. A **total knee replacement** typically replaces all three of these. A **partial or uni-compartmental knee replacement** replaces only one part leaving the other parts of the knee intact. Your surgeon will explain the type of knee replacement that is appropriate for you.

The surgeons undertaking or supervising joint replacement surgery are all experienced surgeons who perform the procedures regularly. As a teaching institution trainee surgeons may perform your surgery under supervision of a senior surgeon.

Are there alternatives to knee replacement surgery?

Before considering knee replacement surgery, your GP and surgeon will discuss other ways to manage the symptoms arising from an arthritic joint. These include:

- Use of painkillers and anti-inflammatory medications.
- Trying to reduce your weight, if you are overweight
- Physiotherapy to strengthen the muscles around the joint and improve movement.
- Modifications to your home, work and lifestyle and the use of walking aids.
- Cortico-steriod injections into the joint.
- Other surgery e.g. keyhole surgery or knee realignment surgery.

Possible complications

Knee replacement surgery is a very routine operation but still a major one. We do everything we can to reduce the chance of complications and the vast majority of patients will be pleased with the result of their replacement. However, in a small number of cases (approximately 20% of patients) complications can occur and you should be aware of these so that you may make an informed decision to proceed with the surgery:

- **Blood clots** – Deep Vein Thrombosis (DVT) is a blood clot that can develop in the back of your lower leg or thigh. The risk of developing a DVT is about 1.4% (less than 2 in 100). Pulmonary Embolism (PE) is a blood clot in your lungs. These are less common than a DVT but can be life threatening. The treatment is blood thinning injections followed by a course of blood thinning medications. Please see the 'Preventing blood clots in hospital and at home' section on page 17 for more information.

- **Infection** – the wound can become infected but will often settle with antibiotic treatment. Less commonly the new joint can become infected, this is more complicated and may require the new joint to be removed and re-done at a later stage.

  Although infection can be serious, it is very uncommon due to the rigorous approach to cleanliness and infection control measures used within the hospital. Patients are screened to ensure they are not carrying infections; all patients receive antibiotics just before and for 24 hours following surgery and the surgery is performed in theatres with an ultra-clean air supply. Please see 'Wound' section on page 29, for more information about recognising and raising concerns about infection.

- **MRSA** (Methicillin Resistant Staphylococcus Aureus) – is an antibiotic resistant bacterium that can naturally occur on our skin and in our nose. This can cause a wound infection after surgery that is more difficult to treat. To minimise this risk, all patients are screened and treated for MRSA if found to be positive prior to admission.

- **Joint replacement wear and loosening** – most joint replacements will last in excess of 15-20 years, but all will wear or become loose with time as they are not living tissue and cannot repair themselves. The rate of wear can be influenced by patient weight, strength and activity levels. Loose, painful artificial joints can usually, but not always, be replaced. Results of a second operation are not always as good as the first and the risk of complications are higher.

- **Nerve injury** – the incision can lead to minor damage to the sensory nerves around this area, which may cause numbness, especially over the lateral (outer) aspect of the knee. Typically this area gets smaller until the feeling fully

returns. Occasionally a small area of numbness remains permanently, but this typically won't affect your recovery.

- **Blood Loss** – there is inevitably some blood loss during surgery. Some patients bleed more than others because of the severity of their osteoarthritis or other medical conditions. The surgical team use techniques to keep this to a minimum.

  If larger amounts are lost a blood transfusion is the best way of replacing the blood rapidly. This is only given when there is no alternative as there are some risks associated, such as reactions to the blood or a chance of infection. If you have further questions related to this issue your surgeon and anaesthetist will be happy to discuss with you.

- **Ongoing pain, swelling and stiffness** - All joint replacements are initially painful, swollen and stiff, this largely settles within 6-12 weeks. In a small number of patients these problems can persist for longer. If they fail to settle your orthopaedic team will attempt to identify any treatable cause for the problems. Occasionally this requires further investigation, surgery or treatment and a small group of patients may be left with a knee that does not function as well as they or their surgeon anticipated.

- **Medical complications** – many patients undergoing joint replacement surgery have other medical problems for which they are receiving treatment. Undergoing surgery is a stressful process to the body and occasionally this can make the underlying conditions worse or trigger new medical problems. This is uncommon but problems such as heart attacks, strokes, chest infections, septicaemia, renal failure and blood clots in the lungs can occur. On rare occasions these can be fatal.

- **Problems during surgery** – there is an inevitable small risk that technical problems can occur during surgery such as bone fracture, injury to ligaments or damage to nerves or blood vessels. This is uncommon and any additional treatment required will be undertaken and you will be kept fully informed.

Enhanced Recovery Programme

Once you are listed for your joint replacement you will be taking part in an enhanced recovery programme. This programme has been in operation in the majority of NHS hospitals for many years now and aims to help you recover quickly and safely. The enhanced recovery programme is about improving outcomes and speeding up the recovery period after your surgery, as well as reducing complications. For the programme to be successful, it is important that you actively participate in the programme and take responsibility for certain aspects of your recovery.

The programme particularly focuses on:

- Providing the best preparation for surgery
- Reducing the physical stress of the operation
- A structured approach to immediate post-operative management, including pain relief
- Early mobilisation on the day of your surgery
- Early return to normal diet on the day of your surgery
- A return to normality as soon as possible

Most patients stay in hospital for 1-2 days after their operation but you may go home sooner if all is well. Everyone is different and we will treat you as an individual.

Day case Joint Replacement Surgeries

The most recent advancement of the enhanced recovery programme is the development of day-case joint replacement surgery, whereby patients are able to safely go home on the same day as their procedure. Your consultant will discuss this with you as appropriate.

