

## 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

During surgery, your surgeon guides the robotic arm while preparing the hip socket and positioning the implant 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 the surgeon 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 total hip with you.

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## Patient guide to robotic-arm–assisted total hip replacement



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## Causes of your hip 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 your hip becomes diseased or injured, the resulting pain can severely limit your ability to move and work.

One common cause of hip pain is osteoarthritis (OA).

OA is sometimes called *degenerative arthritis* because it is a “wearing out” condition that involves the breakdown of cartilage and bones. With osteoarthritis, the cushioning cartilage at the end of the femur may have worn down, making walking painful as bone rubs against bone.

## Total hip replacement surgery

Total hip replacement surgery (THR) involves removing arthritic bone and damaged cartilage, and replacing them with hip implants that are designed to replicate the hip joint. THR is designed for patients who suffer from non-inflammatory or inflammatory degenerative joint disease of the hip.

During surgery, the femur (head of the thigh bone) is replaced with a metal stem and the acetabulum (hip socket) is fitted with a metal cup. The artificial ball is placed on a metal stem, and the artificial socket is lined with polyethylene (a durable plastic).

Mako robotic-arm technology provides your surgeon with a patient-specific 3-D model to pre-plan your hip replacement. During surgery, your surgeon guides the robotic arm based on your specific plan. This helps him or her to focus on removing diseased bone and preserving healthy bone. It also helps to position the total hip implant based on your anatomy.

## What to expect in the weeks before surgery

Preparing for THR 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 THR?
2. How long does it typically take to recover from surgery?
3. Is osteoarthritis a factor in my hip pain?
4. Will reducing activity, taking pain or prescription medication, getting injections or doing physical therapy ease my pain?
5. Could THR help provide me with relief from my hip pain?
6. Am I a candidate for Mako robotic-arm–assisted surgery?

