



WHAT YOU NEED TO KNOW ABOUT

Total knee replacement surgery with the NAVIO[◇] Surgical System

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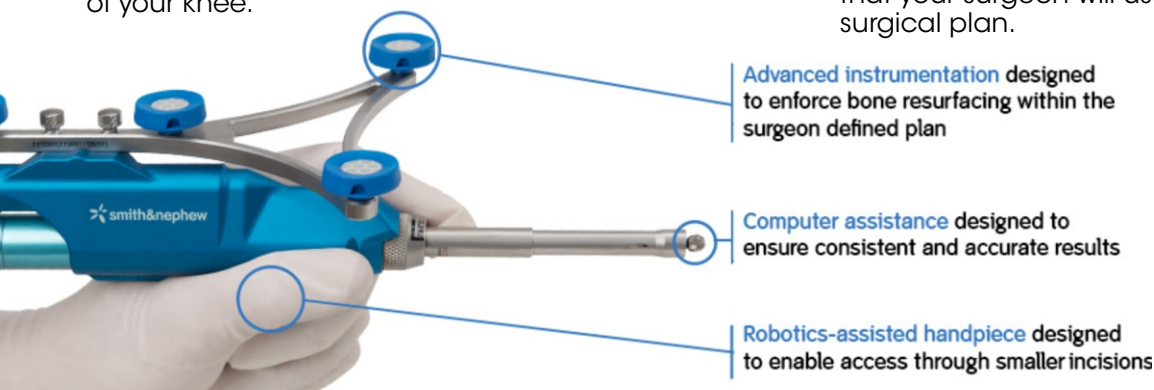


Robotics-assisted knee replacement planning with the NAVIO[◇] System

The total knee replacement procedure starts with your unique anatomy in mind. By the time your procedure is complete, the damaged bones and cartilage within your knee joint will be removed and replaced with new implant components. Each of these implant components must fit precisely and be aligned to your natural anatomy if they are to provide you with the best outcome possible. The challenge of aligning your implant and preparing your bones to accept it can be complex, invasive and time consuming because no two knee joints are exactly the same.

More than 600,000 total knee replacement procedures are performed each year in the U.S. and more than 90% of these patients experience a dramatic relief in knee pain and are better able to perform common activities.¹ The NAVIO[◇] Surgical System delivers robotics-assisted tools designed to help tailor your total knee replacement surgery to the unique shape and motion of your knee.

The NAVIO[◇] Surgical System is designed to help your surgeon not only plan your surgery based on your unique anatomy, but also position your total knee implant using a combination of computer and robotic assistance. The NAVIO[◇] procedure starts with an advanced computer system that gathers precise anatomic and alignment information about your joint that your surgeon will use to create your specific surgical plan.



This extra layer of data collection and planning is designed to help ensure your knee procedure is performed exactly as your surgeon intends and that your implant is positioned as accurately as possible for the best long-term outcome.

CT-Free

Other robotic-assisted knee replacement systems use computerized tomography, or CT, scans to help a surgeon visualize a patient's knee anatomy. While CT scans are effective at showing the layers of knee anatomy, they can expose the patient to potentially harmful radiation. In fact, a single CT scan is equivalent to the radiation exposure received in 48 chest X-rays.²

The NAVIO® system eliminates the need for CT scans by using an advanced computer program to collect anatomic and alignment information about your knee. Once captured, this information is used to build a precise, computer-rendered 3D model of your knee that your surgeon will use to plan your surgery.



Total Knee Replacement Surgery without rods

Another method that can be used to determine the anatomic alignment of your new implants uses long, metal devices called intramedullary (IM) rods that are drilled into the central canal of the bone to show the alignment of the knee in relation to the hip. These rods are then used to attach the cutting guides necessary to guide the surgeon's saw blade as it shapes the bones to accept the new implants.

Because the NAVIO® system has already gathered the anatomic alignment information about your knee, it eliminates the need for IM rods. Instead, your surgeon will use the system's handheld robotics-assisted tool (the NAVIO® handpiece) to accurately position the NAVIO-specific cut guides which are held in place with a few small pins instead of the IM rod. This process leaves the central canal of your bone untouched. Implant alignment is a crucial factor in determining how long the implant will last^{3,4}.

Important safety notes

Individual results of joint replacement vary. Implants are intended to relieve knee pain and improve function, but may not produce the same feel or function as your original knee. There are potential risks with knee replacement surgery such as loosening, wear and infection that may result in the need for additional surgery. Patients should not perform high impact activities such as running and jumping unless their surgeon tells them that the bone has healed and these activities are acceptable. Early device failure, breakage or loosening may occur if a surgeon's limitations on activity level are not followed.

Disclaimer

Individual results may vary. There are risks associated with any surgical procedure including NAVIO-enabled Knee Replacement. NAVIO® is not for everyone. Children, pregnant women, patients who have mental or neuromuscular disorders that do not allow control of the knee joint, and morbidly obese patients should not undergo a NAVIO procedure. Consult your physician for details to determine if NAVIO® is right for you.

American Academy of Orthopaedic Surgeon website, accessed March 7, 2017 //orthoinfo.aaos.org/topic.cfm?topic=A00389 • Ponzo DY, Lonner JH, Preoperative Mapping in Unicompartmental Knee Arthroplasty Using Computed Tomography Scans Is Associated with Radiation Exposure a..., J Arthroplasty (2014) • Collier, Matthew, et al., "Patient, Implant, and Alignment Factors Associated With Revision of Medial Compartment Unicompartmental Arthroplasty.", Jour of Arthro, Vol 21 No 6, Suppl. 2, 2006. • Hernigou, Ph, Deschamps, G., "Alignment Influences Wear in the Knee after Medial Unicompartmental Arthroplasty.", Clin Orthop Relat Res., Volume 423, June 2004, pp 161-165

All information provided on this website is for information purposes only. Every patient's case is unique and each patient should follow his or her doctor's specific instructions. Please discuss nutrition, medication and treatment options with your doctor to make sure you are getting the proper care for your particular situation. If you are seeking this information in an emergency situation, please call 911 and seek emergency help.

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NAVIO® Brings Robotics-assisted Precision to Total Knee Surgery

After removing the cutting guides, the prosthetic knee implants are implanted and your knee is checked to make sure it moves and is balanced correctly. It is important to understand that the NAVIO® system doesn't replace your surgeon. The procedure remains in the skilled hands of your surgeon, with the NAVIO® system providing extra layers of planning, accuracy and precision.



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Dr. Michael L. Lykins is a board-certified orthopaedic surgeon with expertise in total joint replacement, knee, and shoulder arthroscopy, hand surgery, and has a special interest in sports medicine.

Dr. Lykins graduated from medical school in 1989 from Ohio University College of Medicine. He completed his internship and residency in orthopaedics at Doctor's Hospital of Stark County, where he was the chief surgery resident. While completing his studies, Dr. Lykins received several scholarships, honors, and awards of excellence.

Dr. Lykins volunteers in his community. He has been the Washington Massillon Tigers High School team physician for the past 19 years. He enjoys spending time with his family and is a recreational avid golfer. He is a faithful fan of all Cleveland sports and a die-hard Cleveland Browns fan.

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