Outline of events surrounding your operation

Once placed on the waiting list for a joint replacement	Watch the Joint Replacement Films on the RUH website: ruh.nhs.uk/jointreplacement
	Begin pre-op exercises (Appendix 1)
A few weeks before your operation	Complete questionnaires online via Amplitude link on email
	Complete Mypreop online and/or attend pre-assessment clinic
1 week before	You may need to stop certain medications (as advised)
	Start using Hibiscrub (a body wash) 5 days before surgery
Day before	Remember to stop eating and drinking at the time advised and shower the night before.
Day of surgery	7am arrive at the ward
	Visit from surgeon and anaesthetist
	Your operation
	Begin bed exercises & get out of bed
Day 1	Blood test and start blood thinning medication
	X-ray
	Improve moving, walking and normal basic activities to ensure confidence and safety at home on discharge
Continue with your recovery until you are ready for discharge	
14 days after your operation	Wound check by practice/district nurse Stop taking blood-thinning medication (unless advised otherwise)
	Review with local Physiotherapist
6-8 weeks after your operation	Follow-up appointment with the surgeon or their representative

Advice while waiting for your new knee joint

While you are waiting for your knee replacement there are a few things you can do that may help to speed up your recovery.

Pre-habilitation

Once you have been listed for your surgery, you can access Pre-habilitation, a service offered by the RUH Outpatient Physiotherapy Department to help you get as fit and ready for your surgery as possible.

General Exercise

General exercise is always of benefit and continues to be so while you are on the waiting list. It will also help your recovery following your operation. You may find that gentle exercise (within your limits of pain) such as swimming, cycling or walking with periods of rest in between, is of benefit.

Specific Exercise

Exercising the muscles around the knee joint will help to maintain or possibly improve the strength of your muscles and the range of movement of the joint. This can significantly improve your ability to recover after surgery. See the Exercise Chart (Appendix 1), for guidance on pre-operation exercises and start them as soon as you have been placed on the waiting list, as you are able. Do not continue with any exercise that consistently increases your pain.

General Health

Keep yourself as fit and healthy as possible whilst you await your operation. This will greatly help your recovery. If your general health deteriorates, it is important to contact your GP so that problems may be dealt with before your operation.

Pain relief

If you are experiencing pain in your joint and you are not currently taking any pain medication, or the medication you are taking is not effective, your GP may be able to prescribe something to relieve it.

Load reduction and pacing

Reducing the load taken through the knee may also help with the pain. Using a walking stick (held in the hand on the opposite side to the affected knee) will help to reduce load while you are walking.

If you are overweight, losing weight will help reduce the load going through your knee as well as reducing your risks at the time of surgery.

Pacing your daily activities, moving regularly **and** taking regular rest can reduce stiffness, overload of the joint and muscle wasting.

Foot care

It is important to pay particular attention to foot hygiene as minor wounds, sores or infections may result in cancellation of your operation. If you have any concerns, seek advice from your GP.

Skin and dental care

If you have any cuts, abrasions, ulcers, rashes or other skin conditions around your knee please see your GP as this may also delay your surgery if left untreated.

It is advisable to visit a dentist to ensure your teeth and gums are in good order prior to your operation. An infection from your teeth or gums may spread to the knee joint if left untreated.

Diet

Prior to your operation it is important that you are in good health. In order to achieve this, it is essential that you eat a healthy, balanced diet. For most people this means eating more fruit and vegetables and reducing the amount of sugary and fatty food you eat. Above all, you should aim for variety in your diet.

Smoking cessation

Smoking before or after surgery will slow the healing process and increase the risk of complications or failure of the replacement. If you would like advice and support to stop smoking please contact your GP.

What happens before your surgery?

Patient information and education films

These films have been produced by the RUH, Bath to provide you and your family, friends and carers with all the information you should need to prepare fully for the surgery, to understand what will happen during your stay and to guide you in your recovery. It is essential that you please watch them as soon as you have been listed, via the link: ruh.nhs.uk/jointreplacement. You, your family or carers can then access them again anytime, if you are unsure of the processes or best advice leading up to and beyond the surgery. The films include:

- Preparing for your Joint replacement
- Joint Replacement Surgery
- Anaesthetic
- Recovery from your Joint Replacement
- Recommended Exercises for Knee Replacement Surgery

If you have any issues accessing this information or have any questions please contact us on 01225 825513 or email: ruh-tr.electiveadmissions@nhs.net

Pre-assessment clinic

Prior to your surgery you will be asked to complete aspects of your pre-assessment through an App called MyPreOP and attend the pre-assessment clinic. A thorough health assessment will be carried out to make sure you are medically fit for surgery.

At this clinic, routine pre-operative tests will be carried out. These include urine test, a blood test and an ECG (heart trace). In some cases we will request an X-ray. You will also be screened for MRSA (Methicillin-Resistant Staphylococcus Aureus), a normally harmless bacterium that can on occasions cause wound infections. When you come in for your operation you will stay in a particular ward which only accepts patients that we know do not have MRSA. If your screening tests show signs of MRSA then you will be contacted and given treatment to clear this.

We need accurate information about your current medication to ensure we can give you the best possible care. Please bring a list of all your regular medications, including any inhalers, eye drops, patches or creams. You will be asked what medication you usually take and how often you take it. It will also be helpful for you to bring in the repeat prescription request forms from your GP surgery. Please also remember to mention any medicines you buy regularly (that are not prescribed by your doctor) and any herbal or vitamin supplements that you might be taking.

