Minimally Invasive Knee Replacement

In minimally invasive knee replacement, the surgical procedure is similar, but there is less cutting of the tissue surrounding the knee. The artificial implants used are the same as those used for traditional knee replacement. However, specially designed surgical instruments are used to prepare the femur and tibia and to place the implants properly.

Minimally invasive knee replacement is performed through a shorter incision—4 to 6 inches versus 8 to 10 inches for traditional knee replacement. A smaller incision allows for less tissue disturbance.

In addition to a shorter incision, the technique used to open the knee is less invasive. In general, techniques used in minimally invasive knee replacement are "quadriceps sparing," meaning they avoid trauma to the quadriceps tendon and muscles in the front of the thigh. Other minimally invasive techniques called "midvastus" and "subvastus" make small incisions in the muscle but are also less invasive than traditional knee replacement. Because the techniques used to expose the joint involve less disruption to the muscle, it may lead to less postoperative pain and reduced recovery time.

The hospital stay after minimally invasive surgery is similar in length to the stay after traditional knee replacement surgery--ranging from 1 to 4 days. Physical rehabilitation is a critical component of recovery. Your surgeon or a physical therapist will provide you with specific exercises to help increase your range of motion and restore your strength.

Candidates for Minimally Invasive Total Knee Replacement

Minimally invasive total knee replacement is not suitable for all patients. Your doctor will conduct a thorough evaluation and consider several factors before determining if the procedure is an option for you.

In general, candidates for minimal incision procedures are thinner, younger, healthier and more motivated to participate in the rehabilitation process, compared with patients who undergo the traditional surgery.

Minimally invasive surgeries may be less suitable for patients who are overweight or who have already undergone other knee surgeries.

In addition, patients who have a significant deformity of the knee, those who are very muscular, and those with health problems that may slow wound healing may be at a higher risk for problems from minimally invasive total knee replacement.

Conclusion

The benefits of minimally invasive knee replacement have been reported to include less damage to soft tissues, leading to a quicker, less painful recovery and more rapid return to normal activities. Current evidence suggests that the long-term benefits of minimally invasive surgery do not differ from those of knee replacement performed with the traditional approach.

Like all surgery, minimally invasive surgery has a risk of complications. These complications include nerve and artery injuries, wound healing problems, infection, and errors in positioning the prosthetic knee implants.