

Scan. Plan. **Mako** **Can.**

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**Mako Total Hip
Replacement**



Time to take on your hip pain

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Important information

Hip replacements: Hip joint replacement is intended for use in individuals with joint disease resulting from degenerative and rheumatoid arthritis, avascular necrosis, fracture of the neck of the femur or functional deformity of the hip.

Joint replacement surgery is not appropriate for patients with certain types of infections, any mental or neuromuscular disorder which would create an unacceptable risk of prosthesis instability, prosthesis fixation failure or complications in postoperative care, compromised bone stock, skeletal immaturity, severe instability of the joint, or excessive body weight.

Like any surgery, joint replacement surgery has serious risks which include, but are not limited to, pain, infection, bone fracture, change in the treated leg length (hip), joint stiffness, hip joint fusion, amputation, peripheral neuropathies (nerve damage), circulatory compromise (including deep vein thrombosis (blood clots in the legs)), genitourinary disorders (including kidney failure), gastrointestinal disorders (including paralytic ileus (loss of intestinal digestive movement)), vascular disorders (including thrombus (blood clots), blood loss, or changes in blood pressure or heart rhythm), bronchopulmonary disorders (including emboli, stroke or pneumonia), heart attack, and death.

Implant related risks which may lead to a revision of the implant include dislocation, loosening, fracture, nerve damage, heterotopic bone formation (abnormal bone growth in tissue), wear of the implant, metal and/or foreign body sensitivity, soft tissue imbalance, osteolysis (localized progressive bone loss), audible sounds during motion, and reaction to particle debris. Hip implants may not provide the same feel or performance characteristics experienced with a normal healthy joint.

The information presented is for educational purposes only. Speak to your doctor to decide if joint replacement surgery is appropriate for you. Individual results vary and not all patients will return to the same activity level. The lifetime of any joint replacement is limited and depends on several factors like patient weight and activity level. Your doctor will counsel you about strategies to potentially prolong the lifetime of the device, including avoiding high- impact activities, such as running, as well as maintaining a healthy weight. It is important to closely follow your doctor's instructions regarding post-surgery activity, treatment and follow-up care. Ask your doctor if Robotic-Arm Assisted Surgery is right for you.

If you're one of the **millions of Americans** suffering from pain caused by arthritis or an injury to the hip, and you haven't experienced adequate relief with conservative treatment options, **Mako SmartRobotics™ might be right for you.**

Over **32.5 million Americans** suffer from **osteoarthritis (OA)**.¹

Mako SmartRobotics™ Technology

Total hip replacement is a surgical procedure where a diseased or damaged joint is replaced with an artificial joint called an implant. Made of metal alloys and high-grade plastics, the implant is designed to move like a healthy human joint.

Mako SmartRobotics™ transforms how joint replacement procedures are done by integrating 3D modeling and robotic arm technology into the process. It's an innovative solution that has been helping joint pain sufferers for more than a decade.

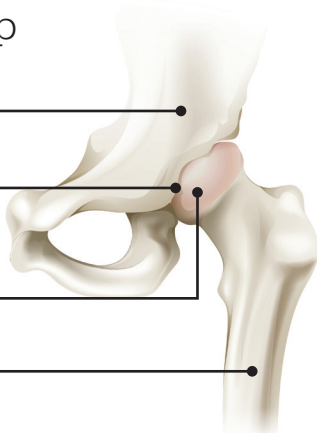
A healthy hip

Pelvis

Acetabulum (socket)

Femoral head (ball)
covered with
articular cartilage

Femur (thigh bone)



Mako Can.

Scan.

It starts with a CT scan of your hip joint, which is loaded into Mako software and used to develop a 3D virtual model of your unique anatomy. This model helps your doctor see things they can't typically see with an X-ray alone.

Plan.

The virtual model created from your CT scan helps your surgeon create a patient-specific surgical plan. Using Mako software, your surgeon can determine the desired size, placement and positioning of your implant.