In anticipation of your surgery you may be asked to stop taking some of your medication before coming into hospital (e.g. if you take warfarin) and you may be

prescribed alternative medication leading up to the operation. You will be advised by a nurse or a doctor if this is necessary.

Unfortunately, any unresolved health issues may delay you having surgery. A knee replacement is an elective (non-emergency) operation so it is vital you are as healthy as you can be prior to surgery.

Please be aware that you can be in the pre-assessment clinic for 3-4 hours.

Consent clinic

During the pre-assessment clinic or at a separate appointment, called a consent clinic, you will be seen by your consultant. You will be asked to sign a consent form if you have not already done so. This is a form giving your approval for the operation, after the risks, benefits, and nature of the procedure have been explained to you. Please feel free to bring a list of questions should you have any.

Pre-operative Body Wash (Hibiscrub)

You will be given a bottle of Hibiscrub at your pre-assessment clinic appointment. This is a special skin cleanser to reduce the bacteria on your skin and so reduce your risk of developing an infection after surgery. You should replace your normal shower gel or soap with Hibiscrub for 5 days prior to your operation. You will be given an information card on how to use it.

Prepare your home

Typically, when you first go home after your operation you will be safe walking around your home with some walking aids but your confidence, balance and normal activities will be restricted.

Think about the things you normally do and make some adaptations to make things easier for yourself in the first few weeks after your surgery, such as:

- To make it easier to move around, clear walkways by removing any loose rugs or other trip hazards.
- In the kitchen you should move items that you will need after your operation to the work surface or into a cupboard/drawer/fridge shelf mid-thigh height or higher. This will make things easier for you to do independently.
- If you cook for yourself, consider making or buying some ready meals to put in the freezer. Plan to eat in the kitchen if you can, as you are most likely to come home using 2 walking aids. This makes carrying things difficult.
- If you normally shop for yourself, freeze some essentials such as bread, milk or other food before your admission or plan a supermarket delivery slot.
- If you can, get up to date with household chores like cleaning and laundry, as you may not feel up to doing these tasks for a few weeks after surgery.
- Make sure you have some “over the counter” painkillers such as paracetamol at home. Also ensure you have enough of your prescription medicines at

home to last you for at least 1 month after your operation. **We will not prescribe your routine medications at discharge from hospital.**

- **Before your admission to hospital, it is important that you identify someone who can collect and take you home on your proposed day of discharge. Please be aware this may be as early as the day after your operation.**

Changes in your health

- It is important that you notify the pre-assessment unit of any changes to your health status in the time following your initial appointment. If you have an admission date for surgery please be aware that coughs, colds and chest infections may affect your fitness for surgery.

Checklist of items to bring to hospital

Sometimes the wards may be cooler or warmer than you are used to at home. Staying warm is important not only for your comfort but it can also lower the risks of post-operative complications. Packing thinner layers that can be added or removed depending on your comfort is advisable. If you feel cold at any time please tell the nursing staff who will arrange for an extra blanket.

Storage space is limited. Please pack sparingly and bring a small bag. You will have a small bedside cabinet for your personal items with a lockable cupboard for your medicines (your nurse will hold the key for this).

Please bring:

- All current medications (in original packets)
- Dosette Box if Pharmacy filled
- Helping hand/shoehorns etc if you have them
- Toiletries including flannels/towels/soap/dental
- Slippers or shoes: ideally loose fitting with backs and no laces. **No** flip flops
- Day and night clothes (loose fitting), short pyjama set/shorts/nighties
- **This booklet** and any other information or paperwork you have been given regarding your operation
- Books, magazines, Ipad/tablet etc…
- Telephone numbers of friends/relatives
- Ear plugs and/or eye masks
- Mobile phones may be used but you must respect the privacy and confidentiality of others. Silent ring tones or vibration mode **must** be used and calls to be restricted to the hours between 7am and 8pm. A mobile's **camera facility must not be used** at any time for reasons of patient confidentiality.

Please do not bring:

- Unnecessary jewellery
- Large sums of money
- Bank cards
- Any other valuable items

Day of surgery and Anaesthetic choices

On arrival

Make your way to the ward (instructions will be on your appointment letter), where you will be greeted by the nursing staff and shown to your bed space where you can make yourself comfortable.

The staff will run through their checklist and do observations (BP, pulse etc.). You will then be visited by your consultant who will ask some final questions and mark your leg to be operated on with an arrow.

The anaesthetist will visit you before the operation to introduce themselves to you and to ask some questions about your health. They will prescribe some medicines to help with pain relief after the operation.

When it is your time for surgery, the nursing staff will provide you with a surgical gown to get changed into and once you are ready a theatre porter will take you on your bed to the anaesthetic room.

The Anaesthetic

Anaesthetists are doctors who take care of you during your surgery. Before your operation we will visit you and work with you to tailor your anaesthetic to your needs. We will explain which anaesthetic methods are suitable for you and help you to decide which is best for you. This is a good time to ask questions and tell the anaesthetist about any worries you may have. Some people find it useful to write down any concerns beforehand so they don't forget anything. The vast majority of patients having hip and knee replacement surgery have a spinal anaesthetic.

Spinal Anaesthetic

Spinal anaesthesia works by local anaesthetic being injected close to the nerves in your lower back. This will make you numb from the waist down for 2-3 hours. You will not be able to feel your legs fully or move them properly for 4-6 hours after your operation. We encourage joint surgery patients to have a spinal anaesthetic because it usually gives you much more control over your pain during the most painful part of your recovery and you are likely to recover more quickly.

