



TOTAL KNEE REPLACEMENT

Patient Information

Realistic Expectations about Knee Replacement Surgery

An important factor in deciding whether to have total knee replacement surgery is understanding what the procedure can and can't do.

More than 90 percent of individuals who undergo total knee replacement experience a dramatic reduction of knee pain and a significant improvement in the ability to perform common activities of daily living. But total knee replacement won't make you a super-athlete or allow you to do more than you could before you developed arthritis.

Following surgery, you will be advised to avoid some types of activity, including jogging and high impact sports, for the rest of your life.

With normal use and activity, every knee replacement develops some wear in its plastic cushion. Excessive activity or weight may accelerate this normal wear and cause the knee replacement to loosen and become painful. With appropriate activity modification, knee replacements can last for many years.

Preparing for Surgery

Medical Evaluation

If you decide to have total knee replacement surgery, you will be assessed at a preadmission clinic, and you may be asked to have a complete physical by a physician several weeks before surgery to assess your health and to rule out any conditions that could interfere with your surgery.



Tests

Several tests-such as blood samples, a cardiogram and a urine sample-may be needed.

Preparing Your Skin and Leg

Infection, irritation or chronic swelling of the leg can increase the risk of infection post surgery. Contact the rooms prior to surgery if either of these conditions is present for a program to best prepare your skin for surgery.

Blood Donation

Routine blood transfusion is not usually required after knee replacement surgery, blood donation prior to surgery is not recommended. If you wish to donate blood, this option is available through the Red Cross.

Medications

Some medications should be stopped prior to surgery. You will be told at the preadmission clinic which medications you should stop taking and which you should continue to take before surgery. Please check.

Dental Evaluation

Although the incidence of infection after knee replacement is very low, an infection can occur if bacteria enter your bloodstream. Treatment of significant dental diseases (including tooth extractions and periodontal work) may be needed before your total knee replacement surgery.

Urinary Evaluations

A preoperative urological evaluation may be recommended for individuals with a history of recent or frequent urinary infections. For older men with prostate disease, appropriate treatment should be considered prior to knee replacement surgery.

Social Support

Though you will be able to walk on crutches or a walker soon after surgery, you may need help for several weeks with such tasks as cooking, shopping, bathing and doing laundry. If you live alone, a social worker or a discharge planner at the hospital can help you make advance arrangements to have someone assist you at home. Please advise staff at preadmission clinic if you will need extra support arranged.

Home Planning

In order to make your home easier to navigate during your recovery, consider:

- Safety bars or a secure handrail in your shower or bath
- Secure handrails along your stairways
- A stable chair for your early recovery with a firm seat cushion (height of 30-40cm), a firm back, two arms, and a footstool for intermittent leg elevation

- A toilet seat riser with arms, if you have a low toilet
- A stable shower bench or chair for bathing
- Removing all loose carpets and cords
- A temporary living space on the same floor, because walking up or down stairs will be more difficult during your early recovery

The hospital OT may be able to assist you if required.



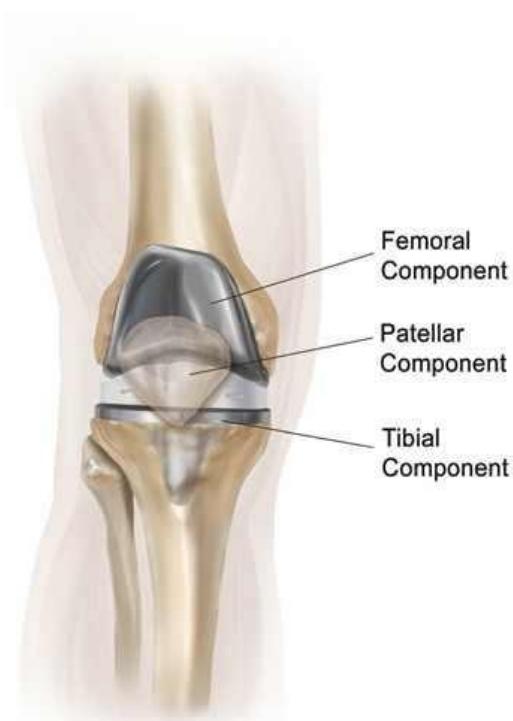
Your Surgery

You will most likely be admitted to the hospital on the day of your surgery. After admission, you will be evaluated by an anaesthetist. The most common types of anesthesia are general anesthesia, in which you are asleep throughout the procedure, and spinal anesthesia, in which you are awake but your legs are anesthetized. The anaesthetist will determine which type of anesthesia will be best for you with your input.

