

A Guide to Robotic-Arm Assisted Surgery for Hip and Knee Replacement

Welcome to the Department of Orthopedics and Rehabilitation

We welcome you and thank you for choosing NewYork-Presbyterian Queens for your orthopedic joint replacement surgery. Our surgeons, doctors, nurses and other healthcare professionals want to ensure you receive the highest standards of medical care possible, using the latest technology available, for your hip and/or knee replacement surgery.

This guide is intended to help you understand and prepare you for the three phases to a successful robotic-arm assisted surgery. We are committed to keeping you informed on your journey from your “Road to Replacement” to your “Road to Recovery” and helping you become an active partner in your healthcare.

We want to make your experience as convenient and comfortable as possible. Most patients who have a joint replacement can be safely discharged after two or three days in the hospital. Rest assured, your healthcare team is here to answer all of your questions and to discuss what expectations you should have for your hospital stay, what it will be like when you return home, and how to make your home as safe as possible to continue your recovery.

We thank you again for choosing NewYork-Presbyterian Queens and, remember, the most important member of the healthcare team is YOU!



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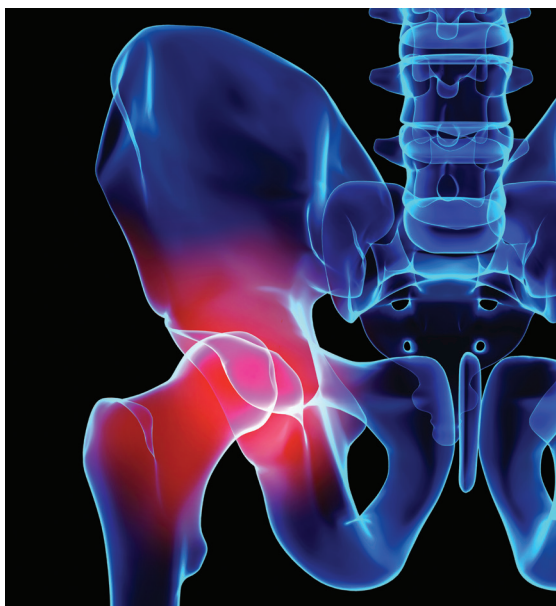
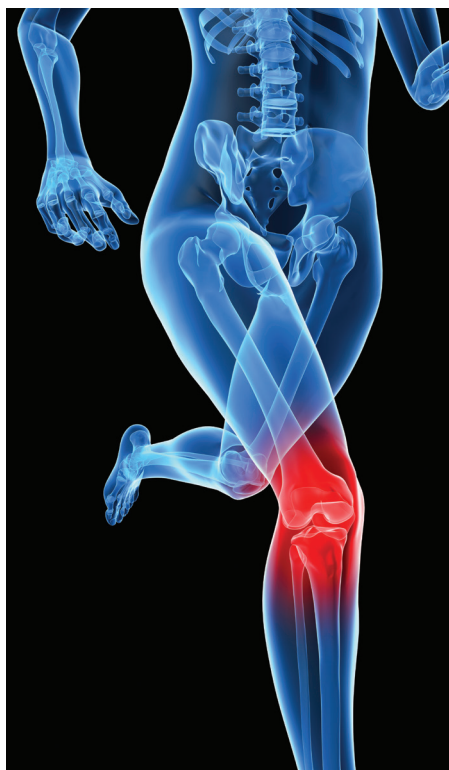


NewYork-Presbyterian Queens
has earned The Joint Commission's
Gold Seal of Approval®

The Most Advanced, Leading-Edge Technology in Orthopedics: Robotic-Arm Assisted Surgery

At NewYork-Presbyterian Queens, our orthopedic surgeons use the latest technology and most advanced robotic-arm assisted surgery for total hip, total knee or partial knee arthroplasty as an alternative to traditional replacement surgery.

The state-of-the art robotic-arm system enables our surgeons to create a unique 3-D model of your bone anatomy prior to the procedure. This 3-D model allows the development of a personalized surgical plan for the placement of your implant with a higher degree of accuracy and precision.



The Phases of Surgery

Robotic-arm assisted surgery is a very methodical process. There are three phases to successful robotic-arm assisted surgery including:



1

Before Surgery – A CT Scan of your joint is used to generate a 3D virtual model of your unique anatomy. This model is loaded into the system software to create your personalized pre-operative plan.



2

During Surgery – Your surgeon will use the personalized pre-operative plan and robotic-arm to assist in performing your surgery. The system allows your surgeon to make adjustments to your plan during surgery as needed, and provides a more accurate placement and alignment of your implant.



3

After Surgery – Your orthopedic team of surgeons, nurses and therapists will set goals with you to get you back on the “road to recovery” and will closely monitor your condition and progress.

Knee Replacement Surgery

Knee replacement surgery is a surgical procedure in which a diseased or damaged joint is replaced with an artificial joint called an implant. The artificial joint is made of metals and plastics to match the function of bone and cartilage and is designed to move much like a healthy human joint.

The knee joint is formed by the ends of three bones, which are connected by tissue bands called ligaments to stabilize the joint. These bones consist of the lower end of the thigh bone, or femur; the upper end of the shinbone, or tibia; and the kneecap, or patella.

Our orthopedic surgeons and team of specialists perform both total knee replacements and partial knee replacements using the robotic-arm technology to repair the damaged or injured knee. This technology is designed to provide patients with a surgical experience that is tailored to their individual specific diagnosis and anatomy. Once a diagnosis has been developed, your surgeon will discuss which procedure and care plan is best for you.



Total Knee Replacement – Total knee replacement is a resurfacing procedure where the diseased or damaged joint is removed and replaced with an artificial joint called an implant.

Partial Knee Replacement – Partial knee replacement is a surgical procedure that helps relieve arthritis in one or two of the three compartments of the knee. Only the damaged part of the knee is replaced and may include:

- **Unicondylar Knee Replacement** – A procedure to replace only the medial or lateral compartment of the knee.
- **Patellofemoral Knee Replacement** – A procedure to replace the worn patella (kneecap) and the trochlea (groove at the end of the thigh bone).
- **Bicompartmental Knee Replacement** – A procedure to replace two compartments of the knee, the medial and patellofemoral compartments.

Hip Replacement Surgery



In total hip replacement surgery, the portions of the hip joint that contain the damaged surfaces are replaced with precision metal and plastic parts accepted by the body which provide a smooth and painless range of motion. Your surgeon will make every effort to restore your hip to a condition that resembles its healthy preoperative status and to correct any deformity that may have existed.

By using the surgeon-controlled robotic arm system, patients experience improved accuracy in placement of the hip implant which reduces the likelihood of hip dislocation. The state-of-the-art procedure also provides a more precise consistency in leg length, potentially decreasing the need for a shoe lift and a decreased risk of the implant and bone abnormally rubbing together.

Common Causes of Hip or Knee Pain

Each patient is unique, and can experience hip or knee pain for different reasons. Common causes of joint pain are osteoarthritis (OA) and rheumatoid arthritis (RA). Osteoarthritis is oftentimes referred to as degenerative arthritis, a condition caused by the wearing out or breaking down of the cartilage in the joints. Rheumatoid arthritis produces chemical changes in the lining of the joints, or synovium, and causes the joint to become inflamed. The synovial fluid then destroys the cartilage which results in cartilage loss. In both cases, when the cartilage deteriorates, the bones rub against one another causing pain and stiffness.

Since your hips and knees are the largest joints in your body and are central to nearly every routine activity you perform, if they become diseased or injured, the pain can become debilitating and limit your ability to function.



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