If it is safe to do so, the anaesthetist may offer you some sedation during the operation. This will help settle your nerves and make you feel drowsy or even sleepy. It is different from a general anaesthetic - you won't be completely unconscious. If you like you can bring some music with you to listen to during the operation.

Some of the side effects of the spinal anaesthetic may be that you do not know when you need to pass urine for a while. Your skin can also feel a bit itchy and very occasionally some patients get a headache - but this can be treated. There is also a very rare risk of damage to the nerves around the injection site.

Nerve Block

You may also be offered a nerve block. This is an injection of local anaesthetic directly targeting a nerve in your groin or inner thigh which will contribute significantly to your pain relief for 12-24 hours after the operation.

General Anaesthetic

A general anaesthetic is a state of controlled temporary unconsciousness, or in other words, you will be completely asleep. It does not provide pain relief so you will need strong pain relieving medicines both during and after the operation. This often makes people feel drowsy and sick. Patients may also suffer from a sore throat afterwards and there are increased risks for some patients. We very rarely use a general anaesthetic if you are having joint surgery.

Your anaesthetic team have experience and expertise in all types of anaesthesia and they will know the advantages of any recommendations they make so do feel free to ask us any questions. Whatever anaesthetic is chosen, an anaesthetist will stay with you for the whole operation and watch your condition very closely, adjusting the anaesthetic as required.

For further information on your anaesthetic choices, please see the Anaesthetic Films from the RUH Anaesthetists and patient information leaflets from the Royal College of Anaesthetists on the RUH Joint replacement webpage at ruh.nhs.uk/jointreplacement

After the operation

After the operation is performed you will be transferred to the recovery room where you will remain until you are fully awake.

At this point, you may be aware of some or all of the following:

- An oxygen mask
- Drip (this provides fluids until you start drinking and antibiotics to prevent infection)
- Cuff around your arm recording your pulse and blood pressure
- Dressings over the wound

You will be collected from the recovery room and taken back to the ward.

Pain

Each individual experiences pain differently. It is essential that you have regular and adequate pain relief medications so that you can begin to move and gain control of your operated leg. Let the nursing staff know how you feel as they can vary your dosage, change pain relief medications and treat the most common side effects of the stronger pain relief medications, with anti-sickness and constipation medications as required.

Preventing blood clots in hospital and at home

As discussed in the possible complications section of 2. knee replacement surgery, blood clots or venous thromboembolism (VTE) including deep vein thrombosis (DVT) and pulmonary embolus (PE) can occur following surgery.

What is Deep Vein Thrombosis (DVT)?

DVT is a common medical condition that occurs when a thrombus (blood clot) forms in a deep vein, usually in the legs or pelvis, leading to either partially or completely blocked circulation. In some cases, a DVT can cause a serious problem known as a Pulmonary Embolus (PE).

What is a Pulmonary Embolus (PE)?

If the clot (or DVT) in the leg breaks off and travels to the lungs, it will cause a PE, which may result in breathing difficulties and can very rarely be fatal. Signs of a PE are:

- Shortness of breath
- Chest pain
- Coughing up blood-streaked mucus

If you experience any of the above symptoms, you must seek medical help immediately.

DVT and PE are known under the collective term of venous thromboembolism (VTE).

Why can a blood clot form?

There are two factors that may trigger a clot to form:

- Changes or damage to blood vessels – if there is pressure on a vein a clot can form. This may be due to immobility, surgery or long distance travel.

- Problems with the blood – this may be something you are born with or caused by some drugs or conditions such as pregnancy. If you are dehydrated the blood can become more “sticky” which can increase the risk of the blood forming a clot.

How is VTE prevented in hospital?

Not all VTE can be prevented but the risk of developing a clot can be significantly reduced. Your risk will be assessed by a doctor either in the pre-assessment clinic, or when you are admitted to hospital.

Blood thinning medications are provided for you to take from the day after your operation, for 14-30 days, in accordance with national guidelines. You will also be given foot pumps or other compression devices whilst in bed and these will be explained to you by the nursing staff upon admission to the ward.

What can I do to help myself?

Whilst the doctors can do something to reduce your risk, there are some very important and simple things that you can do to help reduce your risk:

- Make sure that you get up and move about as soon as able after surgery
- Regularly exercise your legs whilst in bed, see Appendix 1.
- Make sure you drink plenty – water is particularly good for you
- Stop smoking
- Consider stopping contraceptive or hormone-replacement therapy. Talk to your doctor
- Lose weight, if you are overweight
- Avoid long-haul travel for at least 4 weeks post-surgery, ideally 3 months. If travelling within 3 months, speak to your doctor about preventative measures against blood clots.
- For further information please refer to the clots section of the RUH Joint replacement webpage: ruh.nhs.uk/jointreplacement

Therapies

A physiotherapist and/or occupational therapist will visit and assess you after your operation. You will be encouraged to start moving as soon as you are able. Your therapists will advise you on the best exercises for you (appendix 1), how far you should be walking and which walking aids are appropriate for you.

Movement improves circulation which promotes healing post-operatively. It also reduces stiffness and therefore the pain associated with it. But only doing small amounts at any one time reduces the chance of overloading the healing tissues. **The key is to do little and often.**

The therapists will guide the progression of your exercises (appendix 1), walking and activities such as dressing and getting in/out of bed, and practice doing some stairs with you. More details on these activities are below:

Getting out of bed
Initially, it is usually easier to get out of bed on the side of your operation. Slide your leg out to the edge of the bed, or push it with your other leg until both legs are over the side of the bed, then push yourself up with your arms.

