



Unicompartmental Knee Replacement

The goal of knee replacement surgery is to decrease pain and restore function. Although total knee replacement (also called "arthroplasty") is an excellent option for patients with osteoarthritis of the knee, other surgical options exist. Patients with osteoarthritis that is limited to just one part of the knee may be candidates for unicompartmental knee replacement (also called a "partial" knee replacement).

Description

Unicompartmental knee replacement is an option for a small percentage of patients with osteoarthritis of the knee. Your doctor may recommend partial knee replacement if your arthritis is confined to a single part (compartment) of your knee.

Your knee is divided into three major compartments: The medial compartment (the inside part of the knee), the lateral compartment (the outside part), and the patellofemoral compartment (the front of the knee between the kneecap and thighbone).

In a unicompartmental knee replacement, only the damaged compartment is replaced with metal and plastic. The healthy cartilage and bone in the rest of the knee is left alone.

Advantages of Partial Knee Replacement

Multiple studies have shown that modern unicompartmental knee replacement performs very well in the vast majority of patients who are appropriate candidates.

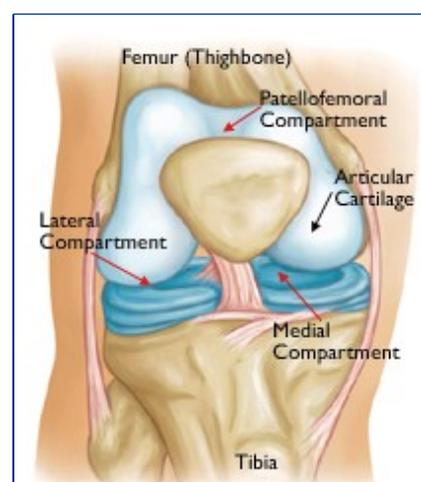
The advantages of partial knee replacement over total knee replacement include:

- Quicker recovery
- Less pain after surgery
- Less blood loss

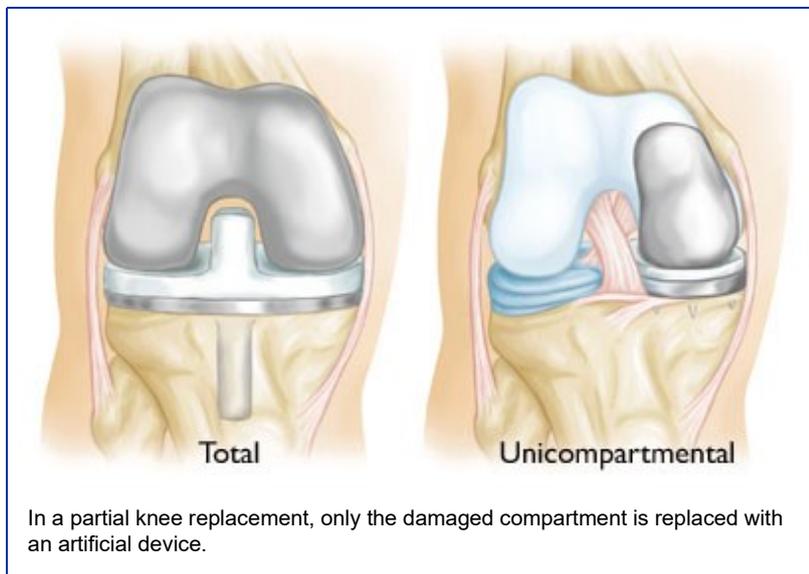
Also, because the bone, cartilage, and ligaments in the healthy parts of the knee are kept, most patients report that a unicompartmental knee replacement feels more "natural" than a total knee replacement. A unicompartmental knee may also bend better.

Disadvantages of Partial Knee Replacement

The disadvantages of partial knee replacement compared with total knee replacement include slightly less predictable pain relief, and the potential need for more surgery. For example, a total knee replacement may be necessary in the future if arthritis develops in the parts of the knee that have not been replaced.



