

Total Knee Replacement

1. **What are the surgical options for the arthritic knee?** When non operative treatments for knee arthritis fail, surgery can be considered. Surgical options include: arthroscopy, Osteotomy, Partial Knee Replacement and Total Knee Replacement.
 - a. **Role of arthroscopy.** Arthroscopy involves a surgeon making a small incision in the knee and irrigates and removes loose pieces of cartilage. In the arthritic knee, there is a limited role for an arthroscopy. Results of a “clean out” or a “wash out” are unpredictable and would be appropriate only in very selected cases.
 - b. **Role of unicompartmental or partial knee replacement.** Partial knee replacement (also known as a “Uni”) replaces only the part of the knee that is worn out. This can be either the patello-femoral joint (knee cap-femur) or, more commonly the femoral-tibial joint. These procedures are appealing due to the fact that they are generally less invasive, have an easier recovery and due to the fact that there is more retained normal tissue left behind, are perceived by patients as less mechanical. The ideal candidate for these procedures is an evolving topic and you would need to discuss with your orthopaedic surgeon if you are an appropriate candidate for this procedure. Issues of location and amount of disease as well as the amount of deformity present are important considerations. Newer technologies such as computers, robots and custom guides have been introduced to this concept in attempts to improve outcomes. The influence of these technologies has yet to be determined. Outcomes of partial knee replacements can be comparable to total knee replacements ten years after surgery.
 - c. **Role of osteotomy.** This procedure involves cutting the bone and reorienting the alignment of the knee. It has traditionally been reserved for younger patients with higher demand activities who have malaligned knees. There are some newer technologies that may improve outcomes but currently, in general, osteotomy has a limited role in the treatment of osteoarthritis of the knee.
 - d. **Role of cartilage procedures.** This procedure involves implanting cartilage cells into the area of disease in the knee. While appealing in concept, there is a role for this procedure in an arthritic knee where the disease is very localized and has no role to play in the treatment of the advanced arthritic knee
 - e. **Role of Total Knee Replacement.** Total Knee Replacement is the gold standard for the patient who has failed non-operative treatment for arthritis of the knee. This procedure involves resecting the ends of the bones of the knee and replacing them with a combination of metal and plastic. The procedure is one of the most successful of all surgical procedures and on average provides 90-95% pain relief, has a 1-2% complication rate and approximately 90% of these knees will be satisfactory 20 years from surgery.

2. Total Knee Replacement

- a. **When do I decide to have it done?** The preliminary step in this decision is to meet with your surgeon to see if you are a candidate for total knee replacement. This will commonly involve a history, physical examination, and X-rays of the involved knee. Even if the pain is significant and the X-rays show advanced arthritis of the joint, the first line of treatment is nearly always non-operative, to include weight loss if appropriate, an exercise regimen, medications, injections, or bracing. If the symptoms persist despite these measures, then a patient would consider total knee replacement. The decision to move forward with surgery is not always straight forward, and usually involves a thoughtful conversation with yourself, your loved ones, and ultimately your surgeon. The final decision rests with the patient, and is based on the pain and disability from the arthritis influencing the patient's quality of life and activities of daily living. Patients who decide to proceed forward with surgery commonly report that the symptoms from the knee keep them from participating in activities important to them (i.e. walking, stairs, work, sleep, etc.), AND have been non-responsive to the non-operative measures.
- b. **How long do they last?** It is often quoted that total joint replacements last "15-20 years". This is not the ideal way to interpret the longevity of total joint replacements. The more accurate way to think about longevity is via the annual failure rates. Most current data suggests that both hip and knee replacements have an annual failure rate between 0.5-1.0%. This means that if you have your total joint today, you have a 90-95% chance that your joint will last 10 years, and 80-90% that it will last 20 yrs. With improvements in technology, these numbers may improve.
- c. **What is minimally invasive surgery, and how big is my scar?** Minimally invasive surgery is a term that describes a combination of reducing incision length and lessening tissue disruption beneath the incision. This includes cutting less muscle and detaching less tendon from the bone. Combined with these techniques are advancements of anesthesia and pain management that take place around the surgery. All of this combines to allow patients to feel better, have less pain, and regain function faster than in the recent past.
The size of the incision is variable, and depends on several factors that include the size of the patient, the complexity of the surgery, and surgeon preference. Most studies have shown that smaller incisions offer no improvement in pain or recovery and may actually worsen the surgeons' ability to adequately perform the procedure.
- d. **Do I have to have general anesthesia?** No. While general anesthesia is a safe option, both hip and knee replacements can be performed under regional anesthesia which generally involves the injection of local anesthetic around nerve roots in your back or leg. Choices for regional anesthesia include spinal anesthesia, epidural anesthesia, or one of a variety of peripheral nerve blocks. Many surgeons and anesthesiologists prefer regional anesthesia because of data showing it can reduce complications and improve the patient experience (less pain, less nausea, less narcotic medicine required, etc.).