Getting into bed
Stand with your back to the side of the bed. Slide your operated leg out in front of you, reach down with your hands and gently lower yourself onto the bed. Using your arms, pull yourself up the bed, moving your legs in one at a time, until you are comfortable.

Sitting/standing from a bed or chair
To sit: Walk backwards until you feel the chair on the backs of your legs. Place your hands onto the armrests. Step your operated leg slightly out in front of you and gently lower yourself into the chair. Once you are sitting, slide back to rest on the chair-back.

To stand: Once again, use your arms and non-operated leg to take most of your weight when pushing up from a chair, keeping your operated leg slightly out in front.

Showering
It is important to keep the dressing clean and dry until the wound has healed. Avoid getting the wound wet until it has healed and you have been given the all clear by a health professional. Once the wound has healed, you can use a shower as able. Please avoid getting down into a bath for at least 3 months because it can be very difficult to get in and out.

Getting dressed
You will be able to dress your upper half normally, but you may find it more difficult to dress your lower half after surgery, especially getting on socks and shoes on

the operated leg. Please accept assistance from friends and family as available. If you live alone there are a host of assistive aids you can purchase to maintain your independence in the short term, such as:

- Long-handled shoe horn
- Helping hand
- Leg lifter
- Long-handled sponge
- Perching stool
- Trolley

Picking up objects off the floor
Initially, it is best to ask for help to pick something off the floor or you can use a helping hand (purchasable aid). However, if you have confidence in your balance you can reach to the floor by holding onto a firm object to assist you and placing your operated leg out behind you. You shouldn't perform any heavy lifting for 3 months post-operatively.

Stairs – the safest technique
Use a banister if available and take one step at a time

Going up: Step up with your non-operated leg first, then step up with your operated leg. Always go one step at a time.

Going down: Put your stick on the step below, then step down with your operated leg followed by your non-operated leg. Always go one step at a time.

Going Home from Hospital

How long will I stay in hospital?

The length of time that you stay in hospital varies with each patient. Most patients stay in hospital for 1-2 days after their operation but you may go home sooner if all is well.

We give you this as a guide so that you can plan to have someone around should you need them on your discharge. If you have any concerns with how you will manage when you return home please inform the nursing staff as soon as possible so that we can discuss this with you.

When will I be ready to go home?

You will be able to go home when all members of the Orthopaedic team are happy with your progress and we are confident that you will manage safely at home.

To ensure that you are ready to go home we need to check the following:

- You have adequate pain control medications
- You are able to walk safely around the ward with sticks by yourself (although some patients might need to go home with another type of walking aid)
- You have completed a set of stairs, or a step, safely (depending on what you have at home)
- You are able to get on and off a bed, toilet and chair by yourself
- Your wound is healing well
- Your blood results and x-ray of your new joint are satisfactory
- You are medically fit

What do I take home with me?

Before leaving the ward, you will be given:

- All your belongings
- Any additional medications you may have been prescribed
- An advice line contact number if you have any questions or problems once you are at home.
- Any equipment loaned to you for home such as walking aids
- A copy of your discharge summary which is sent to your GP about your hospital stay
- A letter for the district/practice nurse who will remove the dressing and check your wound

Please be aware that there can be a considerable delay between being told you can be discharged and the time that your medication and discharge letter are actually available for you to a leave. We ask that you exercise patience; be assured that your nurse will do everything possible to speed up the discharge process for you.

Recovery Advice

Be sensible

You have just had major joint surgery. All the muscles around your knee have been stretched and they can be inhibited from working efficiently after the operation, due to the trauma of the procedure and ongoing pain. Therefore, you should be sensible with the way you move and perform your normal daily activities.

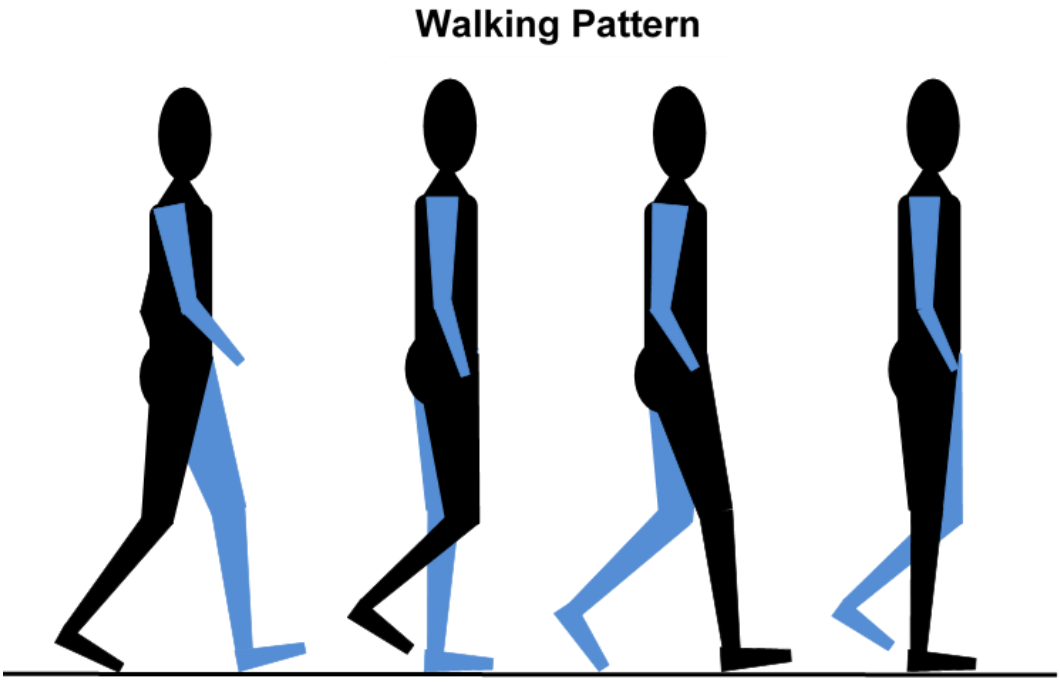
However, it is essential that you move regularly to reduce stiffness. Walk for short distances initially to ensure you don't overdo it and that you are able to make steady progress. **Little and often** is the key to starting your rehabilitation. **Gently** progress exercises (Appendix 1), mobility and your normal activities as comfort allows.