The procedure itself takes about two hours. The damaged cartilage and bone are removed and then the new metal and plastic joint surfaces are positioned to restore the alignment and function of your knee.

Many different types of designs and materials are currently used in total knee replacement surgery. Nearly all of them consist of three components: the femoral

component (made of a highly polished strong metal), the tibial component (made of a durable plastic often held in a metal tray), and the patellar component (also plastic).



After surgery, you will be moved to the recovery room, where you will remain for one to two hours while your recovery from anesthesia is monitored. After you awaken, you will be taken to your hospital room.

Unicompartmental Knee Replacement

Although not as common as total knee replacement, the partial or unicompartmental knee replacement is a viable alternative in some situations. The designs of the unicompartmental types of knee replacements have improved over the years, as has the sophistication of the instruments used to implant these types of artificial joints. The unicompartmental knee replacement also has smaller, less invasive incisions.

The "uni," as it is commonly called, is used to replace a single compartment of the arthritic knee. The knee joint has three compartments: the medial (inner) compartment, the lateral (outer) compartment and the patellofemoral (kneecap) compartment. If the damage is limited to either the medial or lateral compartment, that compartment may be replaced with the uni.

If two or more compartments are damaged, the uni may not be the best option. Only between six and eight out of 100 patients with arthritic knees are good candidates for a unicompartmental knee replacement.

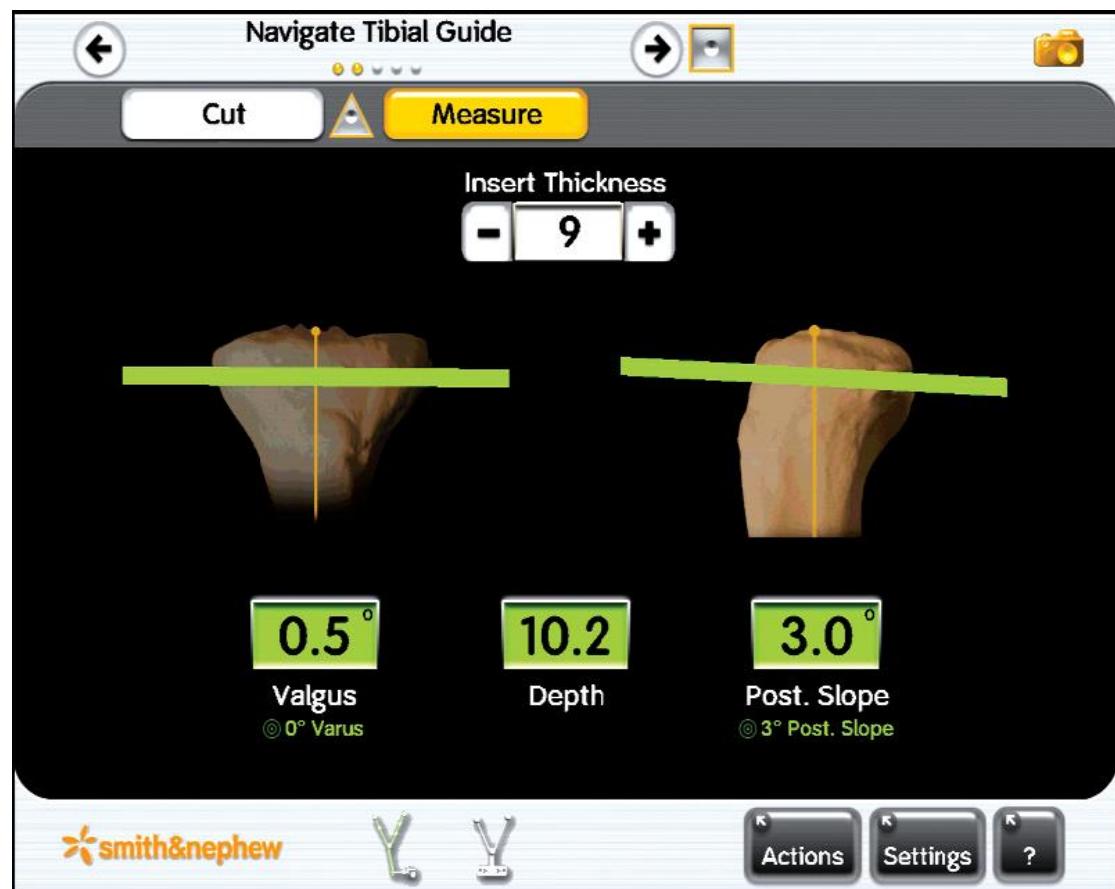
Because the uni can be inserted through a relatively small incision (about 8-10cm long), which does not interrupt the main muscle controlling the knee, rehabilitation is faster, hospitalization is shorter and return to normal activities is more rapid than after a total knee replacement.

