

University Hospital of North Staffordshire  NHS Trust	
Patient information Total Knee Replacement	

Introduction

This booklet is designed to provide information about total knee replacement and what to expect before and after this operation. It has been compiled by the Orthopaedic surgeons, nurses, physiotherapists and occupational therapists of North Staffordshire.

It is recommended that you read this booklet before your operation and write down any questions you may have. If you have questions, please feel free to ask a member of the surgical or nursing team. Your surgeon, nursing staff and therapists will be happy to answer any questions you have regarding your care.

Our staff's goals are to restore your hips to a painless, functional status and to make your hospital stay as beneficial, informative, and comfortable as possible.

General information

Welcome to the Orthopaedic Outpatients Department at the Hartshill Orthopaedic and Surgical Unit.

When you come for your appointments or to be admitted to hospital for your operation, there is a drop off point and disabled parking spaces outside the main entrance to the Main Clinic Waiting Area. If you have difficulty walking, wheelchairs are available for your use. Please ask at the Reception Desk if you need to use one or if you need a porter to wheel you to the ward. If you are unable to sit for long periods please inform the clinic staff when you arrive so that they can find somewhere for you to lie down.

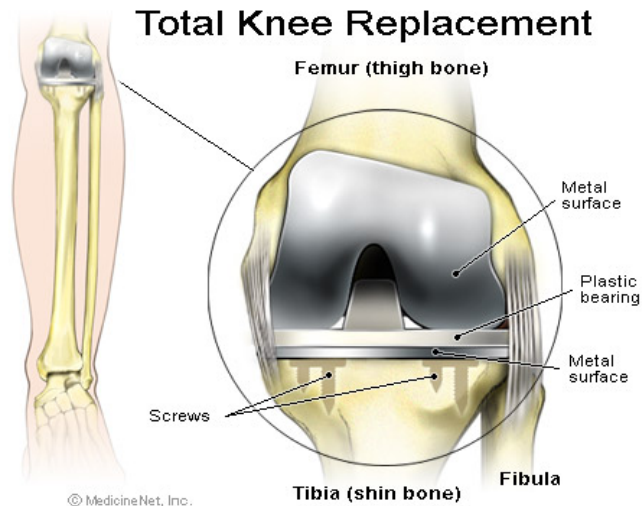
In the Main Waiting Area there is a WRVS coffee bar where you can buy snacks, sandwiches and hot and cold drinks. If you want to have a hot meal while you are waiting there is also a Dining Room in the building within walking distance.

Please inform the clinic staff when you arrive if you are diabetic, to help us to avoid you missing your regular meals.

Please let us know as soon as possible if you are unable to attend for an appointment, so that your appointment slot is not wasted.

Total Knee Replacement: What is it?

Total knee replacement is a surgical procedure for replacing the knee joint. This joint is composed of three parts – lower end of the femur (thigh bone), the upper end of the tibia (shin bone) and patella (knee cap). During the surgical procedure, diseased surfaces of the knee joint are removed and replaced with smooth artificial surfaces. The femoral surface is of curved polished metal. The tibia is usually metal covered with high density plastic and the knee cap is plastic. These artificial pieces are attached to the bones with a bone cement (methyl methacrylate) or special coatings that encourage bone ingrowth.



When do we consider total knee replacements?

Total knee replacements are usually performed for severe arthritic conditions, of which there are many. However, we sometimes perform the operation after other problems such as the late effects of knee fractures or aseptic necrosis (a condition in which the bone of the knee dies). Most of the patients who have artificial knees are over 55 years of age, but we occasionally perform the operation in younger persons in particular circumstances. The circumstances vary somewhat, but generally patients are considered for knee replacements if:

- They have significant pain during the day or night.
- The pain is severe enough to restrict not only work and recreation, but also the ordinary activities of daily living, especially walking.
- The pain is not relieved by arthritis (anti-inflammatory) medicine, the use of a stick, and restricting activities.
- They have significant stiffness of the knee.
- X-rays show advanced arthritis, or one of the other problems mentioned.
- They weigh less than 180 to 190 pounds (kilo equivalent).

