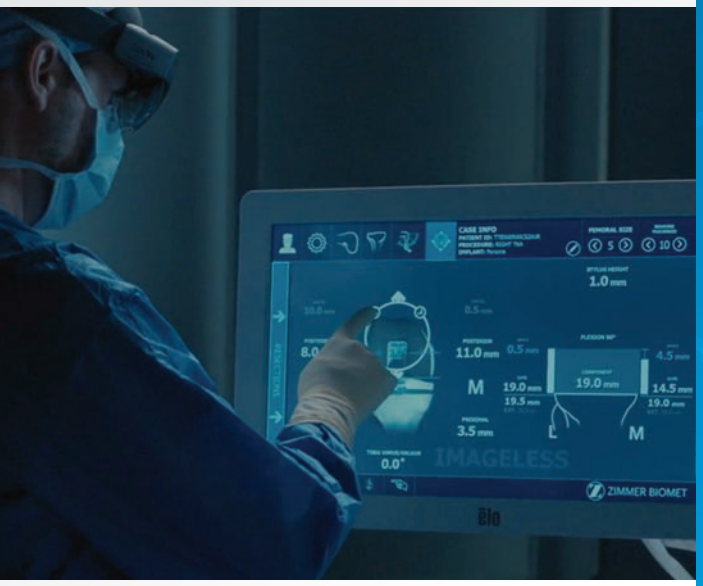
ROSA® KNEE



UNDERSTANDING ROBOTIC TECHNOLOGY FOR TOTAL KNEE REPLACEMENT

You're unique, and so is your individual anatomy. That's why Zimmer Biomet offers ROSA® Knee Robotic Technology. ROSA, which stands for Robotic Surgical Assistant, is designed to help your surgeon tailor the placement of your knee implant just for you.

ROSA Knee uses data collected before and during surgery to inform your surgeon of many details related to your unique anatomy that may affect your implant fit. By using this data to make more informed decisions, your surgeon is able to plan for and carry out a personalized surgery based on your individual needs.

For more information, resources and tools to support your joint health journey, please visit **TheReadyPatient.com.**

WHAT RISKS ARE INVOLVED?

It is important to understand the risks involved. There are potential complications both during and after surgery. Generally, these include infection, blood clots, pneumonia, implant loosening, nerve damage, bone fracture and implant breakage; any of which can require additional surgery. While joint replacement is generally successful in lowering pain levels and increasing mobility, some patients will continue to experience pain and your doctor may permanently restrict certain activities that could damage and wear out your new knee parts. Ask your doctor to explain other surgery risks.

1. Khan, I.A., *et al.*, Image-Free Robotic-Assisted Total Knee Arthroplasty Results in Quicker Recovery but Equivalent One-Year Outcomes Compared to Conventional Total Knee Arthroplasty. J Arthroplasty, 2023. 38(6S): p. S232-S237. **2.** Fary, C., *et al.*, Earlier Gains in Active Range of Motion Following Robotic-Assisted Total Knee Arthroplasty Compared with Conventional Instrumentation. Orthopaedic Proceedings, 2023. 105-B(SUPP_2): p. 43-43. **3.** Parratte, S., *et al.*, An anatomo-functional implant positioning technique with robotic assistance for primary TKA allows the restoration of the native knee alignment and a natural functional ligament pattern, with a faster recovery at 6 months compared to an adjusted mechanical technique. Knee Surg Sports Traumatol Arthrosc, 2022. **4.** Wehner E, Boisvert O. Why use X-ray over Computed Tomography: ROSA® Knee Pre-operative Planning. Zimmer Biomet; 2019. https://zbsaleshub.zimmerbiomet.com/salesInformation/fileDownload.cf m?contentID=17174&method=attachment&category=4&attachmentID= 14429 **5.** Lonner J. A Personal Journey through, and Review of, the Landscape of Surgical Robotics in Knee Arthroplasty: My Transition from Mako® to NAVIOTM and Finally to the ROSA® Knee System. J Orthopaedic Experience and Innovation. 2022; **6.** Schrednitzki D, Horn CE, Lampe UA, Halder AM. Imageless robotic-assisted total knee arthroplasty is accurate in vivo: a retrospective study to measure the postoperative bone resection and alignment. Archives of Orthopaedic and Trauma Surgery. 2022/10/21 2022;doi:10.1007/s00402-022-04648-2. **7.** Seidenstein A, Birmingham M, Foran J, Ogden S. Better accuracy and reproducibility of a new robotically-assisted system for total knee arthroplasty compared to conventional instrumentation: a cadaveric study. Knee Surg Sports Traumatol Arthrosc. May 24 2021;29(3):859-866. doi:10.1007/s00167-020-06038-w. **8.** Lonner, J.H., *et al.*, Improved accuracy and reproducibility of a novel CT-free robotic surgical assistant for medial unicompartmental knee arthroplasty compared to conventional instrumentation: a cadaveric study. Knee Surg Sports Traumatol Arthrosc, 2021