However, this is still a serious operation, which has all the same risks as total knee replacement.

Minimally Invasive Knee Replacement

A recent advance in the performance of total knee replacement is the use of minimally invasive approaches. This technique, still in its relative infancy, is more technically challenging than standard total knee replacement. The incisions are approximately half the size of those used in a standard approach. The smaller incisions and new techniques to expose the joint may result in short-term advantages such as a quicker rehabilitation, possibly less pain and a shorter hospitalization, according to some reports.

In this practice, minimally invasive knee replacement is combined with Computer Aided Surgery to ensure excellent prosthesis component position. The computer helps to “navigate” the position of the bony cuts, and allows for a second check, after the cuts have been made, which may then require slight adjustment.



Hospital stay may be reduced, and the need for an extended stay for inpatient rehabilitation may be reduced or eliminated in most patients.

Although some studies show shorter hospitalizations and rehabilitation periods, other studies find minimally invasive surgery to be no better than standard techniques. The risks are not well known, but are probably comparable to those for a standard total knee replacement.

Your Stay in the Hospital

You will most likely stay in the hospital for between 1 and 7 days. After surgery, you will feel some pain, but medication will be given to you to make you feel as comfortable as possible. Pain management is an important part of your recovery, so talk with your surgeon if postoperative pain becomes a problem. Walking and knee movement are important to your recovery and will begin immediately after your surgery.

To avoid lung congestion after surgery, you should breathe deeply and cough frequently to clear your lungs.

One or more measures to prevent blood clots and decrease leg swelling, such as special support hose, inflatable leg coverings (compression boots) and blood thinners will be used.

Foot and ankle movement also is encouraged immediately following surgery to increase blood flow in your leg muscles to help prevent leg swelling and blood clots. Most patients begin exercising their knee the day of their surgery. A physiotherapist will teach you specific exercises to strengthen your leg and restore knee movement to allow walking and other normal daily activities soon after your surgery.



Your Recovery at Home

The success of your surgery also will be maximised by you following your discharge instructions at home during the first few weeks after surgery.

Wound Care

The wound on the front of your knee will be closed with a suture beneath your skin. This suture will not require removal.

Your wounds will be dressed with waterproof dressings under the outer bandage. The outer bandage may be removed 24hrs after your surgery. The smaller dressing is to

remain intact for 7-10 days. This dressing will be replaced when necessary, or prior to discharge after a wound review.

You may shower, keeping the wounds dry. Once the outer larger dressing is removed, the smaller dressing will keep the wounds dry. Do not soak the wound; just let the water flow over it. Do not scrub the wound. If water gets under the dressing, remove the wet dressing, pat dry (do not rub the wounds) and reapply the dressing.

Avoid soaking the wound in water until the wound has thoroughly sealed and dried. The wound may be bandaged to prevent irritation from clothing or support stockings.

Loosen any tight bandage at any time.

If the smaller waterproof dressing comes off before seven days, a new dressing should be reapplied. This may have been given to you on discharge from the hospital, or can be bought from a chemist.

Once the wounds have healed **and** after 2 weeks, you should massage the scars with a cream (sorbolene or Vitamin E is best). This will help to break down the scar tissue around the wounds.

Diet

Some loss of appetite is common for several weeks after surgery. A balanced diet, often with an iron and vitamin C supplement, is important to promote proper tissue healing and restore muscle strength.

Activity

Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal activities of daily living within three to six weeks following surgery. Some pain with activity and at night is common for several weeks after surgery. Your activity program should include:

- A graduated walking program to slowly increase your mobility, initially in your home and later outside
- Resuming other normal household activities, such as sitting and standing and walking up and down stairs
- Specific exercises several times a day to restore movement and strengthen your knee. You probably will be able to perform the exercises without help, but you may have a physiotherapist help you at home or in their rooms.

Driving usually begins when your knee bends sufficiently so you can enter and sit comfortably in your car and when your muscle control provides adequate reaction time for braking and acceleration. Most individuals resume driving about four to six weeks after surgery.



Ankle Pumps: Keeping leg strait, point toes away from you. Flex foot towards you.