What can be expected of a total knee replacement?

An artificial knee replacement is not a normal knee, nor is it as good as a normal knee. The operation will, however, provide complete, or nearly complete, pain relief in 90 to 95% of patients for up to 10 Years. It will allow those patients who get pain relief to carry out the normal activities of daily living. It will not, however, allow patients to return to active sports or heavy labour. Activities must be avoided which overload the artificial knee. Most patients (70-80%) with stiff knees before surgery will regain useful motion, but 5-10% remain somewhat stiff although pain is usually relieved.

The major long-term problem is loosening. This occurs either because the cement crumbles up (as old mortar in a brick building) or because the bone melts away (resorbs) from the cement. By 10 years 15% of all artificial knees will look loose on x-ray. Somewhat less than half of these (about 5% to 10% of all artificial knees) will be painful and require re-operation.

Loosening is in part related to how heavy you are and how active you are. It is for this reason we try to avoid operating on very overweight patients or young, active patients. (In patients under 50 years, a greater proportion of knees loosen). Loose, painful artificial knees can usually, but not always, be replaced. The results of a second operation are not as good as the first, and the risks of complications are higher.

Cementless total knee replacement

A new knee has been developed that does not require cement. This knee has the potential to allow bone to grow into it, and therefore may last longer than the cemented knee. This is a particularly important consideration for the younger patient. Another possible advantage of this new knee is a lower infection risk and possible easier revision surgery, should this be necessary. The complications that can occur with the new non-cemented knee are similar to those which may occur with the standard cemented prostheses. Your surgeon will discuss the choices in your case.

What are the risks of total knee replacement?

Total knee replacement is a major operation and there can be complications. However the effect of most complications is simply that the patient stays in hospital a little longer.

The complications specific to a total hip replacement fall into three categories: complications of anaesthesia, complications of any operation and complications specific to having a knee replacement.

Anaesthetic risk. There is a very small risk of a heart attack following knee replacement and also a risk of stroke and chest infections. Your anaesthetist will see you before your operation to discuss the risks and the anaesthetic choices available.

The choices are general anaesthetic, spinal anaesthetic or a combination of these. Your anaesthetist will be able to advise you of which technique might be more suitable for you, taking into account your general health.

The most common complications are not directly related to the knee and do not usually affect the results of the operation. These include:

- **Deep vein thrombosis or DVT** is a blood clot in the veins of your leg – 10-20% of patients. Occasionally the clot can dislodge and travel to the lungs (pulmonary embolus). The risk of a fatal embolism is very small. To help avoid thrombosis the physiotherapists and nurses will get you moving around as soon as possible, usually on the day after your surgery. You will be given blood-thinning medication to prevent blood clots forming and you may also be fitted with special elastic anti-embolism stockings (TED stockings) on admission. These help increase the blood flow in your legs and they are usually worn for six weeks after surgery.
- **Difficulty passing urine** may occur – 20% patients. This might mean you needing a catheter (small tube) to drain your bladder for a day or two.
- **Pain**, which happens with every operation. See the section on pain management for information about ways in which the team will try to reduce your pain.
- **Temporary nausea and vomiting** – 10% of patients.
- **Blood clots in the lung** 1-2% of patients.
- **Infection in the surgical wound** can be a complication of any operation. Usually these clear up quickly with antibiotics.

Complications that affect the knee are less common, but in these cases, the operation may not be as successful:

- **Stiffness in knee** – 10% of patients
- **Persistent knee pain** – 5% of patients
- **Dislocation of patella** (knee cap) – 5% of patients – usually 5-10 years post surgery
- **Infection in knee joint** – 2% of patients Infection can result in loosening and failure of the replacement over a period of a few months. One or more further operations will usually be needed to control the infection (risk 1 in 50). Some infections like MRSA (Methicillin Resistant Staphylococcus Aureus) are resistant to common antibiotics and therefore are more difficult to treat. At the Pre-operative Assessment we screen for MRSA by taking swabs from the nose and perineum of all patients coming in for joint replacement surgery
- **Haematoma** (swelling due to bleeding) in thigh – 5% of patients.