Improving your walking and progressing your exercises

Your exercises are very specific to targeting the weakness and restriction of your joint after the operation. Doing your exercises will make it easier for you to return to your normal activities. See the exercise chart (Appendix 1) for which exercises to use at each stage and guidance on repetitions and frequency. Please note this is guidance only, you may need to adjust the repetitions and frequency up or down depending on how your symptoms respond to performing them. Ultimately you are aiming to gradually increase the difficulty of the exercises to build the strength of the muscles around your new joint as time goes on.

Walking can be painful and/or restricted before surgery and this often continues initially after surgery, causing you to struggle to walk in the optimal way. Often this will naturally become easier, sometimes it can require your focused attention to re-educate the body to move more efficiently after the joint has been replaced.

Your therapist on the ward will guide you in optimising your walking pattern and you can use the diagram below to reinforce this when you are at home:



Blue leg is the operated leg:			
Heel strike: as the operated leg is brought forward the heel should hit the ground first with a relatively straight leg.	Mid-stance: the knee of the operated leg remains relatively straight, supporting the full body weight, as the non-operated leg steps through.	Toe off: the knee bends and heel lifts off as weight is transferred off the operated leg.	Swing phase: the knee of the operated leg gently bends as it swings through and comes back straight, ready for heel strike again.

You will be using a form of walking aid on discharge from the hospital. This is to help your balance and confidence, and to reduce the load going through your healing muscles and tissues initially. Once you feel you are walking comfortably and efficiently you can then start to increase the distance you are walking and reduce the use of your walking aids. If you go home using two sticks you may feel ready after a few weeks to begin using one. This should be held in the opposite hand to your operated leg. If you went home on crutches and you have sticks at home, these can also be used after a few weeks provided they are the correct height.

The following paragraph of information is for those patients who have been advised not to put full weight through their operated leg:

If the consultant has advised you that no weight or only a limited amount of weight should be put through your operated leg after surgery, you must continue to use the walking aid(s) given to you by the physiotherapist until you see the consultant. You must see your consultant before increasing your mobility beyond basic functional activities. You can progress the exercises you have been taught by the physiotherapist by gradually increasing the number of times you repeat each exercise, but do not start any new exercises.

Recovery days

It's important to allow the healing tissues to adapt to the increasing load placed on them through your increasing walking, activities and exercise. Have at least one quieter, recovery day per week.

Sleeping

You can sleep in any position, but it's often more comfortable to put a pillow between your legs when lying on your side. Moving around in bed can be challenging but will become easier.

Wound

Keep your wound clean and dry using the dressings provided on the ward. Two weeks after discharge, your dressing will be removed and your wound checked by a practice nurse at your GP surgery or by a district nurse. They may need to remove steri-strips or clips if used or trim the ends of stitches. If the nurse has any concerns regarding the wound please contact us through the Advanced Orthopaedic Practitioner advice line on 07464494004.

Swelling

It is not uncommon to have a swollen leg and foot for at least 3 months following surgery. The swelling is a natural response to the trauma of the surgery and the healing that is going on around your new joint. Sometimes it can be an indication that you have progressed your walking or activities too quickly. You are advised to rest with the knee supported out straight and elevated to help reduce the swelling. This also helps to stretch the back of the knee.

Stiffness

Stiffness of your new joint can last for a few months following the surgery. This is typically worse first thing in the morning or after prolonged periods of rest.

Stiffness can be helped by resting for shorter periods and gentle movement of the new joint regularly, while resting. The impact of stiffness will gradually reduce over time.

Pain relief medications

Enough pain relief medications are only supplied for a maximum of two weeks. You may require a repeat prescription from your GP, as it is not uncommon to

require some level of pain relief medications for several months after the surgery. As the pain eases, the pain relief medications should gradually be reduced.

Recognising complications

Please call the Advanced Orthopaedic Practitioners at the RUH on 07464494004 if you develop any of these symptoms.

- **Infection** – You may have developed a wound infection if you are experiencing increasing redness, pain and tenderness around the wound, if the wound is oozing pus or you are developing a fever or temperature above 38°C.

- **DVT** – You may have developed a DVT if you are experiencing increasing pain in the calf or thigh with redness, heat and tenderness to touch in the area.

- **PE** – You may have developed a PE if you experience a new shortness of breath, chest pain and /or coughing up blood-streaked mucus.

If you experience any of the above symptoms for PE you must seek medical help immediately.

Hydrotherapy

You can enter a pool once your wound is well healed: this could be as early as 3 weeks after surgery. Gentle walking in various directions, squats and lunges can be great exercise for your new joint and whole body. Please see the RUH website for details of local swimming and hydrotherapy pools along with a video on hydrotherapy exercises (ruh.nhs.uk/jointreplacement).

Higher level physical activities and sports

Gardening

Choose only the lightest, easiest task for short durations initially and gradually progress as comfort allows. Avoid heavy digging or lifting for 3 months. Using a padded kneeler rather than squatting is better when trying to get closer to the ground. Long-handled tools are very useful, especially when first returning to gardening.

