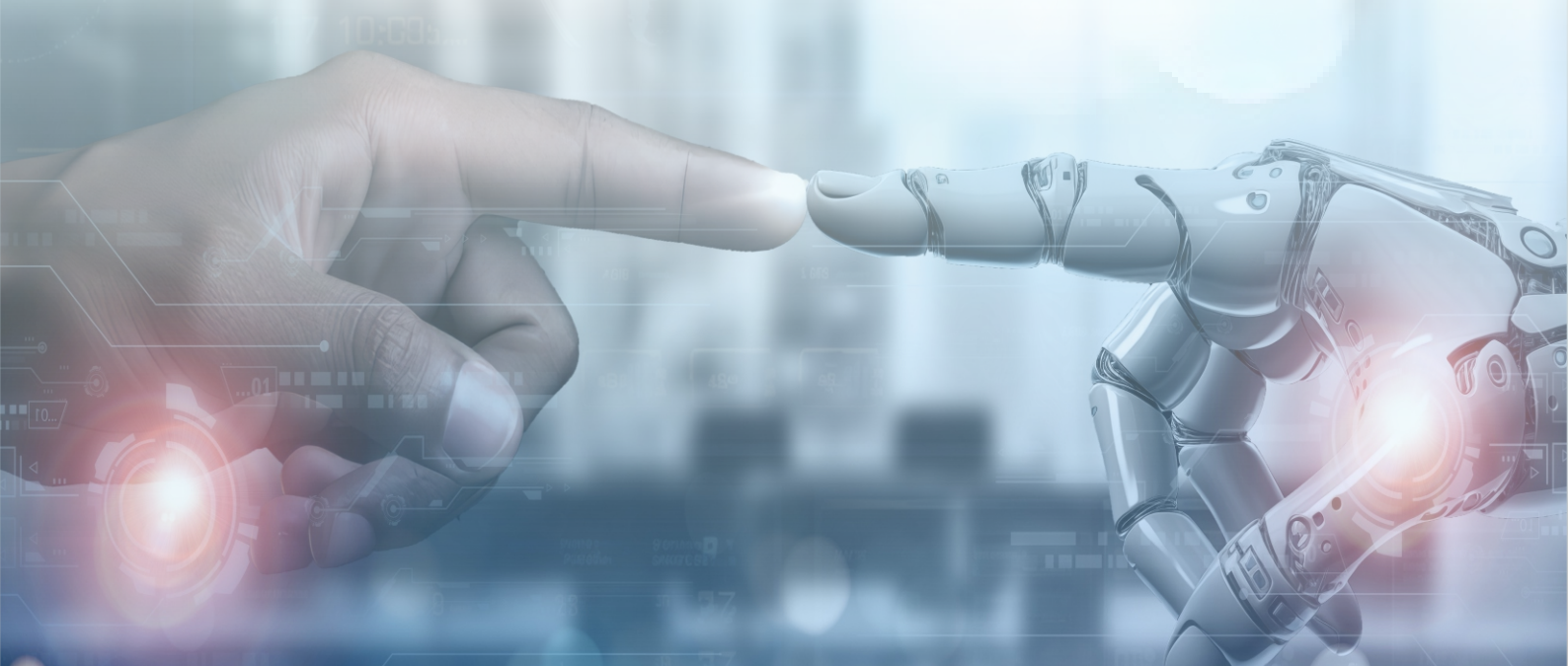


Every Step Counts

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Experience Improved Mobility with
Robotic Technology



Robotic Knee Patient Education Booklet

This brochure has been designed to help you learn more about arthritis of the knee and how robotic surgery may be the right treatment option for you. Be sure to discuss all the treatment options related to your knee and pain with your physician.

Arthritis and Your Life

Arthritis pain can start suddenly, and gradually develop over time, affecting daily tasks such as walking, climbing stairs, and sitting. You may not be able to bend or straighten your knee as you once could. You may feel grinding sensation, popping, and cracking sounds which can even wake you up in the night. The knee's appearance may change due to a joint breakdown.

Please speak with your physician if your symptoms of arthritis aren't responding to non-surgical solutions, or your pain can no longer be controlled by medication and is unbearable. The most common surgical knee intervention for OA (osteoarthritis) is total knee replacement, where the natural knee joint is removed and replaced with an artificial implant. This treatment is typically offered to patients with advanced knee osteoarthritis.

