PROCEDURE

Knee replacement surgery

Knee replacement surgery replaces damaged joint surfaces with metal and plastic parts to reduce pain and improve movement.

PURPOSE
Reduce pain and improve movement in a damaged knee

PROCEDURE TYPE
Therapeutic - surgical replacement of damaged joint surfaces

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 to three nights; no driving until cleared

MAIN RISKS
Infection, blood clots, stiffness, persistent pain

RESULTS
Implant position immediate; function improves over weeks to months

Overview

Knee replacement surgery, also called knee joint replacement, removes damaged surfaces from the knee and replaces them with artificial parts. These parts are usually made from metal and strong plastic.

A total knee replacement treats all main parts of the joint. A partial knee replacement treats only the damaged section. Partial replacement may be suitable when arthritis is limited to one area and the knee's ligaments remain stable.

The goal is to reduce pain and help you walk and manage daily activities more easily. The new knee may not feel exactly like a natural joint. Kneeling can remain uncomfortable, and high-impact activities may not be advised.

Why the procedure is performed

Knee replacement is mainly used for severe joint damage that causes ongoing pain, stiffness, or loss of function. Osteoarthritis, which is wear and damage within a joint, is the most common reason. Other reasons include rheumatoid arthritis and arthritis following an injury.

Surgery may be considered when symptoms affect sleep, walking, work, or basic daily activities and treatments such as exercise, weight management, pain medicine, injections, or walking aids have not helped enough.

The decision should be based on your symptoms, examination, X-rays, general health, and personal goals. An X-ray showing arthritis does not automatically mean that you need surgery.

Who should and should not have it

Knee replacement may be appropriate if you have substantial knee pain or disability, clear joint damage, and reasonable health for surgery. You also need to be able to take part in rehabilitation afterward.

Surgery may not be the right choice if your symptoms are manageable with less invasive care or if the expected improvement does not outweigh the risks.

It is usually delayed when there is:

Smoking, obesity, heart or lung disease, poor circulation, and some immune conditions can increase the risk of complications. These factors do not always prevent surgery, but your team may recommend improving them first.

- An active infection, including an infected wound near the knee
- An uncontrolled medical problem that makes surgery or anaesthesia unsafe
- Poorly controlled blood sugar or another issue that needs treatment first
- A new skin ulcer, cut, or rash near the planned incision
- No safe recovery plan or inability to take part in rehabilitation

How to prepare

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

Tell the surgical team about all medicines, vitamins, supplements, allergies, and previous

reactions to anaesthesia. Blood thinners like warfarin or apixaban , diabetes medicines, and some other drugs may need a special plan. Do not stop a prescribed medicine unless the treating team tells you to.

You may have blood tests, an electrocardiogram to check your heart rhythm, and imaging of the knee. The team may also check for infection and review your general health.

Before admission:

You may be asked to wash with a special antiseptic product. Do not shave the operation area unless instructed, because small cuts can increase infection risk.

- Follow the specific instructions about when to stop eating and drinking
- Report fever, illness, dental infection, or damaged skin near the knee
- Arrange transport home and someone to help during early recovery
- Prepare a clear walking route and place essential items within easy reach
- Bring any walking aid requested by the hospital

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 can help you relax if you remain awake. A nerve block may also be used to control pain.

The surgeon makes an incision over the knee and moves the kneecap aside. Damaged bone and cartilage are removed from the ends of the thighbone and shinbone. Metal components cover these prepared surfaces, and a plastic spacer forms a smooth gliding surface between them.

The underside of the kneecap may also be resurfaced. The components may be secured with bone cement or designed so bone grows onto them.

For a partial replacement, only the affected section is replaced. Computer navigation or robotic assistance may help the surgeon plan bone cuts and component position, but the surgeon remains in control.

The wound is closed with stitches, staples, or skin adhesive and covered with a dressing.

Recovery and what to expect afterward

Pain: Pain and swelling are expected at first. Your care plan may combine several types of pain

relief. Cold packs and raising the leg may help with swelling. Tell the team if pain is not controlled or suddenly becomes worse.

Eating: You can usually drink and then eat when you are awake and not feeling sick. Constipation can occur because of pain medicine and reduced activity, so fluids, fibre, and any prescribed bowel medicine may help.

Activity: Staff usually help you stand and begin walking soon after surgery. You may initially use a frame, crutches, or a cane. Exercises are important for movement, strength, balance, and preventing stiffness. Follow the physiotherapy plan rather than forcing the knee through severe pain.

