

What is OA?

OA is a form of arthritis and a degenerative joint disease characterized by the breakdown and eventual loss of joint cartilage. Cartilage is a protein substance that serves as a cushion between the bones of a joint. With OA, the top layer of cartilage breaks down and wears away, allowing bones under the cartilage to rub together.

What causes OA of the knee?

Although the root cause of OA is unknown, the risk of developing symptomatic OA is influenced by multiple factors such as age, gender and inherited traits that can affect the shape and stability of your joints. Other factors can include:

- A previous knee injury
- Repetitive strain on the knee
- Improper joint alignment
- Being overweight
- Exercise or sports-generated stress placed on the knee joint

What are the symptoms of OA of the knee?

Symptoms of OA of the knee include:

- Pain while standing or walking short distances, climbing up or down stairs, or getting in and out of chairs
- Pain with activity
- Start up pain or stiffness when activities are initiated from a sitting position
- Joint stiffness after getting out of bed
- Swelling in one or more areas of the knee
- A grating sensation or crunching feeling in the knee during use

How is OA of the knee diagnosed?

Your physician will begin by reviewing your medical history and symptoms. He or she will observe the natural movement of your knee, evaluate your knee and ankle joint alignment, and check your reflexes, muscle strength, range of motion and ligament stability in the affected knee. Your physician may order x-rays to determine how much joint or bone damage has been done, how much cartilage has been lost and if there are bone spurs present. Additional medical imaging tests such as computed tomography (CT) or magnetic resonance imaging (MRI) may be ordered to determine exactly where the damage is and its extent. Your physician may also order blood tests to rule out other causes of symptoms, or order a joint aspiration which involves drawing fluid from the joint through a needle and examining the fluid under a microscope.

How is OA treated?

Whether your OA is mild or severe, your physician will most likely recommend certain lifestyle changes to reduce stress on your knee joints. Additional disease and pain management strategies

may include: physical therapy, steroid injections, over-the-counter pain medications such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs) or topical pain relieving creams.

Please speak with your physician if your symptoms aren't responding to non-surgical solutions, or your pain can no longer be controlled by medication. You could be a candidate for surgery.

The most common surgical knee intervention performed for OA is a total knee replacement. During this procedure, the natural joint is removed and replaced with an artificial implant. This treatment option is usually offered to patients with advanced osteoarthritis of the knee.

Total knee replacement is not always optimal for patients with early to mid-stage osteoarthritis in just one or two compartments of the knee. For patients with partial OA of the knee, MAKOpasty® Partial Knee Resurfacing may be the more appropriate solution.

What is MAKOpasty®?

MAKOpasty® Partial Knee Resurfacing is an innovative treatment option for adults living with early to mid-stage OA that has not progressed to all three compartments of the knee. It is powered by the RIO® Robotic Arm Interactive Orthopedic System, which allows for consistently reproducible precision in performing partial knee resurfacing.

During the procedure, the diseased portion of the knee is resurfaced, sparing the patient's healthy bone and surrounding tissue. An implant is then secured in the joint to allow the knee to move smoothly again. MAKOpasty® Partial Knee Resurfacing can:

- Facilitate ideal implant positioning to result in a more natural feeling knee following surgery
- Result in a more rapid recovery and shorter hospital stay than traditional knee replacement surgery
- Be performed on an outpatient basis
- Promote a rapid relief from pain and return to daily activities

As a knee arthroplasty procedure, MAKOpasty® is typically covered by most Medicare-approved and private health insurers.

How may MAKOpasty® benefit me?

The MAKOpasty® Partial Knee Resurfacing procedure is designed to relieve the pain caused by joint degeneration and potentially offers the following benefits:

- Improved surgical outcomes
- Less implant wear and loosening
- Joint resurfacing
- Bone sparing
- Smaller incision
- Less scarring
- Reduced blood loss

- Minimal hospitalization
- Rapid recovery

How does MAKOplasty[®] work?

The RIO[®] Robotic Arm Interactive Orthopedic System features three dimensional pre-surgical planning.

During surgery, the RIO[®] provides the surgeon with real-time visual, tactile and auditory feedback to facilitate optimal joint resurfacing and implant positioning. It is this optimal placement that can result in more natural knee motion following surgery.

Individual results may vary. There are risks associated with any knee surgical procedure, including MAKOplasty.[®] Your physician can explain these risks and help determine if MAKOplasty[®] is right for you.

Who would be a good candidate for the MAKOplasty[®] procedure?

Typically, MAKOplasty[®] patients share the following characteristics:

- Knee pain with activity, usually on the inner knee and/or under the knee cap
- Start up knee pain or stiffness when activities are initiated from a sitting position
- Failure to respond to non-surgical treatments or nonsteroidal anti-inflammatory medication

If I undergo MAKOplasty[®], what can I expect?

MAKOplasty[®] can be performed as either an inpatient procedure or on an outpatient basis depending on what your orthopedic surgeon determines is right for you. Hospital stays average anywhere from one to three days; ambulatory patients return home the same day.

In many cases, patients are permitted to walk soon after surgery, drive a car in the first few weeks, and return to normal daily activities shortly thereafter.

What is the lifespan of a MAKOplasty[®] implant?

All implants have a life expectancy that depends on several factors including the patient's weight, activity level, quality of bone stock and compliance with their physician's orders.

Proper implant alignment and precise positioning during surgery are also very important factors that can improve the life expectancy of an implant. Through the use of RIO[®], implants can be optimally aligned and positioned to ensure the longest benefit. RESTORIS[®] MCK implants enable the treatment of one or two compartments with OA disease. With single compartment disease, a second compartment may be treated in the future if OA spreads. In addition, because very little bone is actually removed during a MAKOplasty[®] procedure, the implants can be replaced with another procedure such as a total knee replacement, if necessary.