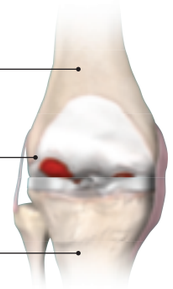
your knee pain

The Mako SmartRobotics™ difference

In clinical studies, Mako SmartRobotics™ for total knee replacement:

- Enabled surgeons to execute their surgical plans more accurately[2]
- Protected soft tissue and ligaments from damage[3]
- Protected healthy bone[3,4]
- Resulted in lower pain scores reported by Mako patients than those who received a conventional joint replacement in patients surveyed two weeks,[10] six weeks[10] and six months after surgery[5]
- Resulted in better patient satisfaction scores reported by Mako patients than those who received a conventional joint replacement in patients surveyed six months after surgery[5]
- Resulted in reduced bone and soft tissue trauma observed in patients who received a robotic-assisted total knee replacement,[3] which may have contributed to less pain and less opioid use by those patients[10,12]

An **arthritic** knee



Femur (thighbone)

Diseased cartilage

Tibia (shinbone)

More than 790,000 knee replacements are performed in the United States each year[6]

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Important information

Knee replacement: Knee replacement is intended for use in individuals with joint disease resulting from degenerative, rheumatoid and post-traumatic arthritis, and for moderate deformity of the knee. Knee 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.

As with any surgery, knee replacement surgery has serious risks which include, but are not limited to, pain, infection, bone fracture, peripheral neuropathies (nerve damage), circulatory compromise (including deep vein thrombosis (blood clots in the legs)), genito-urinary 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 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), and reaction to particle debris. Knee 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 varies with each individual. Your doctor will counsel you about how to best maintain your activities in order to potentially prolong the lifetime of the device. Such strategies include not engaging in 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 a knee replacement is right for you.

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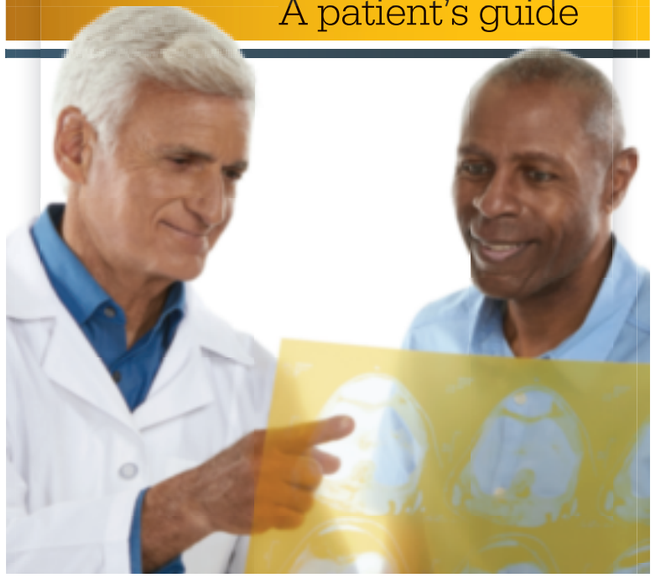
Mako® SmartRobotics™ total knee replacement

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 knee, and you haven't experienced adequate relief with conservative treatment options, Mako SmartRobotics™ might be right for you.

Mako Robotic-Arm Assisted Technology

Total knee 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 mimic a normal, healthy knee.

Mako SmartRobotics™ transforms how total knee replacement procedures are done by integrating 3D virtual modeling and AccuStop™ technology into the process.

A **healthy** knee

Femur (thighbone)

Healthy cartilage

Tibia (shinbone)

Over 30 million Americans suffer from osteoarthritis[1]

Is Mako SmartRobotics™ an option for me?

Mako Total Knee is for:

- People with severe knee 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

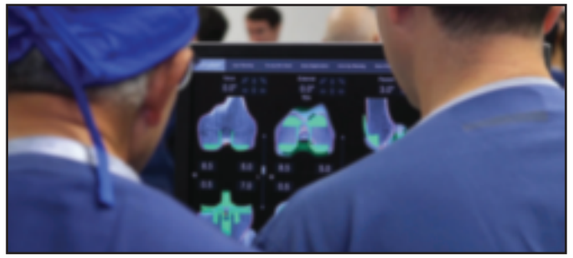
If this sounds like you, ask your doctor about Mako SmartRobotics™.

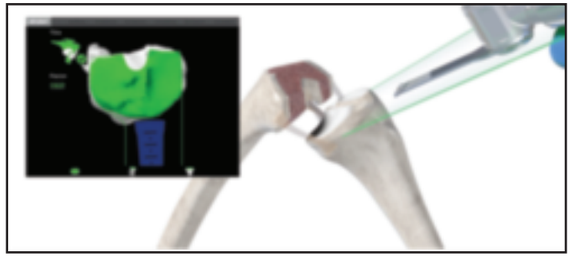
The Mako SmartRobotics™ difference

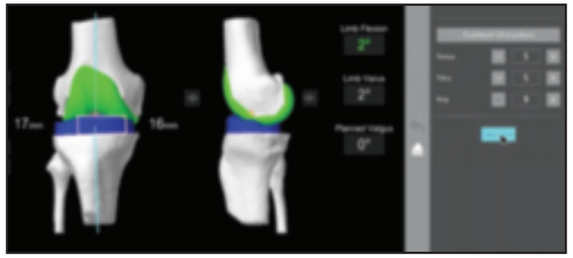
The difference is in the technology—AccuStop™ technology.

With Mako SmartRobotics™, your surgeon can create a personalized surgical plan, and with the help of AccuStop™ technology, they are guided to accurately cut what's planned for you.[2] For some patients, that means preserving soft tissue; for others, it means protecting healthy bone.[3,4]

How does Mako SmartRobotics™ and AccuStop™ technology work?







Personalized surgical plan

Before your surgery, your doctor will take a CT scan of your knee joint, which develops 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. The information provided by Mako helps your surgeon determine the desired size, placement and positioning of your implant. Throughout the procedure, Mako SmartRobotics™ provides real-time data to the surgeon so they can continuously assess the movement and tension of your new joint and adjust your surgical plan if needed.

Arthritic bone removal

In the operating room, your surgeon guides Mako's robotic arm to remove arthritic bone and cartilage from the knee. AccuStop™ technology provides tactile resistance to help your surgeon stay within the boundaries defined in your surgical plan and precisely cut what's planned for you,[2] which could protect your healthy bone.[3,4]

Implant placement and range-of-motion assessment

With the removal of the diseased bone, your implant is placed into the knee joint. Once your implant is successfully placed, it's off to the recovery room to begin the journey towards strengthening your new joint.

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

Frequently asked questions

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 Mako Technology been available?

A: The first Mako procedure was performed in 2006. Since that time, more than 400,000 Mako Total Knee, Mako Partial Knee and Mako Total Hip procedures have been performed.

Q: How long will I be in the hospital?

A: All patients are different. Clinical studies have shown that patients who had a Mako Total Knee procedure spent significantly less time in the hospital compared to those who had a conventional knee replacement.[10]

Q: When can I get back to normal activities?

A: Most people who undergo knee replacement surgery and participate in a physical therapy regimen prescribed by their doctor return to their day-to-day activities, like driving, in four to six weeks,[7] 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: In a few weeks, your doctor may allow you to pick back up with lower-impact activities like hiking, walking, cycling and golfing.[8] Speak to your doctor about which activities are appropriate for you.

If you lose one pound, it takes four pounds of pressure off your knees.[9]