

Can a Robotic Arm Help Reduce Knee Pain?

David Lubin, M.D., an emergency room doctor, suffered with knee pain for 20 years. But he got his life back in January 2008 when he had a new robotic arm partial knee replacement procedure called MAKOpasty®.



David Lubin, M.D.

His trouble started with a small tear in the meniscus of his knee. At the time he had surgery and recovered to the point where the pain was minimal, but he was never without pain. A few years later the pain became worse as he developed osteoarthritis. He started walking with a limp. He had another surgery but nothing helped. Eventually the pain became so bad his physician told him to consider having a total knee replacement.

According to the American Academy of Orthopedic Surgeons, osteoarthritis (OA) is the most common form of knee arthritis and a leading form of disability worldwide. In an osteoarthritic knee the cartilage covering the ends of the bones in the knee joint eventually wears away, making it more painful to move the joint. The symptoms include pain, stiffness and swelling in the knee joint and sometimes loss of motion.

Eventually, Dr. Lubin made an appointment with an orthopedic surgeon to discuss the total knee replacement procedure. When he told the surgeon that he was used to being active and intended to get back to activities that he once enjoyed, his orthopedic surgeon suggested he consider MAKOpasty® as an option.

In January 2008 Dr. Lubin had a MAKOpasty® robotic arm partial knee replacement procedure. He was up and walking the day after his surgery and was walking without a limp within two weeks.

“My physical therapist says she has never seen such rapid muscle response,” says Dr. Lubin. “I was recently able to walk three miles and that included some hills. I had no difficulty with the knee.”

How does it work?

With the aid of the MAKO Tactile Guidance System™ (TGS™) the surgeon is able to view a virtual visualization of the patient’s knee based on a CT scan. This allows the surgeon to determine the right size implant to use as well as how to align it in the patient’s knee – all before the surgery. The ability to align the implant is critical to achieving implant function and longevity.

During the surgery, the TGS™ provides the surgeon a view of inside the knee

and the area of bone where the implant will be placed. The surgeon uses a robotic arm to prepare the bone for the implant and the TGS™ provides a preset safety zone where the cutting tool works and gives an added level of precision to bone preparation and implant placement.

Because the surgeon can virtually see the bone he is removing, he is able to perform the surgery through a minimal incision. The surgeon is in complete control of the robotic arm at all times and the system gives him immediate tactile, visual and acoustic feedback – in essence preventing him from going outside the preset area.

Who would be a good candidate for a MAKOpasty® procedure?

If you are diagnosed with osteoarthritis of the knee in the medial compartment, MAKOpasty® may be right for you. It is one of the less invasive knee surgeries currently being performed and provides you with the opportunity to return to an active lifestyle. Other potential benefits include a smaller incision, less scarring, a shorter hospital stay and the ability to return to everyday activities much sooner than with the traditional knee replacement surgery.