Other complications may occur, but these happen in less than ¼ percent of patients (one patient in four hundred): death, fractures, nerve injury. A few of the complications, such as infection, dislocation, and haematoma, may require re-operation. Infected artificial knees sometimes have to be removed, leaving a short (by one to three inches) somewhat weak leg, but one that is usually reasonably comfortable and one on which you can walk with the aid of a stick or crutches. **It must be emphasized that these are rare problems and most patients are pleased with the results of their operation.**

Are special precautions taken against complications?

- Antibiotics are administered to counter infections
- Anti-clotting agents are commonly used unless there is a contra-indication (stomach ulcers)
- Special stockings and early mobilisation to minimise the likelihood of blood clots (venous thrombosis).

Getting ready for your operation

It is important that you are fit for your operation as you will make a quicker recovery.

If you smoke, try to cut down or quit, ideally 8 weeks or more before your operation. Smoking changes blood flow patterns, delays healing and slows recovery. Even stopping for 24 hours before the operation is beneficial. If you want to stop smoking ask for information about the Smoking Cessation Nurse or talk to your General Practitioner or Practice Nurse.

Keep your weight down. Being very overweight (i.e. a Body Mass Index of greater than 30) can significantly increase the risk of complications from surgery and anaesthesia, make the operation more difficult and reduce the life of your knee replacement. The assessment nurse will weigh you and measure your height and give you some advice. You may find it helpful to talk to your General Practitioner or Practice Nurse. If you are seriously overweight your consultant may delay surgery until you have lost some weight.

Have a dental check if you have not done so in the last six months. It is important that any dental infections are dealt with before joint replacement surgery to prevent infection in your new hip. If infection is suspected your operation will be postponed.

Practice sleeping on your back- you may find it uncomfortable to lie on your side for approximately six weeks following surgery. If you want to you can put a pillow between your knees.

Keep yourself fit - Being as fit as possible before the operation will speed recovery and reduce the risk of complications. It is worth trying to walk a short distance each day as pain permits, or take up gentle exercise such as swimming to improve your level of fitness and mobility. Activities which improve upper limb strength will improve your ability to use walking aids after the operation.

Plan ahead for your homecoming

Getting the full benefit from knee replacement surgery can take a few months and during this time a full range of movement may be difficult. As a consequence many people find they are limited in their ability to do normal activities such as bathing, shopping, laundry, cooking and housework. Help from others may be needed.

It is important to plan ahead and think about the support you will need when you go home, usually at around three days after surgery.

Here are some suggestions to start thinking about:

- ◆ Arrange for someone to take you home from the hospital. The average stay in hospital is about 4-5 days. You will not be allowed to drive for at least six weeks after your operation, until you have been reviewed in clinic. Before driving it is important to notify your car insurance company.
- ◆ If you are caring for someone else you will need to make alternative arrangements for their care (respite, home care, help from friends or family, your GP maybe of help in making these arrangements).
- ◆ Is anyone available to help you when you come out of hospital? It is better if someone can be with you for the first week or two following discharge to help with things like cooking and personal care, if only for part of the day, whilst you gain you're confidence.
- ◆ It is a good idea to prepare and freeze some meals in advance or arrange for relatives and friends to bring meals and assist with shopping.
- ◆ Organise your kitchen to avoid excessive lifting and bending. The Occupational Therapist can advise you on the use of equipment to assist you in the kitchen.
- ◆ Remove any rugs or mats that could cause you to trip. Securely fasten any electric wires and ensure a safe passage throughout your home.
- ◆ Do not fly or go on long journeys before 6 weeks as this increases your risk of DVT or PE

Will I need anything special at home?