Understanding Arthritis

Knee arthritis: can make "everyday life very difficult "

There are three types of arthritis that you can have in your knee :

- **Osteoarthritis (OA):** This type of arthritis happens due to wear and tear of your joints over time. It causes the cartilage to deteriorate, resulting in bone -to -bone friction.



- **Rheumatoid arthritis (RA):** This type of arthritis is caused by an autoimmune disease that attacks various joints throughout the body. The disease is chronic and inflammatory, which damages ligaments and cartilage while softening the bone.
- **Post-traumatic arthritis (PA):** This type of arthritis will develop after a trauma or injury to the knee. It may not develop until years after the injury.

What is robotic knee replacement surgery ?

In knee replacement surgery, the arthritic portion of the knee is removed and replaced by an artificial joint that forms the new surfaces of the knee joint. During robotic total knee replacement surgery, surgeons use computed tomography (CT) scans to build a 3D model of the patient's knee. With that virtual model as a guide, the surgeon then uses the robotic arm to make accurate bone cuts and insert the knee components precisely.



How does robotic joint replacement work ?

- **Personalized pre-planning:** "The"Patient's joints 3D images are used by the doctor for pre-planning of the surgery personalized to the patient.
 - **Pre-selection and precise insertion of artificial joints:** The doctor uses the robot to select an artificial joint for the patient and insert it accurately.
 - **Precise cutting for accuracy and optimum alignment:** The robot reviews the data and cuts the bone precisely concerning the dimensions of the implant decided during the pre-surgery planning stage.
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How does robotic joint knee replacement surgery benefit me?

The advantages of the robotic joint replacement surgery were mainly attributed to its comprehensive pre-operative plan, intra-operative monitoring, and patient-specific appropriate intervention by surgeons.

The precision of joint robotic system surgery allows for :

- More accurate implant placement, results in a more natural feeling after the surgery.
- Reduced risk of injury to adjacent tissues results in improved safety and reduced risk of infection.
- Smaller incisions and reduced blood loss help in quicker recovery and less pain.
- Early rehabilitation, decreased admission time, and early discharge from the hospital.
- Better implant survivorship and longevity.
- Improved quality of life.



Welcome to Merai, where innovation meets healthcare. At Merai, we are dedicated to transforming the future of medical care through cutting-edge robotics and artificial intelligence. Our vision is clear and ambitious: to pioneer advancements that not only enhance the quality of patient care but also redefine the boundaries of medical technology.

Founded with a commitment to excellence, Merai stands at the forefront of the healthcare revolution. Our team of experts, drawn from the fields of engineering, medicine, and AI, works tirelessly to develop solutions that address the most pressing challenges in healthcare today. From robotic surgical systems to AI-driven diagnostics, our products are designed to improve outcomes, increase efficiency, and provide unparalleled support to medical professionals worldwide.

At Merai, we believe that the future of healthcare lies in the seamless integration of technology and human expertise. Our innovative approaches are not just about creating advanced tools but about enabling healthcare providers to deliver better, faster, and more personalized care. We are proud to contribute to a world where technology empowers patients and practitioners alike, leading to a healthier and more connected society.

Join us on our journey as we shape the future of healthcare. Merai – where technology meets compassion, and the possibilities are endless.



More to Life

Meril is a global medical device company dedicated to the design and development of novel, clinically relevant, state-of-the-art and best-in-class devices to alleviate human suffering and improve the quality of life. We span a broad operational canvas ranging from vascular interventional devices to orthopedics, in-vitro diagnostics and endo-surgery.

We share an enduring perseverance to advance healthcare solutions, for more patients to live longer and healthier lives. We have a strong commitment towards R&D and adhere to the best quality standards in manufacturing, scientific communication and distribution known today.

Established in 2006, Meril's launch was in line with the healthcare diversification plan of Bilakhia Group. Located in Vapi, 150km north of Mumbai, and ensconced within the serene hill-sides of Chala town, Meril sits proud in its ultra modern manufacturing facilities.

Disclaimer: An awareness initiative by Meril.

Always consult with your physician for medical condition