- e. **Are there different types of implants?** Yes. In Orthopaedics as well as most technologies, industry has developed a number of innovative technologies in an effort to improve the outcomes of total joint replacement. In recent years, these technologies have been marketed directly to patients which has increased the awareness as well as confusion on what these different designs mean. The most important message is that while a certain manufacturer may claim that their design is “better”, almost all of the available registry data (large collections of data from countries that track total joints done in that country) show that there are no clear advantages to any of these designs when it comes to improving outcomes. Briefly, here is a current list of specific terms mean that you may encounter:

Gender specific: This refers to designs that make specific modifications to their implant that account for average anatomic differences that women have in their knee anatomy compared to men. Most manufactures have incorporated similar modifications in their newer designs, which allow for more sizing options so that the prosthesis can be more accurately fit to the patient’s native anatomy and recreate the natural function of the knee.

Rotating platform: This refers to a plastic bearing that independently rotates on the metal tray that it is seated on. More often, the plastic bearing locks into the metal tray, referred to as a “fixed bearing”. Some theoretical advantages to the rotating platform concept when it was initially designed were that it may reduce the wear of the plastic bearing, reduce the rate of loosening of the metal parts, and better replicate a patients kinematics (how the knee works). However, most data shows that after 5-10 years in use, there does not appear to be any difference in any of these outcomes when rotating platform and fixed bearing designs are compared.

- g. **How long do I stay in the hospital?** Most patients will stay in the hospital for 1-2 days depending on rehabilitation protocols used and how fast they progress with physical therapy. This is highly dependent upon preoperative conditioning, age, and other medical problems that may hinder a patient’s ability to rehab.

You should begin planning for your discharge from the hospital before your surgery. There are basically two options for you to consider and plan for your discharge from the hospital.

- **Discharge to Home:** If you go directly home from the hospital, any needed equipment and in home physical therapy will be arranged for you by the staff of the Integrated Care Management Department (ICM) of UMSJMC or your discharge planner/case manager.
- **Discharge to Inpatient Rehab:** If you go to an inpatient rehabilitation facility, those arrangements are made by the staff of the ICM Department. Factors such as your progress in physical therapy, insurance benefit coverage and bed availability determine which facility you are eligible to go to. Your transportation to the rehab facility is provided by family or designee or wheelchair van, which is a personal expense if not covered by your insurance.

You are encouraged to take the opportunity now, before your surgery, to investigate and visit rehabilitation facilities. It is best to have at least 2 or 3 alternative facilities of your choice. Your discharge planner will facilitate the process while you are in the hospital. Contact your insurance to verify a benefit/coverage for inpatient rehabilitation. Your length of stay in an inpatient rehabilitation facility, should you go there, is based upon your progress in physical therapy and your insurance benefit coverage.

