

# Total Knee Replacement

## The Knee

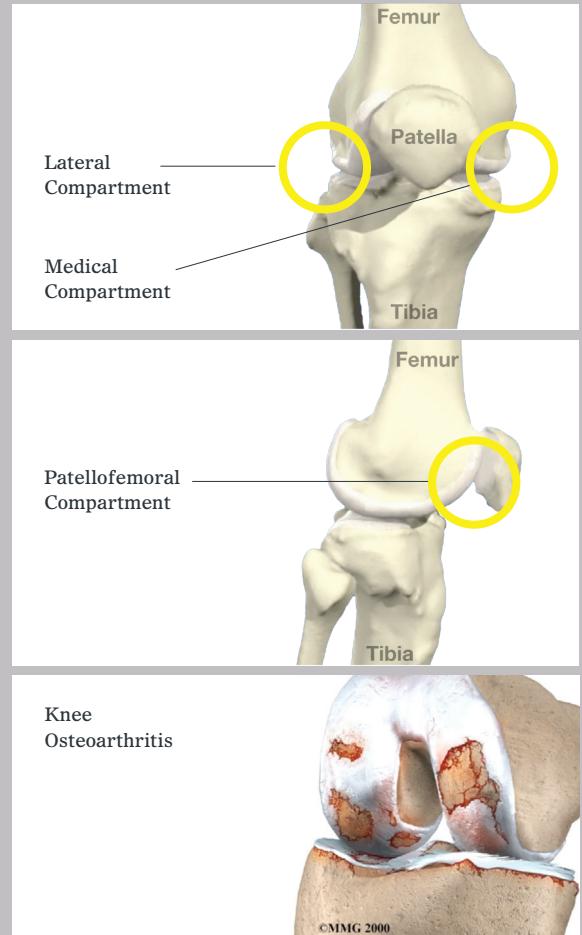
The knee is made up of 3 bones. The femur (thigh bone), the tibia (shin bone), and the patella or knee cap. When describing arthritis in the knee doctors talk of three 'compartments' which are the three areas where the bones of the knee make contact with one another.

The medial (the inside half) and lateral (the outside half) compartments are formed by the rounded ends of the femur (condyles) making contact with the flat top of the tibia. The patello-femoral compartment is where the knee cap makes contact with the femur bone, below it.

Within each compartment the ends of the bones are coated in articular cartilage. The function of articular cartilage is to absorb shock and provide an extremely smooth surface to facilitate motion. We have articular cartilage essentially everywhere that two bony surfaces move against one another, or articulate.

## Arthritic knee

Arthritis is a general term covering numerous conditions where the joint surface (articular cartilage) wears out. When this occurs, the bone ends rub together and this is painful. There are numerous conditions that cause arthritis and often the exact cause is unknown. In general it affects people as they get older (Osteoarthritis-wear and tear arthritis). However the exact cause is often unknown and may be secondary to trauma, infection, inflammation or increased stress (overuse, overweight).



## Rationale for treatment

The main reason for replacing any arthritic joint with an artificial joint is to stop the bones from rubbing against each other. This rubbing causes pain. Replacing the arthritic bone gives the joint a new surface, which moves smoothly without causing pain. The decision to undergo surgery is a "quality of life" choice. It should only be undertaken when other non-operative forms of treatment have been tried and have failed i.e. regular painkillers, weight loss, physiotherapy and walking aids.

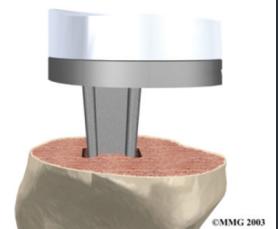
## The artificial knee

Each total knee replacement is made of two parts.

1. The tibial component (bottom portion) replaces the top surface of the shin bone, the tibia. It is made of two parts: a metal tray that is attached directly to the bone, and a plastic spacer that provides the slick surface.
2. The femoral component (top portion) replaces the bottom surface of the thigh bone (the femur) and the groove where the patella fits. It is made of metal.

Surgery is performed under sterile conditions in an operating theatre under spinal or general anaesthesia. An incision is made over the affected knee and the damaged portions of the femur (thigh bone) and tibia (shin bone) are then removed. The surfaces of the knee are then replaced with the implants. The knee is then carefully closed and bandaged.

1. Tibial component  
replacing top of tibia



2. Femoral component



3. The total knee  
replacement in place



# What is involved for you as a patient?

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## Before the operation

- A full medical assessment to ensure that you are fit for surgery and to minimise the risk of complications
- Please notify your surgeon if you are taking any anticoagulants (blood thinners) or arthritis tablets.
- You must contact your surgeon before you go into hospital if you have any evidence of broken skin, ulcers or pimples around the knee which is to be operated on or if you have a cold, cough or infection. Your surgery may have to be postponed until you have clearance that you are fit again to have the surgery.

## Day of admission

- Admitted the day before or the morning of surgery.
- You will be assessed by your surgeon and consented for surgery. This provides an opportunity for any further questions that you may have.

## Following the operation

- The day following surgery you will be mobilised with the help of a physiotherapist.
- Most patients are able to go home after spending two to four days in the hospital. You can be discharged from hospital when you can demonstrate a safe ability to get in and out of bed, walk with your crutches or walker, go up and down stairs safely, and access the bathroom.

## Instructions On Discharge From Ward

- Keep the wound dry for 7-10 days.
  - All stitches are usually dissolvable therefore do not need removed.
  - While at home you should continue your knee exercises to improve the range of movement of the knee.
  - Driving Advice: To return to driving at 6 weeks depending on knee function.
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The decision to proceed to surgery is made when the advantages of surgery outweigh the potential disadvantages. Some complications require revision to another joint replacement.

### Local Complications

<b>Infection</b>	This occurs in 1 in 100 people and is a major complication and may require further surgery, and a prolonged stay in hospital.
<b>Clots in the leg (Deep venous thrombosis)</b>	The clots cause leg swelling and may break off and travel to the lungs (Pulmonary embolism) in 1 in 100 people and can cause death in 1 in 3000.
<b>Pain</b>	After 10 years 1 in 20 unicompartmental knee replacements need revised to a total knee replacement due to further arthritis in other parts of the knee.
<b>Loosening of the artificial joint</b>	Like your own knee the your new knee replacement can wear out or loosen. However 9 out of 10 knee replacements are still working after 15 years.
<b>Numbness around the wound</b>	Numbness at the side of the incision usually occurs. This may be temporary or permanent.
<b>Damage to blood vessel behind the knee</b>	This rare complication may require further surgery.
<b>Stiffness</b>	Stiffening of the knee causing difficulty in walking and sitting and pain on movement.
<b>Fracture or ligament injury</b>	This occurs in 1 in 100 people and may require a period of immobilisation after the operation or possibly the need for further surgery.

### Medical Complications

<b>Anaesthetic risks</b>	Allergic reactions to medications and damage to nerves from nerve blocks can occur.
<b>General complications</b>	Following or during surgery there is a risk of heart attack, stroke, kidney failure and pneumonia. These risks are increased if you have current medical problems and can be potentially fatal.

You must not proceed to surgery until you are confident that you understand this procedure, particularly the complications.