The Occupational Therapist (OT) will assess your requirements and order any appropriate equipment to help you once you are at home. You will be asked to provide information about your home environment and how you are coping at home prior to your admission. The OT will discuss and show you how to carry out activities of daily living safely, without excessive bending. They will also discuss managing everyday activities safely after knee surgery.

You will require a suitable armchair. The OT will advise you on the height of the chair. It must not be too low, soft or deep. Initially the limited movement in your knee may make it difficult to get out of a low chair. Swivel office chairs are not recommended. Depending on the height of your toilet seat you may require a raised toilet seat for at least 6 weeks.

Your bed also needs to be of a suitable height.

It is important to remember the above when visiting other places e.g friends, church, restaurant.

Pre-operative assessment

You will generally be called up to the hospital before the proposed date of your operation. This allows doctors and nurses to check to see you are medically fit for the anaesthetic and operation. Fresh x-rays and blood tests may be taken.

You will be questioned about your current health and past medical, surgical or medication history. Particularly important things to tell the nurse or doctor about are:

- Myocardial infarcts (heart attack)
- Asthma
- Any particular shortness of breath problems
- Allergies
- Any bad reactions to a previous anaesthetic

This is an opportunity to tell the nurse of any worries or special needs when you return home after your operation. The operation cannot be performed if there are any active infections. If any infections, including a bad cold occur after your assessment but before your admission, please telephone the Admissions Officer or your Surgeon's Secretary.

- You must bring all your current medicines prescribed by your doctor to the Assessment Clinic and on admission to the ward. If you take medicine for high blood pressure it would be helpful to bring some recent blood pressure readings. If you are diabetic please bring a record of your blood sugar readings. If you are on Warfarin please bring your yellow book.
- Smokers must stop prior to surgery to lessen the likelihood of a post-operative chest infection.
- You will be asked at this pre-operative assessment to sign to give your consent for us to perform the operation.
- We often start iron tablets to build up your bodies iron stores ready for surgery. We will give you a bottle of skin cleansing liquid to use at home on the night before you come into hospital, which reduces your chance of wound infection
- This is an opportunity to ask further questions if you are unsure of anything. Your operation date will usually be given to you.

If you are unable to keep your appointment for admission or for preoperative assessment please inform us as soon as possible using the contact numbers at the back of this booklet. Late cancellations waste operating time and lengthen the waiting list.

Your admission to hospital

Usually you will be admitted to the ward on the day of your operation.

Please only bring on admission what you will need for the first couple of days such as medication, toiletries, nightwear, glasses etc. due to limited storage space. We suggest that you put other items on one side at home for your family / friends to bring in for you later.

Please bring some sensible loose fitting shoes to make you more safe with your walking practice

Before the operation the anaesthetist will talk to you and assess the most suitable form of anaesthetic. Your anaesthetist may recommend a pre-medication to be given some hours before surgery. This is an injection or tablet that will make your wait less anxious. The Nursing Staff will discuss with you your general needs and what to expect before and after your operation.

A period of fasting i.e. nothing to eat or drink for some hours before surgery is necessary as this will reduce the risk of vomiting.

This is another opportunity to ask any questions you may have. Any extra help you may require when you are discharged home should be mentioned. It is best to prepare well ahead!

The Nursing Staff will ensure you have a complete all over shower (as your physical limitations allow) using an antiseptic soap.

The side of the operation must be marked and/or a label affixed to you detailing the procedure to be undertaken. These are all safeguards.

You will be carried on a trolley or bed to the theatre.

After your operation: Recovery Bay

After your operation you will be observed and monitored until you have recovered from the effects of the anaesthetic. There will be an intravenous infusion (drip in your arm) and drain tubes coming out of your thigh for 24 hours or so. These prevent excess post-operative blood collections. They are not painful and are easily removed by the nursing staff at about 24 hours with only slight discomfort. Nausea and sickness are quite common side-effects of the general anaesthetic and painkillers. If you feel sick please let the nursing staff know as anti-sickness medicine is available to help reduce these symptoms and being unable to eat may slow down your recovery. You will be able to eat as soon as you feel like it.

