



Specialist Centre for Orthopaedic Surgery

UNICOMPARTMENTAL KNEE ARTHROPLASTY (Partial knee replacement)

The condition

The knee is a hinge joint, formed by the end of the thighbone (femur) and the end of the shin bone (tibia). The bones are coated in cartilage, which acts as a cushion between the two bones and allows the knee to move. In front of these bones is the kneecap (patella) which glides in a groove on the end of the thigh bone.

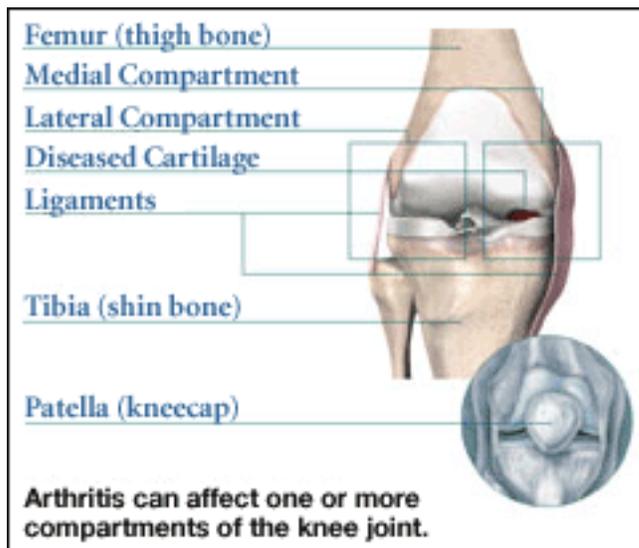


A knee joint

Partial knee resurfacing (PKR) is a surgical procedure for helping to relieve arthritis in one compartment of the knee. With PKR, only the damaged surface of the knee joint is replaced, helping to minimize trauma to healthy bone and tissue.

The Operation

The surgeon removes only damaged bone in the affected knee and fits the implant to that bone. Because the PKR artificial joints are smaller than total knee implants, the surgical incision may be smaller as well. Since most of the knee joint is unaffected and the basic knee structure remains intact, post-operative pain may be reduced and the recovery period may be shorter than total knee replacement.²



Benefits of having the surgery

The pain should gradually improve making it possible to take up activities, which could not have been done prior to surgery because of pain and stiffness in the knee joint.

Risks of not having the surgery

The pain may become so severe that independence with every day activities such as showering, walking, shopping, gardening, climbing stairs, getting out of a chair, may be lost or difficult to do alone.

Partial knee replacement, also called a unicompartmental knee arthroplasty,' is a surgery that may be considered for treatment of osteoarthritis of the knee joint. Traditionally, patients have undergone

[total knee replacement](#) for [severe arthritis](#) of the knee joint. In a total knee replacement, all cartilage is removed from the knee joint, and a metal and plastic implant is substituted.

The partial knee replacement surgical procedure has generated significant interest because it entails a smaller incision and faster recovery than traditional total joint replacement surgery. Partial knee replacement, also called unicompartmental knee replacement' and 'minimally invasive knee surgery,' removes only the most damaged areas of cartilage, and replaces these surfaces.

Who is a good candidate for partial knee replacement? The minimally invasive partial knee replacement is indicated in patients who have severe arthritis of the knee that have failed conservative treatments may consider this procedure. Conservative measures may include, but are not limited to, [medications](#) (such as Advil, Naprosyn, Celebrex, and Vioxx), [cortisone injections](#), strengthening exercises, and weight loss. If these treatments are not adequate, and you as a patient are not satisfied, then surgical procedures may be considered.

The partial knee surgery may be possible if the arthritis in the knee is confined to a limited area. If the arthritis is widespread, then the partial knee replacement is *NOT* appropriate, and should not be considered. In addition, the partial knee surgery is recommended in patients who are:

- Older than 55 years

- Not obese

- Relatively sedentary

- Have intact ligaments (specifically the ACL)

If these qualifications are not met, then the minimally invasive partial knee surgery may not be as successful. Unfortunately, many patients are therefore ineligible for this minimally invasive procedure.

What is the problem with most patients for the partial knee replacement? Most patients who seek surgical management have arthritis that is too advanced for the minimally invasive partial knee replacement procedure. Because surgical treatment is considered a 'last-resort' by most patients, by the time surgery is necessary, their

arthritis is too advanced to consider this minimally invasive procedure. If partial knee replacement is done in a patient who is a poor candidate, failure rates can be high, and conversion to a [traditional total knee surgery](#) may be more difficult.

What is the benefit of the partial knee replacement?

Smaller Incision A traditional knee replacement surgery involves an incision about 8 inches over the front of the knee. There is more significant dissection necessary to complete the procedure compared to the unicompartmental knee surgery. In the minimally invasive partial knee replacement, the incision is about 3 inches, and the amount of dissection and bone removal is much smaller.

Less Blood Loss Because of the extent of dissection and bone removal necessary for a total knee replacement, the need for a blood transfusion is relatively common. With the unicompartmental knee procedure, a blood transfusion is infrequently needed, and patients do not need to consider giving blood preoperatively.

Shorter Recovery Both the time in hospital and the time to functional recovery are less with the partial knee replacement. Patients are known to have been discharged on the day of the procedure, although most often patients are discharged on the first or second post-operative day. With traditional total knee replacement, patients seldom leave before three or four days in the hospital, and often require a stay in an in-patient rehabilitation unit.

What is known about long-term results with partial knee replacement?

The long-term results are very good when the minimally invasive partial knee replacement is done in the right patients. Older studies showed very poor results of the partial knee replacement, but these results are thought to be due to poor patient selection. If the minimally invasive procedure is done on a patient with too widespread arthritis, the results are very likely

to be less than satisfactory. If your doctor does not recommend a partial knee replacement, you may be in this situation. If this is the case, further conservative treatment (e.g. [injections](#), [physical therapy](#), [medications](#), etc.), or [total knee surgery](#) are the best options.

Will I need surgery again after having a partial knee replacement? Hopefully not. When patients with a partial knee replacement are properly selected, the minimally invasive procedure is quite successful. That said, some patients continue to develop arthritis in other areas of the knee. Also, some patients wear out the unicompartmental knee implant, or it may come loose within the knee. All of these situations would require additional surgery, and possibly the conversion to a [total knee surgery](#). Conversion from a partial knee replacement to a [total knee](#) can be more difficult because of the prior surgery, but it is not uncommon and results of conversion are good.

Other potential complications that should be [discussed with your doctor](#) prior to a partial knee replacement include infection, blood clots, and problems with anesthesia. It is important to have a [long discussion with your doctor](#) about the risks of this minimally invasive surgery, or any other procedure, prior to your operation.