

# Corin

Connected Orthopaedic Insight

Your guide to robotic-assisted  
knee replacement



**OMNIBotics®**  
Robotic-assisted total knee replacement

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# Knee replacement

## Why are you in pain?

A healthy knee moves easily, allowing you to walk, run, turn and kneel without pain. Formed from a complex structure of bones, cartilage, ligaments, muscles and tendons, these elements work together to create a highly flexible joint.

A common type of knee pain is arthritis caused by damaged cartilage – the three most common types of which are osteoarthritis, rheumatoid arthritis and post-traumatic arthritis. The most prominent symptom of knee arthritis is pain – everyday activities such as walking, driving, lifting, standing or simple exercising can become extremely painful or even impossible.

## Your knee replacement

Total knee replacement is a surgical procedure in which the bone surfaces and cartilage that have been damaged or worn away are removed and replaced with artificial surfaces ('implants' or 'prostheses') made of metal or a plastic material.

Most types of knee replacement consist of a metal femoral component which resurfaces the lower end of the femur (thigh bone), and a metal or plastic tibial component. A separate plastic insert or 'bearing' sits in between the two (this may be part of the tibial component in some devices), effectively replacing the cartilage. A plastic patella component can also be used to resurface the back of the knee cap.



# OMNIBotics®

## Robotic-assisted total knee replacement

OMNIBotics robotic-assisted total knee replacement is a state-of-the-art procedure that combines patented technology with robotic instrumentation to help surgeons place and fit implants with greater accuracy<sup>1</sup> compared to conventional approaches.

Much like we rely on GPS to help us get to our destination, robotic-assisted knee surgery maps out the precise positioning for the implant according to your individual anatomy.

This procedure was designed to provide the following patient benefits:

- Reduced pain during recovery
- Increased patient satisfaction
- Stability in regular daily activities

The OMNIBotics procedure has been performed worldwide since 2010.



# A procedure designed specifically for you

Individualized surgery delivered with robotic precision.

## OMNIBotics Bone Morphing®

Your surgeon uses patented OMNIBotics Bone Morphing technology to quickly produce a 3D model of your knee at the start of your surgery. Your surgeon uses that model to plan the optimal implant position, aiming for best overall fit, function, and stability.



## BalanceBot™:

To best evaluate knee function, your surgeon can use the BalanceBot, a robotic device that measures the knee's surrounding soft tissue structures, and the forces applied to the knee during full range of motion. The data captured is used to then help the surgeon plan the implant position specific to your needs.



## OMNIBot™:

With the plan established, your surgeon can use the OMNIBot robotic cutting guide to assist with the removal of the arthritic knee surfaces. The precision of this guide is important in ensuring the customized plan is carried out accordingly.

With the arthritic surfaces removed, and new knee components put in place, the software helps confirm the procedure was carried out to plan, and can generate a report for you to take home after surgery.





# Post operation

## Following surgery

To manage your own expectations about how quickly you will be 'back on your feet', it is important to understand what will happen both immediately after your surgery and in the months that follow. Normal recovery from any operation varies from patient to patient and is partly dependent on pre-operative health. Post-operative rehabilitation regimens also vary, your surgeon will advise you about this.

You may see a physical therapist during your hospital stay who will help you with exercises to strengthen your muscles. The exercises recommended by your physical therapist are a crucial part of your recovery, so it is essential that you continue to do them when you return home. It has been shown that adhering to your rehabilitation program may be a significant indicator of positive outcomes after reconstructive surgery.<sup>2</sup>



1. Koulalis D, O'Loughlin PF, Plaskos C, Kendoff D, Cross MB, Pearle AD. Sequential versus automated cutting guides in computer-assisted total knee arthroplasty. *Knee*. 2011 Dec;18(6):436-42.
2. <https://orthoinfo.aaos.org/en/treatment/total-hip-replacement>



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