Are you part of the Boomer Effect? The aging population born between 1946 and 1964, with knees (and other joints) now more vulnerable to damage by osteoarthritis and rheumatoid arthritis after years of wear and tear, is a prime reason for a spike in total knee replacement surgeries.

By 2030, primary total knee replacement is projected to grow by up to 189 percent for a projected 1.28 million procedures, according to the American Academy of Orthopaedic Surgeons.

Hartford HealthCare’s response to the surge in demand for joint replacement surgery is the Connecticut Orthopaedic Institute at MidState Medical Center, a 14,500-square-foot orthopaedic specialty hospital that opened in 2017, including a medical staff with board-certified orthopaedic surgeons specializing in knee replacement.

What Is Osteoarthritis?

Osteoarthritis is a leading cause of most knee replacements. It affects more than 30 million people, making it the most common chronic joint condition in the United States. The pain and stiffness of osteoarthritis at a joint – the junction where two bones meet – are caused by the breakdown of protective tissue (cartilage) that leaves the bones in the knee, hip, wrist or shoulder rubbing together. Osteoarthritis is a degenerative condition, typically a byproduct of aging that makes it difficult to walk, climb stairs or rise from a chair.

Stages of Osteoarthritis of the Knee

- **Doubtful**
  - Minimum disruption.
  - There is already 10% cartilage loss.

- **Mild**
  - Joint-space narrowing.
  - The cartilage has begun breaking down. Occurrence of osteophytes.

- **Moderate**
  - Moderate joint-space reduction. Gaps in cartilage may expand until they reach the bone.

- **Severe**
  - Joint-space greatly reduced. 60% of the cartilage is already lost. Large osteophytes.

To request a call from one of our Connecticut Orthopaedic Institute clinical team members, visit ctorchoinstitute.org/midstateknee1 or call 833.203.7523 to find an orthopaedic specialist.
What Is A Total Knee Replacement?

When damage to cartilage on the knee joint surface is so extensive that medication and other medical treatment no longer help, it might be time to consider knee replacement surgery.

Here’s what happens during total knee replacement surgery:

1. To access the kneecap (patella), your surgeon makes an incision in the front of the knee. Whether you have traditional surgery or robotic surgery, you will likely leave the hospital the same day or the next day.

2. After turning the kneecap to view the surgical space, your surgeon removes damaged cartilage at the femur (thigh) and tibia (shin). Some bone just below the cartilage is also removed.

3. Metal implants (usually titanium) are placed on the femur and tibia, securing them to the bone.

4. A medical-grade polyethylene button is placed on the underside of the kneecap.

5. A medical-grade polyethylene spacer between the two metal components is the final piece that allows the artificial knee to replicate the movement of the original joint.

How Long Will My Implant Last?

In a recent study that tracked the long-term performance of common knee-replacement prosthetics, 96 percent of patients were still using the original implant 20 years after their surgery.

To request a call from one of our Connecticut Orthopaedic Institute clinical team members, visit ctorthoinstitute.org/midstateknee1 or call 833.203.7523 to find an orthopaedic specialist.
Mako Robotic-Arm Assisted Surgery: Channeling Computer Power and Robotics

Even though the country’s first knee-replacement surgeries date to the early 1900s, the procedure did not become common until the Food and Drug Administration approved bone cement for both hip and knee prosthetics in the 1970s.

More recently, computer technology and robotics have transformed knee replacement surgery. Smaller incisions and a quicker recovery are among the benefits of the enhanced precision provided by robotics. The technology is particularly useful to surgeons in getting an accurate alignment of the joint during a partial knee replacement procedure.

Some COI surgeons use Mako Robotic-Arm Assisted Surgery technology, guiding a robotic arm to remove diseased bone and cartilage before placing the implant. With Mako, a 3D virtual model of your knee joint created from a CT scan is loaded into software that helps create a surgical plan. Though adjustments are always available, Mako keeps the surgeon within the plan’s boundaries. This ensures both accuracy and preservation of ligament soft tissue.

What Is A Partial Knee Replacement?

A partial knee replacement, also known as partial knee resurfacing, replaces only an arthritic inner or top (or both compartments) of the knee joint, leaving healthy areas intact. Both the anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL) – which help stabilize the knee – are preserved.

Here, COI surgeons also can use robotic-arm assisted surgery for precise placement of the implant. In studies, the alignment of a patient’s joint after partial knee replacement using Mako were more accurate than conventional methods. But despite this advantage, and less pain reported by patients after surgery, there was no discernible difference between robotic-arm assisted and traditional surgery outcomes after one year.

Talk to your doctor about which surgical method is best for you.

To request a call from one of our Connecticut Orthopaedic Institute clinical team members, visit corthoinstitute.org/midstateknee1 or call 833.203.7523 to find an orthopaedic specialist.