

## YOUR GUIDE TO TOTAL KNEE REPLACEMENT

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## **YOUR GUIDE TO TOTAL KNEE REPLACEMENT**

The information in this booklet is designed to help you understand more about total knee replacement. It is only intended to be a general guide and there will be variations from one hospital to another. It is therefore important that you discuss everything with your doctor.

## ANATOMY OF THE KNEE JOINT

The knee joint is among the most complex joints in the body. Apart from bending and straightening, it allows other complex movements such as turning. The natural knee consists of three bones:

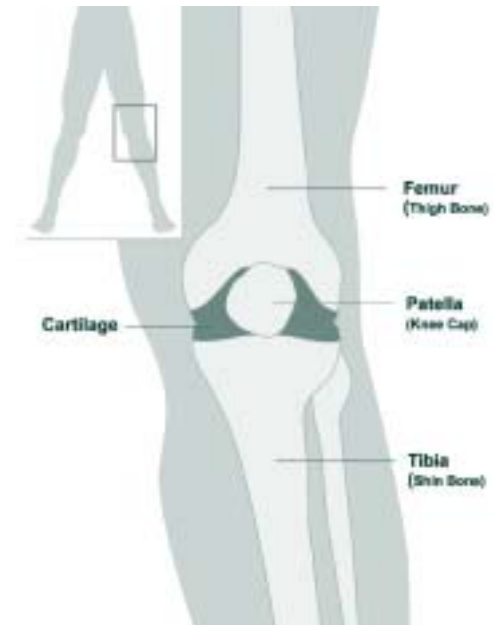
The thigh bone (**Femur**), the shin bone (**Tibia**) and the kneecap (**Patella**).

The lower end of the femur, the upper end of the tibia and the undersurface of the patella are all covered by articular cartilage. The articular cartilage is a tough and very smooth material that ensures movements of the knee are both painfree and smooth.

Between the two ends of the femur and tibia there are two other pieces of cartilage, known as the Meniscii, which acts as padding.

The knee joint is enclosed in a **Joint Capsule**. The joint capsule is lined with the synovial membrane which produces **Synovial Fluid** (a viscous fluid that provides friction free sliding). Working together, the synovial fluid and meniscii, act as a shock absorber. They absorb the powerful forces that impact on the joint during exercise and activity.

Envelopes of tough ligaments connect the femur, tibia and patella, covering the joint and stabilising it. The knee's movements are initiated and controlled by the strong muscles of the thigh and lower leg.



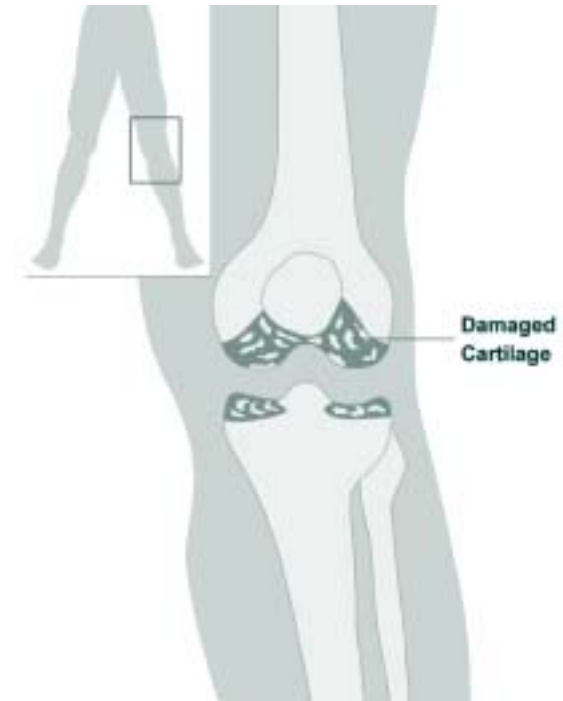
A healthy knee joint will allow the leg to move freely within its range of motion, while absorbing the impact that results from activities such as walking and running.