You will be given oxygen through a mask for a few hours.

Pain management

Some discomfort or pain after surgery is normal. The nursing staff will assist you to control any pain through injections or tablets.



Your anaesthetist or pain nurse will discuss the best method of controlling your pain with you.

There is a form of pain relief available called a PCA (Patient Controlled Analgesia). This means you will have a pump, which you control yourself to administer small doses of pain-killer by pressing a button on the handset whenever you need more pain relief. It is very safe and you will be closely monitored by nursing staff.

Another form of pain relief is an epidural. The anaesthetist inserts a thin hollow needle into the epidural space, just outside the outer covering of the spinal cord in the lower back. A small plastic tube is then introduced through the needle and left in position when the needle is removed. The tube is used to introduce local anaesthetic and pain killing medication. An epidural provides pain relief for as long as it remains in place, usually overnight. It may cause some temporary numbness and weakness in the legs, which wears off after three or four hours.

The Nursing Staff will assess you regularly to find out how comfortable you are. Suffering from pain can slow down recovery, so please tell the Nursing Staff if you are in pain at any time. While the pain may be acceptable when you are resting, it will increase when you move, and it is important to change position regularly and do exercises 5-6 times a day following the operation, so it is important to take pain relief regularly. We will be happy to help you in any way to make your stay as comfortable as possible.

Post-operative Ward

You will probably be nursed on your back initially with your operated limb on a pillow for support.

On the first day after your operation the physiotherapists will see you. They will show you some leg exercises to help with the circulation. If you feel well enough they will help you to sit onto the side of the bed and stand using a frame.

You must follow the exercises given to you, contracting your thigh muscles, calf muscles and moving your toes. If you feel soreness of your heel or tail bone (sacral area) you must tell the nurses. Various blood tests and x-rays will be taken and you may have a blood transfusion.

On the second day after surgery the physiotherapists will help you get out of bed again and try a small walk with a frame. They will also encourage to start some knee bending exercises. Then on a daily basis you will practice your walking and as soon as you are able start using elbow crutches. If you have stairs at home the physio team will practice this with you to make sure you are safe to go home.

The occupational therapists will also see you to see if you require any equipment assistance for when you go home. You will be shown the safe way to:

- Sit
- Get on and off the bed
- Go to the toilet

Home assistance

Upon discharge from the hospital, you probably will have achieved some degree of independence in walking with crutches or a walker, climbing a few stairs, and getting into and out of bed and chairs. Nevertheless, you will need some help at home to assist you for a week or so. Get family to help with lower half garments or seek help from the Occupational Therapist or Physiotherapist for dressing gadgets. You may need to wear elastic (TED) stockings for six weeks after your operation.

Community intermediate care

The Community Intermediate Care Team is a team of Qualified Nurses, Health Care Support Workers, Social Services Staff, Rehabilitation Support Workers and Therapists who can support your discharge home following your knee replacement. It is our normal level of care to discharge you back to your own home as soon as it is reasonable to do so, usually 3 days after surgery and to provide you with the support you need at home.

A member of the team will visit your home on the day after your discharge from hospital between 9am and 5pm to offer support and continue with treatment in your own home. They will provide the most appropriate care package for you, tailored to your individual needs. Not every patient will require therapy input.

The team also works very closely with other colleagues in the community, such as District Nursing teams and Social Services and will liaise with these services if you require ongoing care and support in your own home.

When you go home

It is important to continue with your exercises. The success of the operation has a lot to do with how well you do your exercises and strengthen your muscles. This part of your recovery is very much down to you. If excess muscle aching occurs, cut back on your exercises but do not stop.

Wound stitches or staples are removed on about the fourteenth day after surgery. The Community Intermediate Care Team will arrange for a District Nurse to visit you in your own home.