- h. When can I shower?** Most surgeons do not like the wound to be exposed to water for 5-7 days. However, becoming more popular with surgeons are waterproof dressings that allow patients to shower the day after surgery. Patients then remove the dressing at 7-10 days after surgery. Once dressings are removed you still shouldn't soak the wound for 3-4 weeks until the incision is completely healed.
- i. When can I walk after surgery?** Rapid rehab protocols which emphasize increasing mobility and activity, aids a quicker recovery. You will be out of bed, sitting in a chair and walking beginning the day of, or the day after the surgery. You will attend physical therapy sessions two times a day starting the morning after your surgery. You will use a walker at first and, depending on your progress, may practice walking with a cane before you are discharged from the hospital. There are exercises to achieve mobility and strengthen the muscles around the knee replacement, but initially these are relatively easy. You will wean to a cane or no assistive device by 2-3 weeks postoperatively.
- j. Is Total Knee Replacement very painful?** Pain management following total knee replacement has come a long way over the last 10-15 years with increased use of regional nerve blocks, spinal blocks, and various other modalities used for pain control. Early range of motion and rapid rehab protocols are also designed to reduce early stiffness and pain, making the procedure much less painful than in years past. However, patients handle and perceive pain differently and as such; some patients may have relatively mild pain following the procedure while others may have a more difficult time. Some form of pain medication is usually necessary for several weeks post op. Take pain medication as directed. We recommend you take pain medicine 1 hour before any physical therapy/exercise session. Always take pain medication with food in your stomach to prevent nausea. You should avoid alcohol intake if you are taking narcotics. Alcohol interacts with these medications. You may switch to Tylenol/ acetaminophen as desired.

**For Pain medication refills, have your pharmacy call your surgeons office at 410-337-7900. Plan ahead for your weekend supply. Prescriptions cannot be refilled on the weekends.*

ICE – Application of a cold compress to the surgical site is important in minimizing swelling and reducing pain following joint replacement. Ice can be applied for 20 minutes per hour, as often as every hour. A mechanized ice cuff called a Cryocuff may be used to ice your “new knee”.

- k. **When can I drive?** If you had surgery on your LEFT knee, you may return to driving as you feel comfortable, if you have an automatic transmission. If surgery was on your RIGHT knee, you should not drive for 1 month, 4 weeks after surgery. However, some surgeons do not allow their patients to drive until after they have been seen in the office at 4-6 weeks after surgery. Check with your surgeon for more specific direction.
- l. **When can I return to work?** Returning to work is highly dependent on the patient's general health, activity level and demands of the job. Depending on the type of job, you may resume work whenever you feel able. More demanding jobs requiring more lifting, walking, or travel may need up to 3 months for full recovery. Always discuss your plan with your surgeon to obtain the proper clearance to resume work.
- m. **How long does it take to recover?** Most patients will take up to 3 months to return to most activities and likely 6 months to one year to fully recover to maximal strength and endurance following a total knee replacement. Again this is highly dependent on preoperative conditioning, additional medical problems, and patient expectations.
- n. **Do I need Physical Therapy and, if so, for how long?** Physical therapy is important to your recovery and progress. A skilled therapist can accelerate the rehabilitation as well as make the process more efficient with the use of dedicated machines and therapeutic modalities. The amount of therapy needed depends upon a patient's pre-op conditioning, motivation, and general health.

If you go directly home from the hospital, you will have in-home physical therapy about 3 times a week, for 2 weeks. It is advisable to continue physical therapy on an outpatient basis after you are discharged from in-home physical therapy. You should call the outpatient physical therapy facility soon after arriving home, to schedule your first appointment (for the third week after surgery). This is to prevent a lag in your progress. You can call Towson Sports Medicine in Towson at 410-337-8847, in Bel Air at 410-569-8587, or a facility of your choice that is within your insurance network to make an appointment.

It is your responsibility to schedule your appointments. We recommend a physical therapy facility that has a pool. Towson Sports Medicine has a pool on site. While pool therapy is helpful, it is not mandatory. Your insurance company can tell you which facilities are covered under your plan.

If you go to an inpatient rehab facility or transitional care unit from the hospital, you should contact the Outpatient Physical Therapy Facility as soon as you arrive home to set up appointment to continue your physical therapy.

You will also be taught a series of exercises that you can perform on your own without supervision. For the first 6-12 weeks after surgery you should spend some time each day working on both flexion and extension of your knee. It is a good idea to change positions every 15-30 minutes. Avoid a pillow or roll under your knee. A roll under the ankle helps improve extension, prevent a contracture, and relieve pressure on the heel. Aquatic exercising, swimming, and exercise bike are good exercise options, and can be continued indefinitely and independently.