## CONDITIONS REQUIRING A KNEE REPLACEMENT

There are a number of conditions that can result in a patient having to undergo knee replacement surgery. Perhaps the most common condition is **Osteoarthritis**, commonly referred to as 'wear and tear arthritis'. Osteoarthritis can occur with no previous history of injury to the knee joint. The knee simply 'wears out'. The major problem in osteoarthritis is that the articular cartilage wears away. This results in bone rubbing on bone during movement which can cause stiffness, swelling and pain.

Abnormalities of knee joint function resulting from **trauma to the knee, fracture of the knee, torn meniscii and ligaments** can lead to degeneration many years later. The mechanical abnormality leads to excessive wear and tear, much like a poorly aligned tyre that wears out too soon on a car.

**Rheumatism and Congenital Conditions** can also lead to the breakdown of bones or joint parts. Eventually these changes can lead to destruction of the articular cartilage. Again this leads to bone on bone contact which can cause pain.



## TREATMENT OPTIONS

There are a number of ways in which the pain in your knee can be relieved. These can include changes in lifestyle or taking pain relieving medications. Another option is an operation to replace your knee joint. Replacing the knee joint is usually recommended when the pain becomes so constant that it is limiting your everyday activities and when you and your doctor agree that it is the best course of action.

### About Knee Replacement Surgery

The aim of knee replacement surgery is to:

- Relieve your pain
- Correct any deformity for example, bow leg or knock knee
- Restore any loss of function in your knee
- Improve your quality of life

Knee joint replacement surgery involves resurfacing the ends of the femur, the tibia and the underside of the patella with man made components, called prostheses. The knee prostheses are designed to simulate the human anatomy as close as possible.

Depending on the damage to your knee, your surgeon may decide to give you a total knee replacement or a partial knee replacement.

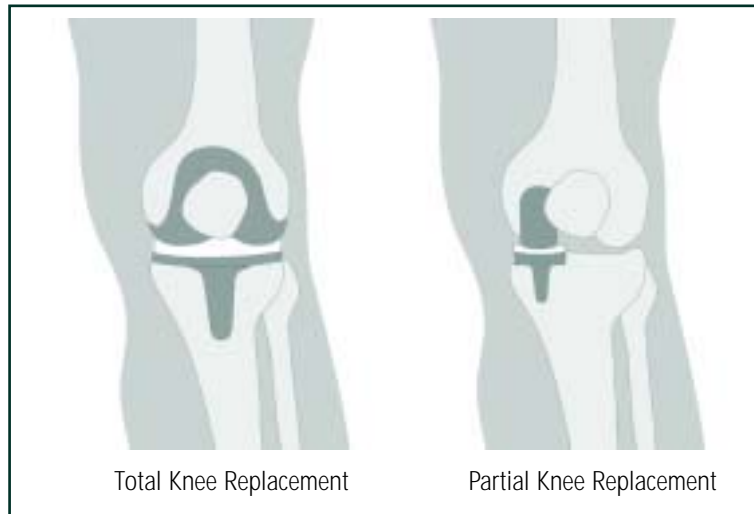
There are many different designs of knee prosthesis available and your surgeon will choose the one considered most suitable for you.



## COMPONENTS OF A KNEE REPLACEMENT

Each knee prosthesis is made up of several parts:

1. The femoral component resurfaces the femur. The femoral component is made of a metal alloy.



2. Although the patella is not always resurfaced, the patella component replaces the undersurface of the patella that rubs against the femur. The patella component is made of plastic or plastic with a metal alloy back.
3. The tibial component can be a single or two piece design. The single piece is made of plastic. The two piece design consists of a metal tray that is secured to the bone and a plastic insert that provides a smooth surface on which the femur moves. The plastic insert may or may not be attached to the tibial tray.

## PREPARING YOURSELF FOR SURGERY

Knee joint replacement surgery is a very successful procedure proven to be safe and effective. As with all surgery, there are a number of things which the hospital will ask you to do to ensure the operation is a success. If you have any questions or concerns, ask your doctor or hospital staff.

The next sections explain what you will be asked to do before you go into hospital, during your hospital stay and when at home recovering.

## BEFORE YOU GO INTO HOSPITAL

There are several things that you can do before your surgery to make your recovery easier and safer.

