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## Know Your Procedure Options Knee Replacement

**Not knowing what we don't know can be scary. In this article, Orthopedic Surgeon Dr. Thomas Aleto reviews some options people may have when considering knee replacement.**

The first total knee replacement was performed in 1968. Over the years, there have been numerous advances in surgical technique, instrumentation, and implant design that have made knee replacement a highly successful procedure with great long-term outcomes for many patients. But, as with any medical procedure, there are associated risks. Ask your doctor about all possible risks associated with any of the procedures listed below.

The primary reason surgeons perform knee replacement surgery is for people with end stage, bone-on-bone arthritis that haven't found relief through conservative treatments. The most common type of arthritis is osteoarthritis, also called degenerative arthritis. Regardless of the cause, arthritis is associated with the wearing of the cartilage that cushions the knee.

Knee replacement is more accurately described as knee "resurfacing". A common patient misconception is that the entire knee is removed. In reality, the ends of the knee joint are resurfaced with metal components, and a medical grade plastic implant is used to create the new cushion in your knee. Your own muscles and ligaments provide the strength and stability to your new knee.

Below we will go through some common terms used when discussing knee replacement as well as some recent advances in knee replacement technology. These may or may not be options for your particular condition. Consult your surgeon for more information on what may work for you.

## Minimally invasive surgery (MIS)

When knee replacement was initially performed, it was done in a "maximally" invasive way due to the newness of the procedure. These large incisions were necessary at the time for adequate surgical visualization and to accommodate the limited instrumentation that was available to perform the procedure. These large incisions and exposures resulted in unnecessary tissue trauma, which often resulted in more postoperative pain and swelling.

With the evolution of surgical techniques and instrumentation, "minimally invasive surgery" gained popularity. As a result, "MIS" today utilizes smaller incisions with tissue sparing techniques to allow for adequate visualization, minimization of tissue trauma, and more predictable results.

## Partial knee replacement

Partial knee replacement is, realistically, the only truly minimally invasive option for knee replacement surgery. With partial knee replacement, only the damaged portion of your knee is replaced, thus retaining all the other normal bone, cartilage, and ligaments in your knee. There are 3 types of partial knee replacements: medial (the inside of your knee – closest to the other knee), lateral (the outside of your knee), and patellofemoral (the front of your knee, often referred to as the kneecap). Of the 3, medial partial knee replacement is the most commonly performed.

In each of these procedures, only the damaged compartment of the knee is replaced. As a result, patients are often able to recover more quickly.<sup>1-4</sup> We now have data that demonstrates that partial knee replacement is a successful long-term option in appropriately selected patients. However, not all knees with arthritis are candidates for partial knee replacement.

## Total knee replacement

Total knee replacement may be necessary when several portions of the knee are damaged by arthritis. During a total knee replacement, the arthritic portions of the femur and tibia are removed and replaced with metal implants. Then, a medical grade plastic implant is inserted between the two that will act as cartilage. For more information on partial knee replacement or total knee replacement, check out [Knee Pain Relief – Surgical Treatment Options](#).

## Robot-assisted surgery

Knee replacement surgery is a mechanical procedure that requires precise implant positioning and knee alignment. Historically, this has been accomplished with traditional surgical instrumentation.

Computer and robot-assisted surgeries have been performed in various surgical fields through the years. In knee replacement surgery, they are used by surgeons to help them optimize implant positioning and knee alignment. Computer-assisted navigation has been used for many years. Robot-assisted surgery is a relatively new concept that helps surgeons place, align, and in some cases, assist with bone preparation during knee replacement surgery.

## Risks of joint replacement

Some of the risks associated with joint replacement include infection, wear, implant or bone fracture, loosening, nerve damage and implant migration (movement); some patients continue to experience some pain after joint replacement. Individual results of joint surgery will vary. Your results will depend on your personal circumstances. How long a knee replacement will last varies from patient to patient. It depends on many factors, such as the patient's physical condition, activity level, and body weight and how well you follow doctor's orders. Replacement joints are not as strong or durable as natural, healthy joints, and there is no guarantee that a prosthetic joint will last the rest of a patient's life. All knee replacements may need to be replaced at some point. Talk to your surgeon about these and other risks associated with joint replacement.

### References

Written by Dr. Thomas Aleto who received remuneration as a Zimmer Biomet consultant for writing this article.

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3736.1-EMEA-en | 08.12.2021