You are allowed to climb stairs as desired. You will lead with your non-operated leg going up stairs, and lead with your operated leg when coming down. Gradually, as muscles get stronger and your motion improves, you will be able to perform stairs normally.

- o. What are the major complications?** Total knee replacement is primarily a pain relieving procedure however may not relieve all pain with possible residual stiffness and swelling. Although severe complications are relatively rare (1-5% of patients), patients may experience a complication in the postoperative period. These include very serious and possibly life threatening complications such as heart attack, stroke, pulmonary embolism a blood clot to the lungs and kidney failure. Blood clot in the leg is also a complication requiring some type of blood thinner following surgery to reduce the incidence. Stiffness or loss of motion can also occur. Infection (1%) is one of the most debilitating complications and often requires prolonged antibiotics with several additional surgeries to rid the infection. The implants can also fail over time due to wear or loosening of the components. But this generally occurs many years after surgery.

More Information on Blood Clot Prevention

- A combination of treatments is used to help prevent this complication. They include: early mobilization, compression stockings, and medication.
 - If you do not take Coumadin/Warfarin on a permanent basis before surgery, then you should take Ecotrin, 1 tablet (regular strength, 325mg tablets coated aspirin), twice a day (1 tablet in the morning and 1 tablet in the evening) for 6 weeks after surgery.
 - If prescribed Coumadin, Xarelto pills or Fragmin injections for blood clot prevention, you should continue this until the prescription is finished.
 - If you are taking Coumadin/Warfarin, Fragmin or Xarelto, **DO NOT** take Ecotrin. **Be sure to have prothrombin time levels checked, while taking Coumadin/Warfarin.**
 - **T.E.D Stockings** (white elastic stockings) – Put on first thing in the morning and remove when going to bed in the evening. These are important to control swelling as well as prevent blood clots. Wear for 6 weeks after surgery.
 - You should avoid alcohol intake if you are taking Coumadin/Warfarin, or Fragmin, or Xarelto as a blood thinner. Alcohol interacts with these medications.
 - If taking Coumadin, no (leafy) green vegetables (ie brussel sprouts etc).
- p. What can I do/not do after surgery?** Restrictions following knee replacement are generally few and should be discussed with your surgeon.
- Kneeling:** Many patients following knee replacement will have some difficulty kneeling on the operative knee. Most patients become less aware of this with time but will always have a general perception that the knee is artificial and doesn't really feel like a normal knee.
- Return to Work:** Most patients are able to return to preoperative activities and work but may have some difficulty performing heavy labor.
- Travel:** You may travel as soon as you feel comfortable. During the first 6-12 weeks after surgery, it is recommended to stretch or walk at least once an hour when taking long trips. This is important to help prevent blood clots in the lower extremities.
- Exercise/Activities/Sports:** On a long term basis, after physical therapy is completed, you may return to most exercise and sports, including walking, gardening, and golf. Swimming or stationary bike is highly recommended. Avoid high- impact sports such as running, singles tennis or squash.

q. Early Post-Operative Recovery Period (Your First 4-6 weeks)

Operative Site Care:

Staples are removed 10-14 days post-op, as long as there is no discharge at the incision site. This will be done by a visiting nurse or physical therapist if at home or by the rehabilitation staff if in a rehabilitation facility.

Your TJR can be totally immersed (for bath or swimming for instance) 3-4 weeks after surgery, as long as the wound is completely healed, and staples have been removed for 3-4 days.

Bruising is common after surgery. It may be quite dark in appearance. This is normal. The bruising may extend up the thigh, into the groin and buttock, or down into the ankle and foot before it is completely gone is several weeks.

You may have a small area of numbness to the outside of the scar, following a knee replacement. This may last up to one year or more.

The dressing will be changed prior to discharge from the hospital. It should be left on for 7-10 days. The dressing is waterproof and will protect the incision while you shower. After the 7-10 days, remove the dressing and leave the incision open to air until the staples are removed. While open to air, DO NOT, get the incision wet until 24 hours after the staples have been removed.