### \* **Commit to the success of your surgery**

Working as a team, you, your physician, physiotherapist and your family must adopt a positive attitude toward the success of your surgery. Together, you will gain a clear understanding of the common goals and expectations of the procedure.

### \* **Remain as active as possible**

Remaining active while waiting for your surgery is an important key to the success of your surgery. Studies have shown that the stronger and more flexible you are before your operation the quicker you will recover and more flexible you will be after the operation. Gentle exercise such as walking, range of motion exercises

and swimming can help you to stay strong and flexible. Seek your doctor's advice before beginning any exercise.



### \* **STOP SMOKING**



If you have not already done so, it is suggested that you stop smoking at least four weeks before your surgery. This will help reduce the risk of complications during and after your surgery.

### \* **Make sure all infections are cleared up prior to the surgery**

These include; tooth abscesses, bladder infections, infections such as leg ulcers, colds and the flu. This is because infections could spread through your body during the operation and infect your new replaced joint. Therefore you must notify your surgeon immediately if you are suspected or diagnosed with an infection, as they may have to reschedule your surgery.

You may also wish to consider how you will cope after the operation, for example, you may need help getting home, shopping, etc. Do discuss this with your doctor or a hospital staff member.



## ■ YOUR HOSPITAL STAY

You should be admitted to hospital in good time before your operation to allow time for you to settle in. You will be examined by your anaesthetist, checking your heart and chest. This is an opportunity for you to ask any questions before your operation.

On the day of your operation, it is usual that your doctor will ask you not to drink or eat anything. The area around your knee may be shaved to reduce the risk of infection.

An hour or so before the operation you will be given tablets or an injection to relax you. This is known as a **'pre-med'**. You will then be taken to the operating theatre where you will be given your anaesthetic and have your operation.

The operation usually takes 1-2 hours to complete.

Immediately after your operation you will be moved to the recovery room for close monitoring. You will have one or two drips in your arm to put fluid back into your body. When you wake up from surgery, your leg may be swollen and bruised and the muscles may be stiff and sore. Your new joint should not cause you any discomfort, but you may experience some pain from the surgical procedure itself. You will be given pain medications to take regularly whilst you are recovering.

When you are fully conscious, breathing well and your blood pressure and pulse are stable, you will be taken back to the ward. You probably won't feel much like eating at first, but it is important that you drink. The scar on the front of the knee should eventually fade to a thin white line.



During the next few days the drips will be removed. Your physiotherapist will visit you the day after your operation to commence you on your exercise programme and help you get back on your feet walking again. You may feel unstable and in pain at first, but you will be given a frame to help you walk with, then crutches or sticks, which you

may need for four to six weeks after, depending on your surgeon's instructions.

Once you, your surgeon and physiotherapist are happy with your condition and mobility you will be discharged from hospital. The usual hospital stay for knee joint replacement is usually three to seven days.



## AT HOME RECOVERING



Upon returning home you will need help for the first few weeks and should make arrangements for someone to shop for you and help you around the house. You will need to continue taking your regular medications and continue exercising as directed by your physiotherapist and surgeon. Remaining active and practicing the prescribed exercises are the quickest ways to full recovery.

You have every reason to expect to regain full use of your leg. However this will take time. You should be able to return to normal activities again within a few months of the operation. These may include driving, gardening and playing golf, but check with your doctor first. There will be continual improvement throughout the first 12 months. Once the operation has fully healed, many people can't tell they have an artificial joint.



## **SPECIAL INSTRUCTIONS**

Every effort is made to minimise any risk or complications from occurring. However, like any other surgery they can occur. Listed below are common signs and symptoms that may indicate a complication with your new joint.

Please contact your doctor should you feel that you may have a problem or are experiencing any of these signs and symptoms:

- **Fever of 101 degrees Fahrenheit or 38.3 degrees Celsius**
- **Unusual redness, heat, or oozing at the wound site**
- **Trouble breathing or shortness of breath**
- **Increase in pain that is not relieved by medication**
- **Increase in pain or swelling in the calf**
- **Increase in swelling of the leg that is not relieved by elevation**