Bicycling

It is safer to start using a static bike if you can access one initially. Have the seat as high as comfortable for you as this reduces the amount of bend required to complete a full revolution of the pedals. Once you feel ready to use a bicycle, take care getting on/off and start away from busy traffic, hilly or uneven surfaces. Gradually increase distances and intensity as comfort allows.

Golf

Start with putting and ¼ swing chipping. Avoid full swing for the first 3 months. Gradually progress length and speed of swing as comfort allows.

Swimming
Ensure your wound is well healed. You need to be confident with your walking so that you can manage to walk safely on the wet pool side. We recommend that you use a pool which has a staircase leading into the water initially. Often your new joint will find the breast stroke kick more uncomfortable or challenging, so start with a flutter kick or doggy paddle over short distances. Gradually increase distances and speed of swimming as comfort allows.

High impact activities and sports
For example: running, racket sports, skiing, horse riding and competitive contact sports have a greater risk of earlier wear or failure of the prosthesis. There is also a greater difficulty in treating bone injuries around the prosthesis should you have a significant traumatic incident. However, if you are desperate to return to these activities you should understand the increased risks and you must work extremely hard to ensure your muscles are capable of efficiently stabilising, moving and looking after the new joint when you introduce and progress these activities. Please discuss with your Consultant and Physiotherapist for further guidance.

Follow-up appointments

Two weeks after your operation you need to see your GP practice nurse to have your wound checked. You will need to call your surgery to make this appointment.

You will be referred by the RUH Orthopaedic Physiotherapy team for an outpatient physiotherapy appointment at your local department, they should be in contact to arrange it once they receive the referral.

At approximately 6-8 weeks after your operation you will be asked to come back to see the surgeon or a member of their team. The purpose of this is to check on your progress and to give you advice about increasing your activities.

If we feel you need a further assessment you will be given another appointment to come to the clinic. This is to ensure that you are regaining your independence and are receiving the maximum benefit from your new knee. For hospital appointments, you will receive a letter at home with the date, time and exact place of your appointment.

Long-term we will provide a virtual follow-up appointment. This involves you completing questionnaires about how the new knee is impacting on your life and you obtaining an X-ray of your new joint at a local radiology department. We will then analyse this information to ensure you continue to get maximum benefit from your new knee. If we wish to assess you further, you will be given another appointment to come to clinic and if you have any questions or concerns you can contact us through your consultant’s medical secretary (phone numbers can be found on the clinic letters you receive).

PROMs and Amplitude

Patient Reported Outcome Measures (PROMs) are a method of measuring and comparing patients' physical progress and well-being, as well as their quality of life, before and after a clinical intervention. Your experience, as a patient at the Royal United Hospital and the outcome of your treatment, is important to us. It is also important that we can demonstrate the quality of treatment here at the RUH.

Your input to this process is critical. We are using the Amplitude Clinical Outcomes system to record and report your progress, as well as the progress of our patients as a group. Amplitude is an independent organisation that is expert in providing systems to capture and report on outcome data. All healthcare processes abide by the Data Protection Act and the RUH's Information Governance has approved this data collection. Your data is completely secure and will not be shared identifiably without your permission.

How it works

- Patient has appointment with their consultant and is referred for treatment
- Patient completes pre-operative scores from home
- Patient received medical intervention/treatment from their Consultant or his/her Clinical Team
- Consultant completes the procedure/treatment form within the Trust system
- Patient completes all post-operative scores from home at set intervals after treatment

To access the patient portal & register please use the following link
https://proms.ruh.nhs.uk/?pce=true

Or alternatively use the QR code below

*If you haven't received the questionnaire after registering please check your junk folder

Like to discuss PROMs further?
PROMs data collection is really important to us here at the RUH and we appreciate your assistance in providing your responses. If you would like to discuss any other aspect of PROMs collection please contact us on:
Email: ruh-tr.orthopaedicoutcomesupport@nhs.net
Contact Telephone Number: 07979 102770

The PROMs system is powered and supported by Amplitude Clinical Services. If you have a technical question about accessing the system, please contact them directly, using the information below.
Contact Amplitude - Email: customer.support@amplitude-clinical.com

www.amplitude–clinical.com

Frequently asked questions

What are the visiting hours for the ward?

Visiting hours on Philip Yeoman (B41) ward are between 11am and 8pm. Where possible we try not to interrupt you whilst you have visitors but there are some occasions where it is necessary. Please note that other wards in the hospital may have different visiting hours. For the most up to date information, please clarify these hours prior to visiting.

Can my visitors come in on the day of my operation?

Your visitors must telephone the ward prior to visiting you on the day of your surgery and should adhere to visiting times.

Can my friend/relative phone the ward to check how I am?

Yes, of course. We understand that your friends and family are keen to check on your progress. However, we would be grateful if one person could take responsibility for keeping other friends/relatives informed of your progress. This allows the nursing staff to use their time to focus on caring for you.

Is it safe to bring valuables into hospital with me?

We do not recommend you bring too many valuables with you. Anything that you do bring into hospital is done so at your own risk. Royal United Hospital Bath NHS Foundation Trust cannot take any responsibility for your belongings.

Are flowers allowed on the ward?

No, we regret that we cannot allow flowers on the ward as they can be a source of infection, which could in turn get into your or other patients' wounds. Please inform your visitors of this.