Important Note: This is intended to provide an overview of knee replacement surgery and should be reviewed with your doctor. It does not include all of the information needed to determine eligibility for knee replacement or for the proper use and care of artificial knee replacements. Please consult your surgeon for more information. Individual results may vary. Your results will depend on your personal circumstances. How long a knee replacement will last varies from patient to patient. It depends on many factors, such as the patient's physical condition, activity level and body weight, and the surgical technique. The people shown are not actual doctors or patients.

ZIMMER BIOMET
Moving You Forward.™

2497.2-US-en-Issue Date 2023-10

ROSA® ROBOTICS

Technology for
Total Knee Replacement

KNEE REPLACEMENT

Osteoarthritis, the most common form of arthritis, is a wear-and-tear condition that destroys joint cartilage and bone. A total knee replacement resurfaces damaged cartilage and bone with an artificial implant device. The implants create a new, smooth functioning joint that helps alleviate the painful bone-on-bone contact. ROSA Knee robotic technology assists your surgeon to plan and carry out a personalized surgery based on your unique anatomy.

Healthy Knee | Arthritic Knee | Knee Implant

THE DECISION TO HAVE SURGERY IS SOMETIMES DIFFICULT.

Getting a precise knee implant fit is important to your comfort, recovery and overall experience following knee replacement surgery. ROSA Knee technology uses data that enables your surgeon to execute a personalized surgery, allowing for an optimal implant fit based on your needs.

WHAT TO EXPECT FROM A ROSA ROBOTIC KNEE REPLACEMENT

BEFORE SURGERY EXPERIENCE

Your experience before surgery will be like that of most total knee patients. But, unlike traditional knee replacement methods, with ROSA Knee, a set of X-rays may be used to create a 3D model of your knee anatomy. This 3D model will enable your surgeon to plan many specifics of your knee replacement prior to your surgery.

HOW ROSA ROBOTICS WORKS DURING SURGERY

During your procedure, the ROSA Knee robot utilizes a camera and optical trackers to know exactly where your knee is in space. Think of it like a very detailed global positioning system (GPS) that you might use in your car. If your leg moves even a fraction of an inch, the robot can tell and adjusts accordingly. This helps ensure that the plan your surgeon put into place is executed as intended. Throughout your surgery, the ROSA Knee robot provides your surgeon with data about your knee. This information, combined with your surgeon's skill, helps them know how to position your implant based on your unique anatomy.

EXPECTATIONS AFTER SURGERY

Following surgery, you may return home the same day or remain in the hospital for one to three days, depending on the recovery plan your surgeon decides is best for you. Recovery time varies, but most people should be able to drive after two weeks and back to moderate activity after three to four weeks. Your surgeon will guide you on when and what activities you can return to and what activities to avoid.

DOES THE ROSA ROBOT OPERATE BY ITSELF?

The surgical procedure using the ROSA Knee robot is similar to traditional total knee replacement, but with a robotic assistant. Your surgeon has been specially trained to use the ROSA Knee robot to personalize the surgical approach for your unique anatomy. It's important to understand that the robot does not operate on its own. That means it does not move unless your surgeon prompts it to. Your surgeon is still in the operating room the entire time and is making all of the decisions throughout your surgery.

BENEFITS OF ROSA ROBOTIC TECHNOLOGY

- Faster recovery with earlier improvements in range of motion and function compared to traditional total knee replacement[1-3]
- Less exposure to radiation compared to CT-based robotic knee replacement[4,5]
- Improved accuracy and implant positioning compared to traditional knee replacement[6-8]