Extension Stretch: Prop foot of operated leg up on chair. Place a rolled towel under the ankle and ice pack over the knee. Place 5-10 pounds of weight on top of the knee (a bag of rice works well).



Gluteal Sets: Contract gluteal (posterior) muscle and hold. Do NOT hold breath. Relax muscle.



Straight Leg Raises: Lie on back, non surgical knee bent and foot flat. Lift opposite foot up 12 inches Keep knee strait and toes pointed up. Lower leg back to floor.



Knee Extension – Long Arc: Sit with back against chair, straiten knee, then lower leg back to the floor.

Avoiding Falls

A fall during the first few weeks after surgery can damage your new knee and may result in a need for further surgery. Stairs are a particular hazard until your knee is strong and mobile. You should use a cane, crutches, a walker, hand rails or someone to help you until you have improved your balance, flexibility and strength.

Your physiotherapist will help you decide what assistive aides will be required following surgery and when those aides can safely be discontinued.

Possible Complications After Surgery

The complication rate following total knee replacement is low. Serious complications, such as a knee joint infection, occur in less than 2 percent of patients. Major medical complications such as heart attack or stroke occur even less frequently. Chronic illnesses may increase the potential for complications. Although uncommon, when these complications occur, they can prolong or limit your full recovery.

Blood Clots

Blood clots in the leg veins are the most common complication of knee replacement surgery. A prevention program, which may include periodic elevation of your legs, lower leg exercises to increase circulation, support stockings and medication to thin your blood will be part of your treatment.

Warning signs of possible blood clots in your leg include:

- Increasing pain in your calf
- Tenderness or redness above or below your knee
- Increasing swelling in your calf, ankle and foot

Warning signs that a blood clot has traveled to your lung include:

- Sudden increased shortness of breath
- Sudden onset of chest pain
- Localized chest pain with coughing

Notify your doctor immediately if you develop any of these signs.

Preventing Infection

The most common causes of infection following total knee replacement surgery are from bacteria that enter the bloodstream during dental procedures, urinary tract infections, or skin infections. These bacteria can lodge around your knee replacement and cause an infection.

For the first two years after your knee replacement, you must take preventive antibiotics before dental or surgical procedures that could allow bacteria to enter your bloodstream. After two years, talk to your dentist or urologist to see if you still need preventive antibiotics before any scheduled procedures.

Warning signs of a possible knee replacement infection are:

- Persistent fever (higher than 38 degrees orally)
- Shaking chills
- Increasing redness, tenderness or swelling of the knee wound
- Drainage from the knee wound
- Increasing knee pain with both activity and rest

Notify your doctor immediately if you develop any of these signs.

Other Potential Complications

Although implant designs and materials as well as surgical techniques have been optimized, wear of the bearing surfaces or loosening of the components may occur. Additionally, although an average of 115 degrees of motion is generally anticipated after surgery, scarring of the knee can occasionally occur and motion may be more limited. This is particularly true in patients with limited motion before surgery. Finally, while rare, injury to the nerves or blood vessels around the knee can occur during surgery.

If you have any specific concerns or questions, please do not hesitate to ask prior to your surgery.

How Your New Knee Is Different

You may feel some numbness in the skin around your incision. You also may feel some stiffness, particularly with excessive bending activities. Improvement of knee motion is a goal of total knee replacement, but restoration of full motion is uncommon. The motion of your knee replacement after surgery is predicted by the motion of your knee prior to surgery. Most patients can expect to nearly fully straighten the replaced knee and to bend the knee sufficiently to go up and down stairs and get in and out of a car. Kneeling is usually uncomfortable, but it is not harmful. Occasionally, you may feel some soft clicking of the metal and plastic with knee bending or walking. These differences often diminish with time and most patients find these are minor, compared to the pain and limited function they experienced prior to surgery.

Your new knee may activate metal detectors required for security in airports and some buildings. Tell the security agent about your knee replacement if the alarm is activated.

After surgery, make sure you also do the following:

- Participate in regular light exercise programs to maintain proper strength and mobility of your new knee.
- Take special precautions to avoid falls and injuries. Individuals who have undergone total knee replacement surgery and suffer a fracture may require more surgery.
- Notify your dentist that you had a knee replacement. You should be given antibiotics before all dental surgery for the rest of your life.
- You will require a routine follow-up examination and X-rays postoperatively at 6 weeks, 12 weeks (may not be required) 6 months, 1 year then 5 yearly unless problems are identified.