PROCEDURE

Partial knee replacement

Partial knee replacement replaces the damaged part of a knee while preserving healthier bone, cartilage, and ligaments.

PURPOSE
Relieve pain and restore function in one damaged knee compartment

PROCEDURE TYPE
Therapeutic - surgical replacement of one knee compartment

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General or spinal anaesthesia, often with a nerve block

HOW LONG IT TAKES
About one to two hours

PREPARATION
Fasting, medication review, skin checks, and home planning

RECOVERY
Same day or overnight; no driving until safely cleared

MAIN RISKS
Infection, blood clots, stiffness, loosening, persistent pain

RESULTS
Implant position immediate; recovery judged over weeks to months

Overview

Partial knee replacement is surgery to replace one damaged section, or compartment, of the knee. It is sometimes called unicompartmental knee replacement.

The knee has three main compartments: the inner side, outer side, and the area between the kneecap and thigh bone. Partial replacement is most often used when arthritis is limited to one of these areas.

The surgeon removes damaged cartilage and a small amount of underlying bone. Metal parts cover the prepared bone surfaces, and a strong plastic spacer allows the joint to move smoothly.

Unlike total knee replacement, this procedure preserves the unaffected parts of the knee and

usually keeps important ligaments. The incision may be smaller, and recovery may be quicker, but partial replacement is not suitable for every pattern of knee damage.

Why the procedure is performed

Partial knee replacement is mainly used to reduce pain and improve movement when arthritis has severely damaged one knee compartment.

It may be considered when knee pain limits walking, sleep, work, or daily activities and non-surgical treatments no longer provide enough relief. These treatments may include exercise therapy, pain medicines, activity changes, walking aids, or injections.

The aim is to help you move more comfortably. It cannot make the knee identical to a natural, healthy joint, and some aching or stiffness may remain.

Who should and should not have it

You may be considered for partial knee replacement if scans show damage mainly in one compartment and your symptoms match that location. The knee should usually have stable ligaments and enough movement for the implant to work properly.

Age alone does not decide whether you are suitable. Your general health, activity needs, knee alignment, ligament function, and the extent of arthritis all matter.

Partial replacement may not be the right choice if you have:

Surgery may be delayed while an infection is treated or while conditions such as poorly controlled diabetes, anaemia, heart disease, or lung disease are assessed and improved. Smoking can increase wound and infection risks, so support to stop may be offered before surgery.

Sometimes the full extent of damage becomes clear only during the operation. If other compartments are more damaged than expected, the surgeon may need to perform a total knee replacement instead. This possibility should be discussed during consent.

- Significant arthritis in more than one knee compartment
- Major ligament damage or knee instability
- Severe stiffness or a deformity that cannot be corrected
- Certain inflammatory joint conditions affecting several compartments
- An active infection anywhere in the body

- Broken skin, sores, or infection near the knee

How to prepare

The treating facility's own instructions take priority because fasting rules, medication plans, and admission arrangements differ.

Tell the surgical team about all prescription medicines, over-the-counter products, vitamins, and supplements you use. Blood thinners and some diabetes medicines may need a specific plan. Do not stop them unless the team tells you how and when.

Before surgery, you may have blood tests, a heart tracing, X-rays, or other checks. Tell the team if you develop a fever, infection, skin wound, or new illness.

Plan for recovery at home. Arrange transport because you cannot drive yourself home. Move trip hazards, place commonly used items within reach, and consider whether you will need help with meals, shopping, pets, or stairs.

Follow the facility's instructions about:

- When to stop eating and drinking
- Washing or using an antiseptic skin product
- Which medicines to take on the morning of surgery
- What walking aids to bring
- When and where to arrive

What happens during the procedure

You may have general anaesthesia, which makes you unconscious, or spinal anaesthesia, which numbs the lower half of your body. Sedation may help you relax. A nerve block may also be used to control pain after surgery.

The surgeon makes an incision over the knee and checks the cartilage, ligaments, and other compartments. Damaged cartilage and a thin layer of bone are removed from the affected area.

Metal implant surfaces are placed over the prepared ends of the bones. A medical-grade plastic spacer sits between them. The implants may be secured with bone cement or designed to allow bone to grow onto them.

The surgeon checks movement and stability before closing the incision. Some hospitals use

computer navigation or robotic assistance to help position the implant. These tools assist the surgeon but do not perform the operation independently.

Recovery and what to expect afterward

Pain is expected after surgery, especially during the first few days. You may receive several forms of pain relief. Swelling, bruising, warmth, and temporary stiffness are also common. Ice and elevation may be recommended.

You can usually drink and eat once you are awake and not feeling sick. Start with lighter food if anaesthesia has affected your appetite.

Most people begin standing and walking on the day of surgery or the following day, with help from staff and a walking aid. You will be shown exercises to improve movement and strengthen the leg. Follow the weight-bearing instructions given to you.