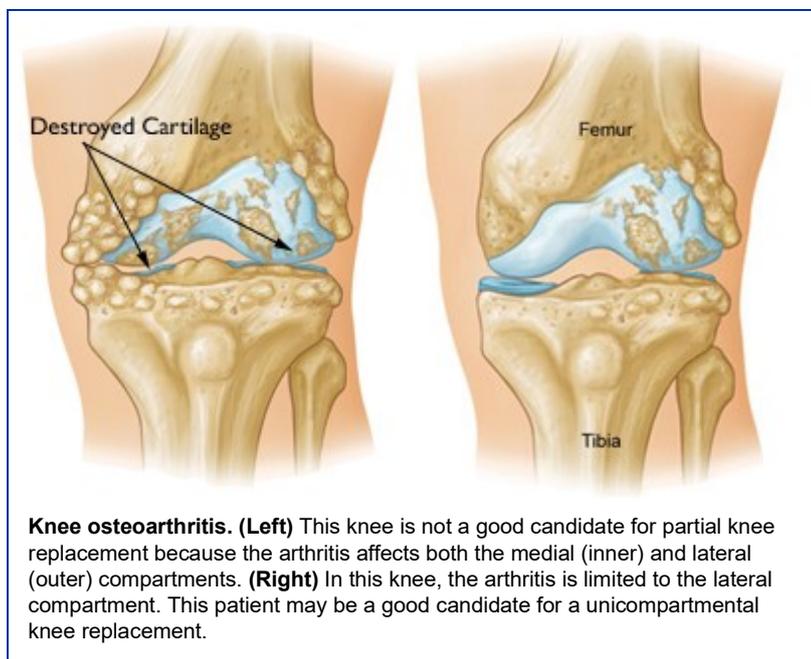
A normal knee joint: Some structures have been removed to better show the smooth healthy cartilage lining the joint. The medial, lateral, and patellofemoral compartments are shown with red arrows.



Candidates for Surgery

Your doctor may recommend surgery if you have more advanced osteoarthritis and have exhausted the nonsurgical treatment options. Surgery should only be considered if your knee is significantly affecting the quality of your life and interfering with your normal activities.

In order to be a candidate for this procedure, your arthritis must be limited to one compartment of your knee. Patients with inflammatory arthritis, significant knee stiffness, or ligament damage may not be ideal candidates. Your surgeon will help you determine if this procedure is suited for you. With proper patient selection, modern unicompartmental knee replacements have demonstrated excellent medium- and long-term results in both younger and older patients.



Orthopaedic Evaluation

To determine whether you may benefit from a partial knee replacement, your doctor may refer you to an orthopaedic surgeon for a thorough evaluation.

Medical History

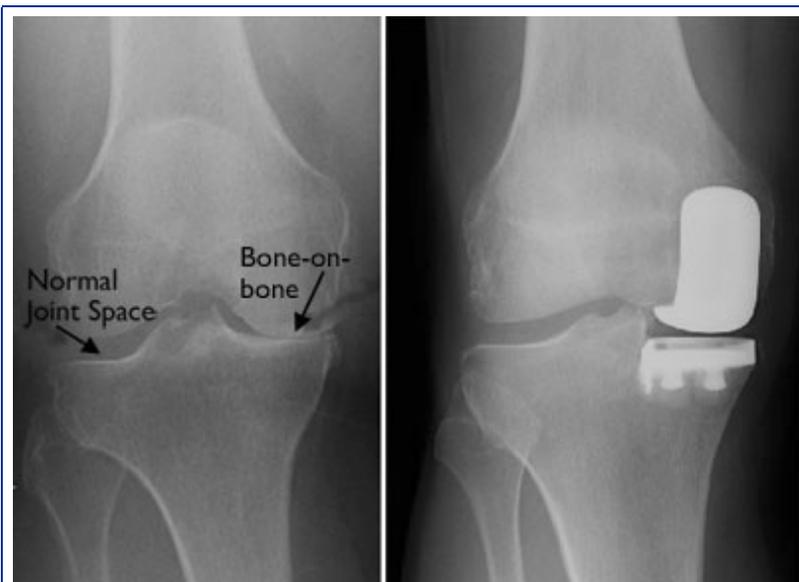
Your doctor will ask you several questions about your knee pain. He or she will be specifically concerned with the location of your pain. If your pain is located almost entirely on either the inside portion or outside portion of your knee, then you may be a candidate for a partial knee replacement. If you have pain throughout your entire knee or pain in the front of your knee (under your kneecap) you may be better qualified for a total knee replacement.