Further Information

National Joint Registry (NJR): www.njrcentre.org.uk

National Institute for Health and Clinical Excellence (NICE):
www.nice.org.uk/guidance/ta304

NHS: www.nhs.uk

British Orthopaedic Association: www.boa.ac.uk

Royal College of Anaesthetists: www.rcoa.ac.uk/patient-information

Arthritis Research UK: www.arthritisresearchuk.org

Useful Hospital Contact Details:

Philip Yeoman Ward (B41)	01225 825477 / 01225 825476
Advanced Orthopaedic Practitioners	07464494004
Admissions Desk	01225 824680 / 5368 / 4446
Nurse Advice Line	01225 821668
Elective Orthopaedic Co-ordinator	01225 825513 or email: ruh-tr.electiveadmissions@nhs.net
RUH Therapies Department	01225 824293 or email: ruh-tr.therapiesoutpatientadmin@nhs.net

Royal United Hospitals Bath NHS Foundation Trust
Combe Park, Bath BA1 3NG
01225 428331 www.ruh.nhs.uk

Please contact the Patient Advice and Liaison Service (PALS) if you require this leaflet in a different format, or would like to feedback your experience of the hospital. Email ruh-tr.pals@nhs.net or telephone 01225 825656 / 826319.

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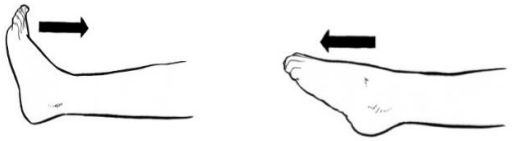
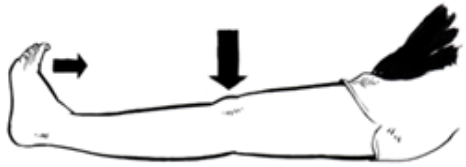
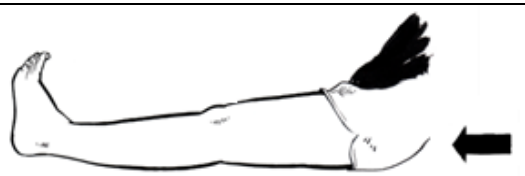
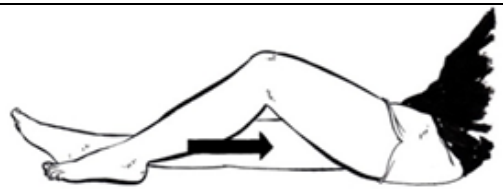
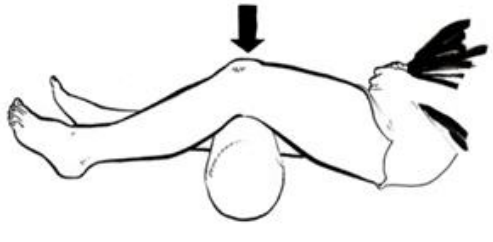
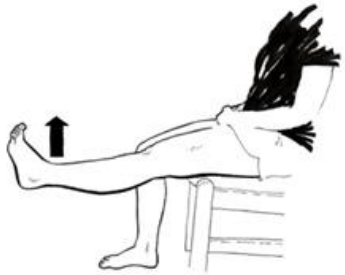
Appendix 1: Knee Replacement Exercises		Repetitions and Frequency					
Exercise – the repetitions and frequency suggested is a guide, you should start with this number and increase repetitions slowly as comfort allows. You should reduce the repetitions or frequency or stop altogether any exercise that significantly increases your pain. Recovery days – it's important to allow the healing tissues to adapt to the increasing load placed on them through your increasing activities and exercise. Have at least one quieter, recovery day per week.		Pre-op 1-2x most days	Day 0-1 Hourly	Day 2-14 Every 2 hours	Week 3-6 3x per day	Week 7-12 2x per day	Month 4-6 3x per week
1. Take deep breaths		3	3	3	3	3	3
2. Pump your ankles up and down. (Once you are walking around regularly you can stop this exercise)		10	10	20	20	N/A	N/A
3. Static quadriceps contractions – Sitting in bed, your leg relaxed out straight, contract the muscle on top of your thigh. Hold for a couple seconds and then relax fully.		10	5	10	20	20	20

4. Tighten your bottom muscles, hold for 5 seconds and relax.		10	5	10	20	20	20
5. Sitting up in bed, bend the operated leg as far as possible. You may wish to put some plastic under your foot to help it slide on the bed.		10	3-5	5	5	5	5
6. Sitting up, place a rolled up towel under your knee. Straighten your knee, keeping your thigh on the towel throughout.		10	3-5	5	5	5	5
7. Sit in a chair. Bend your operated knee as far as you can by sliding your heel backwards. Hold your knee in this bent position for 5-10 seconds then relax. You can slide forwards on the chair to increase your knee bend.		10	3-5	10	10-20	15-30	20-30

8. Sit in a chair. Slowly straighten your knee, keeping your thigh in contact with the chair. Focus on getting your knee straight rather than trying to lift your leg high. Hold for 5 seconds and slowly lower.		10	5	10	10-20	15-30	20-30
9. Lying on non-operated side. Lift top leg level with hip. Lower slowly. Ensure your pelvis doesn't roll backwards.		10	N/A	N/A	3-5	5-10	10-20
The next set of exercises (10-11) make your knee muscles work harder. They can be attempted once above exercises (1-9) are comfortable to perform in higher numbers (10+ repetitions).							
10. Stand and hold your kitchen work top for support. Slowly bend your knees as far as you can comfortable manage and then straighten them.		10	N/A	N/A	3-5	5-10	10-20

11. Step up with your operated leg first. Step down backwards with your non-operated leg first. Do this is slow and controlled manner.		10	N/A	N/A	3-5	5-10	10-20