your hip pain.

The Mako SmartRobotics™ difference

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

- More accurate placement and alignment of hip implants based on the surgical plan[2]
- Less likelihood of hip dislocation[3,4]
- Reduced blood loss[5]
- Replication of the feeling of a natural hip[6]
- Preservation of healthy bone[7,8]

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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.

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Mako SmartRobotics™ total hip replacement

A patient's guide

Time to take on

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.

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.

Over 30 million
Americans suffer from osteoarthritis[1]

Is Mako SmartRobotics™ an option?

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™.

"I am so thankful to have the opportunity to spend time with my granddaughter now. Before surgery, this wouldn't have been possible"

Carolyn Fahey, Mako Total Hip recipient

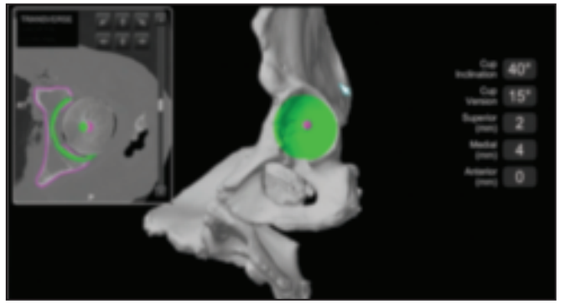
All surgery carries risk. See your orthopaedic surgeon to discuss your potential benefits and risks. Not all patients will have the same post-operative recovery and activity level. Individual results vary.

How does Mako SmartRobotics™ Technology work?

1. Personalized surgical plan

Prior to surgery, a CT scan of your hip joint is taken to generate a 3D virtual model of your unique anatomy. The 3D model allows your surgeon to know more about your joint and see things they can't typically see with an X-ray alone. This additional information helps your doctor determine the desired size, placement and positioning of your implant.

2. Arthritic bone removal



In the operating room, your surgeon guides Mako's robotic arm to remove the arthritic bone and cartilage from the hip. Mako's AccuStop™ haptic technology provides tactile resistance that guides your surgeon to precisely cut what's defined in your surgical plan to help protect your healthy bone.[7,9]

3. Range-of-motion assessment and implant placement

As your 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 placement and alignment of the implant are performed according to your surgeon's plan.[8]

Throughout your procedure, Mako SmartRobotics™ provides real-time data to your surgeon. This allows them to continuously assess the movement and tension of your new joint and adjust the surgical plan if desired.

Visit **makosmartrobotics.com** to download a discussion guide to use with your doctor.

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 Mako SmartRobotics™ procedure been available?

A: The first Mako procedure was performed in 2006. Through 2019, more than 300,000 Mako Total Knee, Mako Partial Knee and Mako Total Hip procedures have been performed.

Q: How long will I be in the hospital?

A: Most people spend one to four days in the hospital.[10] 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.[11]