Physical Examination

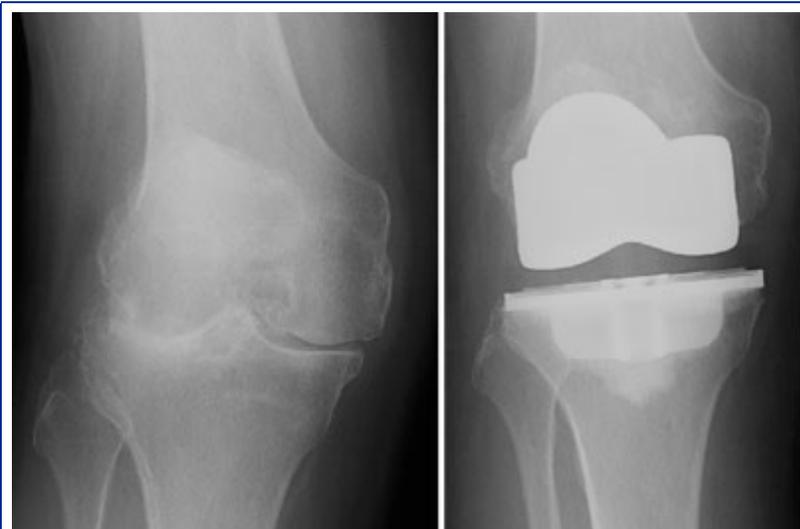
Your doctor will closely examine your knee. He or she will try to determine the location of your pain. Your doctor will also test your knee for range of motion and ligament quality. If your knee is too stiff, or if the ligaments in your knee feel weak or torn, then your doctor will probably not recommend unicompartmental knee replacement (although you still may be a great candidate for total knee replacement).

Imaging Tests

Your doctor will order several x-rays of your knee to see the pattern of arthritis. Some surgeons may also order a magnetic resonance imaging (MRI) scan to better evaluate the cartilage.



Good candidate for partial knee replacement. (Left) In this x-ray, the lateral compartment has a normal joint space, and the medial compartment has severe arthritis with "bone-on-bone" degeneration. **(Right)** The same knee after partial knee replacement.



Not a candidate for partial knee replacement. (Left) This x-ray shows severe arthritis in both the medial and lateral compartments. This patient is a good candidate for total knee replacement, as shown in the x-ray on the **right**.

Before Surgery

You will likely be admitted to the hospital on the day of surgery.

Before your procedure, a doctor from the anesthesia department will evaluate you. He or she will review your medical history and discuss anesthesia choices with you. You should also have discussed anesthesia choices with your surgeon during your preoperative clinic visits. Anesthesia can be either general (you are put to sleep) or spinal (you are awake but your body is numb from the waist down).

Your surgeon will also see you before surgery and sign your knee to verify the surgical site.

Surgical Procedure

A partial knee replacement operation typically lasts between 1 and 2 hours.

Your surgeon will make an incision at the front of your knee. He or she will then explore the three compartments of your knee to verify that the cartilage damage is, in fact, limited to one compartment and that your ligaments are intact. If your surgeon feels that your knee is unsuitable for a partial knee replacement, he or she will instead perform a total knee replacement. He or she will discuss this contingency plan with you before your operation to make sure that you agree with this strategy.

If your knee is suitable for a partial knee replacement, your surgeon will use special saws to remove the cartilage from the damaged compartment of your knee and will cap the ends of the femur and tibia with metal coverings. The metal components are generally held to the bone with cement. A plastic insert is placed between the two metal components to allow for a smooth gliding surface.

After the surgery you will be taken to the recovery room, where you will be closely monitored by nurses as you recover from the anesthesia. You will then be taken to your hospital room.

Complications

As with any surgical procedure, there are risks involved with partial knee replacement. Your surgeon will discuss each of the risks with you and will take specific measures to help avoid potential complications.

Although rare, the most common risks include:

- Blood clots. Blood clots in the leg veins are the most common complication of knee replacement surgery. Blood clots can form in the deep veins of the legs or pelvis after surgery. Blood thinners such as warfarin (Coumadin), low-molecular-weight heparin, aspirin, or other drugs can help prevent this problem.
- Infection. You will be given antibiotics before the start of your surgery and these will be continued for about 24 hours afterward to prevent infection.
- Injury to nerves or vessels. Although it rarely happens, nerves or blood vessels may be injured or stretched during the procedure.
- Continued pain.
- Risks of anesthesia.

Recovery

Because a partial knee replacement is done through a smaller, less invasive incision, hospitalization is shorter, and rehabilitation and return to normal activities is faster.

Patients usually experience less postoperative pain, less swelling, and have easier rehabilitation than patients undergoing total knee replacement. In most cases, patients go home 1 to 3 days after the operation.

You will begin putting weight on your knee immediately after surgery. You may need a walker, cane, or crutches for the first several days or weeks until you become comfortable enough to walk without assistance.

A physical therapist will give you exercises to help maintain your range of motion and restore your strength. You will continue to see your orthopaedic surgeon for follow-up visits in his or her clinic at regular intervals.

You will most likely resume your regular activities of daily living by 6 weeks after surgery.

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