Driving: You cannot drive yourself home. Return to driving only when your surgeon has cleared you, you are no longer taking medicines that impair alertness, and you can safely control the vehicle and perform an emergency stop. Timing is affected by which knee was replaced and whether the car is manual or automatic.

Work: A desk-based return may be possible sooner than work involving lifting, climbing, or prolonged standing. Discuss your duties with the surgical team. Recovery continues for several months, even after you can manage basic activities independently.

Risks and possible complications

Most people recover without a major complication, but knee replacement has important risks. These include:

Your team may use early walking, compression devices, and blood-thinning medicine to reduce clot risk. The exact prevention plan is based on your health and bleeding risk.

Further treatment may involve manipulation of a stiff knee, antibiotics like amoxicillin or doxycycline , or another operation. Revision surgery means removing or replacing some or all of the artificial joint.

- Infection around the wound or artificial joint
- Blood clots in the leg, called deep vein thrombosis
- A clot travelling to the lungs, called pulmonary embolism
- Bleeding, wound problems, or a reaction to anaesthesia
- Knee stiffness, instability, or reduced movement
- Ongoing pain despite technically successful surgery
- Injury to nearby nerves or blood vessels

- Fracture around the implant
- Loosening, wear, or failure of the artificial joint over time

Results and follow up

An X-ray may be taken soon after surgery to check the implant's position. The more meaningful result-how much pain relief and function you gain-becomes clearer over weeks and months.

Routine appointments check the wound, knee movement, walking, pain control, and rehabilitation progress. Staples or stitches may need removal unless dissolving material was used.

Keep the wound clean and follow instructions about dressings and bathing. Continue prescribed exercises and clot-prevention treatment for the stated period. Later follow-up may include X-rays to look for implant wear or loosening, even if the knee feels comfortable.

Alternatives

Knee replacement is usually considered after less invasive options have been tried or discussed.

Keyhole surgery to wash out an arthritic knee generally does not replace damaged cartilage and is not an alternative to joint replacement for advanced arthritis.

- Exercise and physiotherapy: Improve strength and function without surgical risk, but cannot restore severely damaged cartilage
- Weight management: May reduce pressure on the knee, but does not reverse established joint damage
- Pain medicines or anti-inflammatory medicines: Can ease symptoms, but may cause side effects and do not repair the joint
- Walking aids or a knee brace: Improve stability and reduce load, but may be inconvenient and provide limited relief
- Steroid injection: May provide temporary relief, but does not rebuild the joint
- Osteotomy: Realigns bone to shift weight away from a damaged area; it preserves the joint but involves surgery and suits selected people

- Partial knee replacement: Preserves more bone and may allow faster recovery, but only works when damage is limited to one section
- Continuing without surgery: Avoids surgical risks, but pain and reduced mobility may continue or worsen

When to call your healthcare team

Contact your surgical team promptly for increasing wound redness, drainage, worsening swelling, fever, pain that is not improving, or new calf pain. Also call if the wound opens, you cannot manage prescribed exercises, or medicine side effects are causing problems.

Routine questions about dressings, exercise progression, sleep, swelling, or return to work can usually wait for normal office hours.

Seek emergency help for:

These symptoms need urgent assessment and should not wait for a routine appointment.

- Sudden shortness of breath, chest pain, or coughing blood
- Fainting, severe weakness, or new confusion
- A cold, pale, numb, or suddenly very painful foot
- Heavy bleeding that does not stop with firm pressure

Common questions

Will I be asleep?

You may have general anaesthesia and be fully unconscious. Another option is spinal anaesthesia with sedation, so your lower body is numb and you are relaxed or sleepy. Your anaesthesia team will discuss what is appropriate for you.

Can I drive home?

No. Arrange for someone to take you home. Do not drive again until you are medically cleared and can safely operate the pedals without restricted movement or impairing medicines.

How painful is knee replacement?

Pain is expected, especially during the first days and during exercises. It should gradually improve. Pain control often combines medicines, a nerve block, ice, positioning, and movement.

When will I know if it worked?

The implant position can be checked immediately, but pain relief and function improve gradually. It can take several months to judge the full result.

How long will the replacement last?

Artificial knees can wear or loosen over time. How long one lasts is influenced by implant type, activity, body weight, bone quality, infection, and other individual factors.

Can I kneel afterward?

Some people can kneel once the wound has healed, but it may feel uncomfortable or numb. Ask your physiotherapist how to practise safely.

Sources

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