Some people go home the same day; others stay overnight or longer because of their health, pain control, mobility, or home support.

Do not drive home. You can usually return to driving only when you are no longer taking medicines that impair alertness, can enter and leave the car safely, and can perform an emergency stop without hesitation. Your surgeon and motor insurer may have additional requirements. Recovery of the right knee may take longer for driving.

Return to work depends on the job and your progress. Desk work may be possible within several weeks, while work involving lifting, climbing, kneeling, or prolonged standing usually takes longer.

Risks and possible complications

Every knee replacement has risks. Your personal risk depends on your health and the condition of your knee.

Possible complications include:

A partial replacement can feel more like a natural knee than a total replacement for some people. However, registry data generally show a higher likelihood of later revision surgery for partial replacements than for total knee replacements. Your surgeon can explain how this trade-off applies to your knee.

- Infection around the wound or implant

- A blood clot in the leg, called deep vein thrombosis
- A clot travelling to the lungs, called pulmonary embolism
- Bleeding, stiffness, ongoing pain, or reduced movement
- Damage to a nearby nerve or blood vessel
- Implant wear, loosening, movement, or fracture around the implant
- Arthritis progressing in the parts of the knee that were not replaced
- The need for another operation or conversion to total knee replacement
- Reactions or other complications related to anaesthesia

Results and follow up

An X-ray may be taken soon after surgery to check the implant position. Improvement in pain and movement is judged over the following weeks and months rather than immediately.

Routine follow-up usually includes a wound and recovery check, followed by later reviews of movement, strength, pain, and implant position. Keep doing the recommended exercises even if progress feels gradual.

Contact the team before a scheduled appointment if pain or swelling is getting worse rather than slowly improving. Tell other healthcare professionals that you have a knee implant, particularly before future operations or treatment for an infection.

Alternatives

Partial knee replacement is optional surgery. Alternatives depend on the amount and location of damage.

- Exercise and physiotherapy: Improve strength and function without surgical risk, but cannot replace lost cartilage.
- Pain medicines or anti-inflammatory medicines: May reduce symptoms temporarily but can cause side effects and do not repair the joint.
- Walking aids or a knee brace: Can reduce load on the painful area but may be inconvenient and may not control severe pain.
- Joint injections: May give temporary relief for some people but do not reverse arthritis.

- Weight management, when relevant: Can reduce stress on the knee, but improvement may be limited when joint damage is advanced.
- Osteotomy: Realigns the leg to move pressure away from the damaged area. It preserves the natural joint but involves bone healing and may not provide lasting relief.
- Total knee replacement: Treats damage across the whole knee and may have a lower revision risk, but removes more bone and usually involves a longer recovery.
- No surgery for now: Avoids surgical risks, but pain and activity limits may continue or progress.

When to call your healthcare team

For routine questions about dressings, exercises, medication refills, or planned follow-up, contact the team during normal office hours.

Seek prompt medical advice if you have increasing wound redness, drainage, opening of the incision, fever, pain that is not controlled as expected, or rapidly increasing swelling. New calf pain or one-sided leg swelling also needs urgent assessment.

Call emergency services for:

Do not drive yourself for emergency care.

- Sudden shortness of breath
- Chest pain, coughing blood, or fainting
- A foot that suddenly becomes cold, pale, very numb, or difficult to move

Common questions

Will I be asleep?

You may be fully asleep under general anaesthesia. With spinal anaesthesia, your lower body is numb, and sedation can make you relaxed or sleepy. You can discuss your preference and medical needs with the anaesthesia team.

Can I drive home?

No. Arrange for someone to take you home. You should not drive again until you can control the car safely, perform an emergency stop, and are no longer taking medicines that affect alertness.

How painful is it?

Pain is expected after the operation, especially at first. Medicines, ice, elevation, and gradual movement help control it. Tell the team if pain remains severe or suddenly worsens.

When will I know if it worked?

You may notice some relief within weeks, but swelling and muscle weakness can hide the full benefit at first. Recovery is usually assessed over several months.

How long will the implant last?

There is no guaranteed lifespan. Implant wear, activity, body weight, surgical factors, and arthritis in the remaining knee can all affect how long it functions.

Sources

- American Academy of Orthopaedic Surgeons. Unicompartmental Knee Replacement . OrthoInfo.
- American Association of Hip and Knee Surgeons. Partial Knee Replacement . Patient education resource.
- National Institute for Health and Care Excellence. Joint replacement (primary): hip, knee and shoulder . NICE guideline NG157.
- NHS. Knee replacement . Overview, preparation, recovery, and complications.
- National Joint Registry. 21st Annual Report 2024: Hip, knee, ankle, elbow and shoulder joint replacement . National Joint Registry for England, Wales, Northern Ireland, the Isle of Man and Guernsey.