Your incision

Upon returning home, you should be alert for certain warning signs. If you notice any swelling, increased pain, drainage from the incision site, redness around the incision, or fever, you should report this immediately to your doctor.

Exercises in bed

Whilst on bed rest, general exercises are very helpful. These consist of:

1. Deep breathing and coughing to prevent post-operative chest infection following the anaesthetic.
2. Wiggling your toes.
3. Moving your feet up and down and tightening your calf muscles.
4. Tightening your thigh muscles.
5. Squeezing your buttocks together.
6. Bending and straightening your operated leg. To increase range of movement, you can help by using your hands.
7. Lying flat, brace your operated knee and lift the leg straight off the bed.

Getting in and out of bed

Get in and out of bed on the OPERATED side wherever it is possible. If your bed at home cannot be moved, take care not to let the leg roll in, as you get in and out.

Sit down on the edge of the bed, push yourself further onto the bed and then keeping your legs TOGETHER and straight swing them onto the bed. Reverse the procedure when getting out of bed.

Walking

You will commence walking using a Zimmer frame or elbow crutches. The sequence is always:

1. Walking aid moved first
2. then operated leg, and
3. finally, un-operated leg.

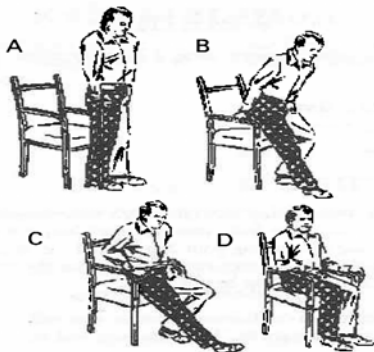
You can turn round either way (although your surgeon may advise you to turn away from your operated knee) but you must prevent pivoting or twisting your knee. Therefore, you must pick up your feet at each step making sure that the operated leg is not rotated too far in or out.

As your walking and confidence increase, you will usually progress to using two sticks. The sequence will be:

1. Right stick, left leg
2. Left stick, right leg

Sitting: How to sit down

It is advisable to sit in a high firm-backed chair with arms. You must feel for the chair with the back of your legs (a) and for the arms of the chair with your hands (b), sit down with your operated leg placed out in front of you taking the weight of your good leg (c and d).



OPERATED LEG SHADED

You will be taught how to do this by the Physiotherapist. The same procedure is used for the toilet but with the aid of a raised toilet seat, if necessary.

Often your operated leg will be supported on a stool to prevent ankle swelling. Do not sit too long – if there is any ankle swelling it is better to rest on the bed rather than to sit. Always avoid low sofas etc... Do not turn or trust your body when standing on your operated leg or sitting.



Dressing

It is useful to use the opposite hand to the operated leg when putting on socks, stockings, etc. If you have any difficulty, please ask the Physiotherapist or Occupational Therapist as you may require a stocking aid or long-handled shoe horn.



Your knee bending will be stiff initially, so try to protect your back when bending over. To retrieve fallen objects from the ground place your operated leg behind you and balance with your hand on a firm surface or stick bending forward from the waist and your good leg. You may find a 'helping hand' useful.



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Bathing

It is not advisable to get into a bath for 6 weeks. If you have a walk-in shower, this is ideal. If however there is a high step up to the shower you may need a block/small stool to help you get in and out. Bath seats and boards can be obtained from certain shops.

Stairs

You will be taught how to negotiate stairs by the Physiotherapist. Bannisters or rails should be used with your free hand when possible:

Remember

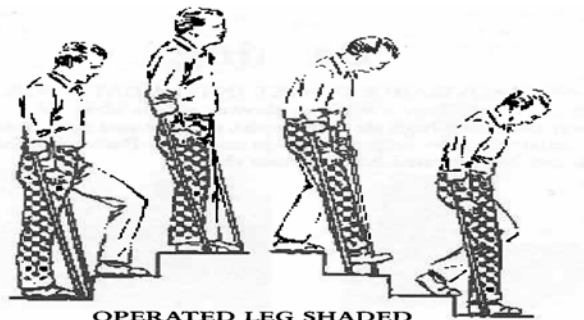
1. Good leg leads up.
2. Operated leg leads down.
3. Stick stays with the operated leg.