You may notice some drainage from the incision upon discharge from the hospital as you increase your mobility/activity at home. This drainage may last 24-48 hours. If drainage persists beyond this time, contact the office for further instructions.

Swelling: Activity related swelling in the operative site that extends down into the same side lower leg, ankle, and foot is normal. Initially after discharge from the hospital, postoperative swelling may increase due to increased activity, mobility, and physical therapy. The more active you are, the more swelling you may have.

ICE. Applying ice to the operative site for 20 minutes per hour will help reduce swelling. It is recommended to do ice application a minimum of four times a day and as often as every hour.

ELEVATION. Elevating the operative leg(s) will allow gravity to drain the swelling out of the leg, foot and ankle. It is recommended to elevate the operative leg at the same time as the ice application to maximize their effectiveness.

The swelling should recede after ice and elevation or early in the morning prior to your being active and mobile. The swelling will become more pronounced gradually throughout the day toward evening time. Postoperative swelling can take up to one year after surgery to resolve.

Constipation: Constipation is common due to a number of factors, including narcotic pain medications. If taking these medications over-the-counter, non-prescription stool softeners and laxatives, including suppositories and enemas are recommended. Drinking lots of fluids, especially water and fruit juices, is also helpful.

Fever: It is normal to note a low grade fever for 2 weeks after surgery. This is caused by blood in the skin and muscle layers around the surgical site. Blood is an irritant and the body's response is for a slight fever to occur. A fever of 101°F/35.5°C or more should be reported to your surgeon's office for further direction.

Insomnia: Insomnia is a common complaint following your knee replacement. It can last about 6 to 8 weeks. Non-prescriptive remedies such as diphenhydramine (BENADRYL) may be an effective sleep aid. If insomnia continues, prescription medication may be necessary.

Depression: Depression is not an uncommon feeling after joint replacement or any major surgery. Limited mobility, discomfort, increased dependency on others, and medication side effects can be factors that contribute to this feeling. These feelings will typically fade as you begin to return to regular activities. If your feelings of depression persist, consult your family doctor.

r. Long term issues after total joint replacement

How long do I have to follow up? It is important to follow up with your surgeon after your joint replacement. In most cases, joint replacements last for many years. You need to meet with your treating doctor after surgery to insure that your replacement is continuing to function well. In some cases, the replaced parts can start to wear out or loosen. The frequency of required follow up visits is dependent on many factors including the age of the patient, the demand levels placed on the joint, and the type of replacement. Your surgeon will consider all these factors and tailor a follow-up schedule to meet your needs. In general seeing your surgeon every 1-2 years is recommended.

Do I need to take antibiotics for certain procedures and how long? This is a controversial topic. The American Academy of Orthopedic Surgery (AAOS) and American Dental Association (ADA) have generally recommended short term antibiotics prior to dental procedures (1 dose 1 hour prior to dental procedure) for patients with joint replacements. This recommendation continued up to 2 years after the joint replacement. Beyond two years after the replacement, continued use of antibiotics prior to dental procedures has been based on the discretion of the treating surgeon and the patient based many factors including whether or not the patient was at increased risk of infection due to immune suppression (i.e., diabetic, transplant patients, and rheumatoid arthritis). The use of prophylactic antibiotics prior to dental cleanings and other invasive procedures remains controversial. Most orthopaedic surgeons now recommend lifetime suppression. Patients should discuss whether or not they need antibiotic prior to dental or other invasive procedures with their treating orthopedic surgeon.

Will my implant set off metal detectors at airports and courthouses? Usually patients with joint replacements will set off metal detectors. It is reasonable for patients to inform individuals performing screening for metallic objects (i.e., the Transportation Safety Administration- TSA) that they have had a joint replacement. Patients will still require screening and will need to follow the directions of screening agents. It should be noted that there are millions of individuals with joint replacements and screening protocols recognize that patients with joint replacements may set off detectors. No specific documentation is required from patients to prove they have a joint replacement. Metal detector screenings follow universal protocols that allow for individuals with joint replacements to proceed after confirmation.