

Unicompartmental knee replacement

A painful knee can severely affect your ability to lead a full, active life. One of the most recent advances in knee replacement surgery is the unicompartmental knee replacement. This type of knee replacement is less invasive than a full knee replacement. The operation is designed to replace only the portions of the joint that are most damaged by arthritis. This can have significant advantages, especially in younger patients. Removing less bone during the initial operation makes it much easier to perform a revision artificial knee replacement later in life.

The Knee

The knee is made up of 3 bones. The femur (thigh bone), the tibia (shin bone), and the patella or knee cap. The joint acts as a hinge with some rotation. 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).



An osteoarthritic knee with wear confined to one side of the joint only

Rationale for treatment

Unicompartmental knee replacement is an appropriate surgical option in selected cases of arthritis affecting one side of the joint only.

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 unicompartmental knee

Each unicompartmental knee replacement is made of three parts.

1. The femoral component (top portion) replaces the worn bottom surface of the thigh bone (the femur). It is made of metal.
2. A plastic insert that sits between the femoral and tibial components and provides the slick surface.
3. The tibial component (bottom portion) replaces one side of the top surface of the shin bone, the tibia. 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.



The unicompartmental knee



Unicompartmental knee replacement in place

What is involved for you as a patient?

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

Infection	This occurs in 1 in 100 people and is a major complication and may require further surgery, and a prolonged stay in hospital.
Clots in the leg (Deep venous thrombosis)	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.
Pain	The knee will be sore after the operation. Pain will improve with time. Rarely, pain will be a chronic problem and may be due to other complications listed below, or for no obvious reason.
Numbness around the wound	1 in 10 people will have a delay in bone healing following their surgery and 1 in 50 patients will require further surgery to achieve bone union.
Numbness around the wound	Numbness at the side of the incision usually occurs. This may be temporary or permanent.
Damage to blood vessel behind the knee	This rare complication may require further surgery.
Stiffness	Stiffening of the knee causing difficulty in walking and sitting and pain on movement.
Fracture or ligament injury	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

Anaesthetic risks	Allergic reactions to medications and damage to nerves from nerve blocks can occur.
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Alternative treatments include:

- Pain relief - NSAIDs and regular Paracetamol
- Physiotherapy and an exercise program.
- Weight loss program
- Walking aids

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