



# Total Knee Replacement

## **What is a total knee replacement?**

A total knee replacement is a surgical procedure whereby the diseased knee joint is replaced with artificial material. The knee is a hinge joint which provides motion at the point where the thigh meets the lower leg. The thighbone (or femur) abuts the large bone of the lower leg (tibia) at the knee joint. During a total knee replacement, the end of the femur is removed and replaced with a metal shell. The end of the lower leg bone (tibia) is also removed and replaced with a metal tray with a stem. A layer of specialised polyethylene is then placed between the two metal components. Depending on the condition of the kneecap portion of the knee joint, a plastic "button" may also be added under the kneecap surface. The artificial components of a total knee replacement are referred to as the prosthesis. The posterior cruciate ligament is a tissue that normally stabilizes each side of the knee joint so that the lower leg cannot slide backward in relation to the thighbone. In total knee replacement surgery, this ligament is either retained, sacrificed, or substituted by a polyethylene post. Each of these various designs of total knee replacement has its benefits and risks. It can take up to a year to realise the full benefit of the operation.

## **Which patients should consider a total knee replacement?**

Total knee replacement surgery is considered for patients whose knee joints have been damaged by either progressive arthritis, trauma, or other rare destructive diseases of the joint. The most common reason for knee replacement in the UK is osteoarthritis of the knees.

Regardless of the cause of the damage to the joint, the resulting progressively increasing pain and stiffness and decreasing daily function can lead the patient to consider total knee replacement. Decisions regarding whether or when to undergo knee replacement surgery are not easy. Patients should understand the risks as well as the benefits before making these decisions.

## **What is a partial knee replacement?**

Osteoarthritis doesn't always affect all areas of the knee. The most commonly affected area is the inner aspect of the knee due to the alignment of human leg. If the other areas are not damaged, the knee has a good range of movement and the anterior cruciate ligament is intact, then a patient can be considered for a partial replacement. The operation is performed through a much less invasive incision. Less commonly the outer aspect of the knee or the area under the knee cap are affected in isolation.

The recovery is usually much quicker than with a total knee replacement and the implants are designed to last as long as a total knee replacement.

## **What are the risks of undergoing a total or partial knee replacement?**

The risks of a total knee replacement include blood clots (deep vein thrombosis) in the legs that can travel to the lungs (pulmonary embolism). Pulmonary embolism can cause shortness of breath, chest pain and can even cause death. To help prevent this a variety of measures are undertaken. These include wearing compression stockings, using pumps on the feet and lower legs until you are walking and also the use of blood thinning medication. There can also be chronic knee pain and stiffness, bleeding into the knee joint, nerve



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damage, blood vessel injury, and infection of the knee which can require reoperation. Furthermore, the risks of anesthesia include potential heart, lung, kidney, and liver damage.

### **How long do the implants last?**

Both partial and total knee replacements are designed to last for up to 10-15 years. They have been shown to last longer than this in some published studies. They are designed to withstand the stresses and strains of normal day to day activities. If a patient goes running or plays impact sports such as tennis and squash, then the implant may wear out more quickly and there may be a need to perform revision ( re-do ) knee replacement surgery. The results of revision knee replacement surgery tend not be as good as the first surgery.

### **What type of anaesthetic is used?**

Knee replacement surgery is commonly performed under spinal anaesthesia but can be performed under a general anaesthetic using nerve blocks to help with pain control after the operation. You may be prescribed a morphine pump that you have control of for the first 24 hours.