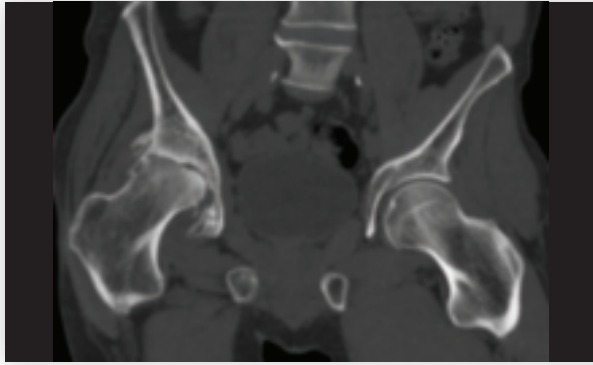
Mako Can.

In the operating room, your surgeon guides Mako's robotic arm to remove arthritic bone and cartilage from the hip. A virtual boundary provides tactile resistance to help the surgeon stay within the boundaries defined in your surgical plan.

As the surgeon prepares to place the implant into its final position, the robotic-arm guides the implant at the desired angle defined in the surgical plan. This helps ensure the placement and alignment of the implant are performed according to plan.⁵

With the removal of the diseased bone, your implant is placed into the hip joint.

Scan. Plan.



The Mako SmartRobotics™ difference

Mako can help surgeons plan for better outcomes like less pain² and shorter recovery times compared to manual surgery.²

In clinical studies, Mako SmartRobotics™ for Total Hip demonstrated:

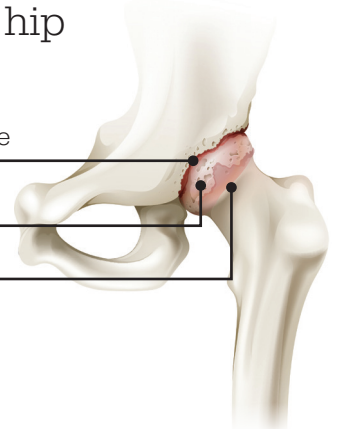
- More accurate placement and alignment of hip implants based on your surgical plan compared to manual surgery³
- Less likelihood of hip dislocation compared to manual surgery^{4,5}
- Reduced blood loss compared to manual surgery⁶
- Replication of the feeling of a natural hip⁷
- Preservation of healthy bone compared to manual surgery^{8,9}

An **arthritic** hip

Narrowed joint space

Destroyed cartilage

Bone spurs



Is Mako SmartRobotics™ an option for me?

Mako Total Hip is for:

- People with severe hip pain or stiffness resulting from noninflammatory degenerative joint disease (including osteoarthritis, traumatic arthritis and avascular necrosis), rheumatoid arthritis or post-traumatic arthritis
- Those who haven't experienced adequate relief with conservative treatment options, like bracing, medication or joint fluid supplements

If this sounds like you, ask your doctor about Mako SmartRobotics™.



Frequently asked questions

Medical professionals contributed to these answers, but these FAQs are not a substitute for medical advice from your own doctor. Make sure to discuss all questions and concerns with your doctor to see if Mako SmartRobotics™ is right for you.

Q: How long has the MakoSmartRobotics™ procedure been available?

A: The first Mako procedure was performed in 2006. There have been, more than 1,000,000 Mako Total Knee, Mako Partial Knee and **Mako Total Hip** procedures completed.

Q: How long will I be in the hospital?

A: Most people spend one to four days in the hospital.¹¹ Depending on your particular surgery and recovery, your team will help decide what's best for you.

Q: When can I get back to normal activities?

A: Most people who undergo hip replacement surgery and participate in a physical therapy regimen prescribed by their doctor return to their light day-to-day activities within three to six weeks of surgery,¹¹ but everyone is different. Your doctor will help determine a plan best suited for your recovery and your lifestyle.

Q: What activities will I be able to do after surgery?

A: Realistic physical activities following hip replacement surgery include walking, swimming, golfing, driving, light hiking, biking, dancing, and other low-impact sports.¹⁰