Therefore, going upstairs:

1. Unoperated leg first.
2. Followed by operated leg.

And going down stairs:

1. Stick.
2. operated leg
3. and finally, unoperated leg.



Getting in & out of a car

Getting in

1. Slide passenger seat back to give you as much leg room as possible.
2. Recline passenger seat to give you more room.
3. Put a cushion/pillow on the seat to raise it up a little higher.
4. Put a large plastic bag on the seat to help you 'move' easily (reduces friction) or wear a 'shell' suit.
5. Sit down bottom first using car door edge to steady you.
6. Grip both legs together or hook the foot of the un-operated leg under the operated leg or have someone to help you lift the leg into the car.

Getting Out

Turn 90° so both legs are on the ground outside the car. Use the car door edge to help you stand. Then have someone pass the crutches to you.

Surgeons generally recommend that patients do not drive their car for a minimum of 6 weeks after the operation. You may be wise to alert your insurance company.

If you have **ACUTE** pain with swelling in the calf muscle, or swelling or wound redness at home, call your General Practitioner.

AVOID TWISTING THE OPERATED LEG WHEN WALKING, e.g. WHEN TURNING AROUND.

Work

It depends on your job. It is possible to return at 8-10 weeks for those that do not perform manual work.

Prevention of Infection

If at any time (even years after your surgery) you develop a bacterial infection such as sore throat or significant chest, urinary infection or cellulitis (redness and swelling of the limb) you should inform your General Practitioner of your knee replacement. Antibiotics should be administered promptly to prevent the occasional complication of distant infection localizing in the hip area. This also applies if you have any teeth extracted.

Do's and Don'ts

DO:

- ✓ Carry on with the exercises as instructed by your physiotherapist
- ✓ Take regular short walks
- ✓ Keep walking with your walking aids until 4 to 6 weeks after your operation. You will then progress to 1 walking stick held in the opposite hand to your new knee.
- ✓ Stand and sit as shown in hospital – operated leg in front, push on the arms of the chair, bed mattress or toilet seat frame
- ✓ Avoid pressure on the wound until it has fully healed and keep the wound dry until the skin has fully healed
- ✓ Go to your GP if you have an unusual pain, temperature, notice a discharge from your wound or any pain or swelling in your calves
- ✓ **Please return any sticks or equipment when you have finished with them**
- ✓ Ensure you take regular pain-killers for as long as you need to
- ✓ Eat a balanced diet with plenty of fresh fruit and vegetables

Until reviewed by your surgeon or a member of his team

DO NOT:

- ❖ Twist the operated leg in or out whilst sitting or standing for at least 3 months
- ❖ Cross your legs, knees or ankles for at least 3 months
- ❖ Sit on low chairs, stools or toilets
- ❖ Drive a vehicle until advised it is safe to do so.
Usually this is after 6 weeks if you can sit comfortably in your car and perform an emergency stop safely.
- ❖ Do any heavy lifting, housework or gardening
- ❖ Discard any walking aids until advised to do so
- ❖ Do too much too soon – gradually increase your activities as able.
- ❖ Return to work or sporting activities until advised to do so

Further Information

Once you return home (in the first few weeks) if you have any questions or concerns that regarding your knee replacement call the Pre-operation Orthopaedic Clinic on (01782) 553216 if your operation was performed at the Hartshill Orthopaedic Centre. Your General Practitioner can always advise on general matters and will tell you how to get further advice with the urgency the situation demands.

Ward 121 01782 553748
Ward 124 01782 552700

The **Patient Advice and Liaison Service** would be pleased to offer confidential advice and support if you have any concerns. PALS can be contacted on 01782 552814 or Email patient.advice@uhns.nhs.uk

