

How Mako robotic-arm–assisted surgery works

Your personalized plan

It all begins with a CT scan of your joint that is used to generate a 3-D virtual model of your unique anatomy. This virtual model is loaded into the Mako™ system software and is used to create your personalized preoperative plan.

In the operating room

Your surgeon will use Mako to assist in performing your surgery based on your personalized preoperative plan. The Mako system also allows your surgeon to adjust your plan during surgery, as needed. When the surgeon prepares the bone for the implant, the Mako system guides him or her within the predefined area and helps prevent the surgeon from moving outside the planned boundaries. This helps provide more accurate placement and alignment of your implant.

After surgery

After surgery, your surgeon, nurses and physical therapists will set goals with you to get you back on the move. They will closely monitor your condition and progress. Your surgeon may review an X-ray of your new partial knee with you.

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Guide to robotic-arm–assisted partial knee replacement



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Causes of your knee pain



Your joints are involved in almost every activity you do. Movements such as walking, bending and turning require the use of your hip and knee joints. When the knees become diseased or injured, the resulting pain can severely limit your ability to move and work.

The knee is the largest joint in the body and is central to nearly every routine activity. The knee joint is formed by the ends of three bones:

- The lower end of the femur (thigh bone)
- The upper end of the tibia (shin bone)
- The patella (kneecap)

Thick, tough tissue bands called *ligaments* connect the bones and stabilize the joint.

One common cause of knee pain is osteoarthritis (OA). OA is sometimes called *degenerative arthritis* because it is a “wearing out” condition involving the breakdown of cartilage in the joints. When cartilage wears away, the bones rub against each other, causing pain and stiffness

Partial knee replacement surgery

Partial knee replacement (PKR) is a surgical procedure that helps relieve arthritis in one or two of the three compartments of the knee. By selectively targeting the part of your knee damaged by OA, your surgeon can replace the

diseased part of your knee while helping to spare the healthy bone and ligaments surrounding it.

With PKR, only the damaged area of the knee joint is replaced, which may help to minimize trauma to healthy bone and tissue.

Three types of PKR

Unicondylar knee replacement is a procedure that replaces one compartment of the knee.

Bicompartmental knee replacement is a procedure that replaces two compartments of the knee.

Patellofemoral knee replacement is a procedure that replaces the worn patella (the kneecap) and the trochlea (the groove at the end of your thigh bone).

What to expect in the weeks before surgery

Preparing for PKR begins weeks before the actual surgery. The checklist below outlines some tasks that your surgeon may ask you to complete in the weeks before your surgery date.

- Exercise under your doctor’s supervision
- Have a general physical examination
- Have a dental examination
- Review medications
- Stop smoking

- Lose weight
- Arrange a preoperative visit
- Get laboratory tests
- Complete forms
- Prepare meals
- Confer with a physical therapist
- Plan for post-surgery rehabilitative care
- Fast the night before
- Bathe surgical area with antiseptic solution

Questions to ask your doctor at your next appointment

1. What are the benefits and potential risks involved with PKR?
2. How long does it typically take to recover from surgery?
3. Is osteoarthritis a factor in my knee pain?
4. Will reducing activity, taking pain or prescription medication, getting injections or doing physical therapy ease my pain?
5. Could PKR help provide me with relief from my knee pain?
6. Am I candidate for Mako robotic-arm–assisted surgery