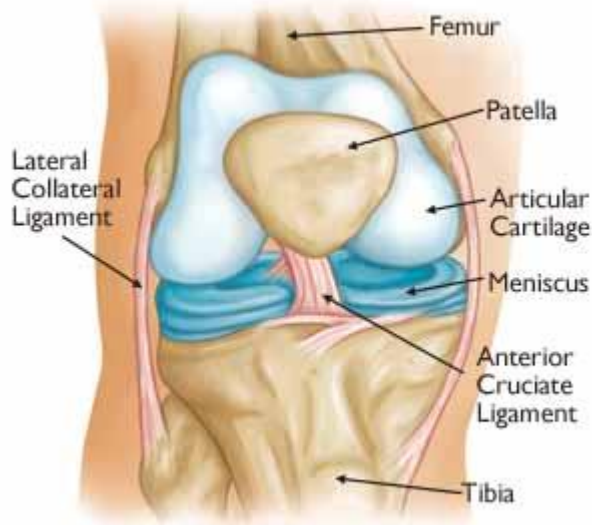




Center for Orthopaedics and Sports Medicine

Total Knee Arthroplasty (Replacement)

Anatomy



Normal knee anatomy.

The knee is the largest joint in the body. Healthy knees are required to perform most everyday activities. Normally, all of the components of the knee work in harmony. But disease or injury can disrupt this harmony, resulting in pain, muscle weakness, and reduced function.

Cause

The most common cause of chronic knee pain and disability is arthritis.



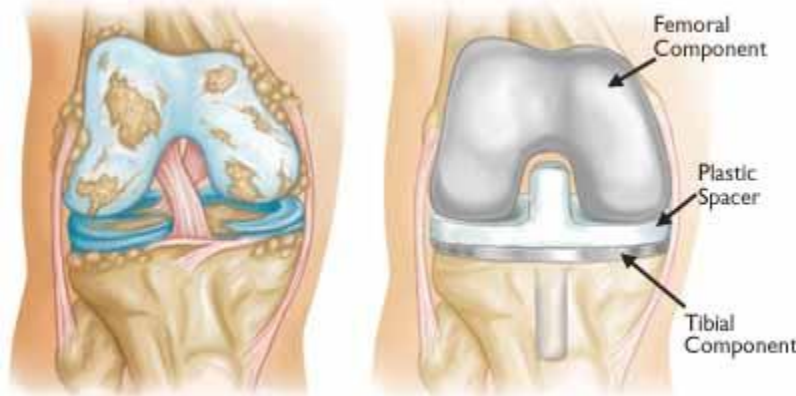
Osteoarthritis, the loss of cartilage, often results in bone rubbing on bone. Bone spurs are a common feature of this form of arthritis.

Description

A knee replacement (also called knee arthroplasty) might be more accurately termed a knee "resurfacing" because only the surface of the bones are actually replaced.

There are four basic steps to a knee replacement procedure.

- **Prepare the bone.** The damaged cartilage surfaces at the ends of the femur and tibia are removed along with a small amount of underlying bone.
- **Position the metal implants.** The removed cartilage and bone is replaced with metal components that recreate the surface of the joint. These metal parts may be cemented or "press-fit" into the bone.
- **Resurface the patella.** The undersurface of the patella (kneecap) is cut and resurfaced with a plastic button. Some surgeons do not resurface the patella, depending upon the case.
- **Insert a spacer.** A medical-grade plastic spacer is inserted between the metal components to create a smooth gliding surface.



(Left) Severe osteoarthritis. **(Right)** The arthritic cartilage and underlying bone has been removed and resurfaced with metal implants on the femur and tibia. A plastic spacer has been placed in between the implants. The patellar component is not shown for clarity.

Is Total Knee Replacement for You?

The decision to have total knee replacement surgery should be a cooperative one between you, your family, your family physician, and your orthopaedic surgeon. Your physician may refer you to an orthopaedic surgeon for a thorough evaluation to determine if you might benefit from this surgery.

When Is Surgery Recommended?

There are several reasons why your doctor may recommend knee replacement surgery. People who benefit from total knee replacement often have:

- Severe knee pain or stiffness that limits your everyday activities, including walking, climbing stairs, and getting in and out of chairs. You may find it hard to walk more than a few blocks without significant pain and you may need to use a cane or walker
- Moderate or severe knee pain while resting, either day or night
- Chronic knee inflammation and swelling that does not improve with rest or medications
- Knee deformity — a bowing in or out of your knee
- Failure to substantially improve with other treatments such as anti-inflammatory medications, cortisone injections, collagen injections, physical therapy, or other surgeries

Candidates for Surgery

There are no absolute age or weight restrictions for total knee replacement surgery. Recommendations for surgery are based on a patient's pain and disability, not age. Total knee replacements have been performed successfully at all ages, from the young teenager with juvenile arthritis to the elderly patient with degenerative arthritis.

Deciding to Have Knee Replacement Surgery

Realistic Expectations

- An important factor in deciding whether to have total knee replacement surgery is understanding what the procedure can and cannot do.
- More than 90% of people who have total knee replacement surgery experience a dramatic reduction of knee pain and a significant improvement in the ability to perform common activities of daily living. But total knee replacement will not allow you to do more than you could before you developed arthritis.
- With normal use and activity, every knee replacement implant begins to wear in its plastic spacer. Excessive activity or weight may speed up this normal wear and may cause the knee replacement to loosen and become painful. Therefore, most surgeons advise against high-impact activities such as running, jogging, jumping, or other high-impact sports for the rest of your life after surgery.
- Realistic activities following total knee replacement include unlimited walking, swimming, golf, driving, light hiking, biking, ballroom dancing, and other low-impact sports.
- With appropriate activity modification, knee replacements can last for many years.

Possible Complications of Surgery

The complication rate following total knee replacement is low. Serious complications, such as a knee joint infection, occur in fewer than 2% of patients. Major medical complications such as heart attack or stroke occur even less frequently. Chronic illnesses may increase the potential for complications. Although uncommon, when these complications occur, they can prolong or limit full recovery.

Discuss your concerns thoroughly with your orthopaedic surgeon prior to surgery.

- **Infection.** Infection may occur in the wound or deep around the prosthesis. It may happen while in the hospital or after you go home. It may even occur years later. Minor infections in the wound area are generally treated with antibiotics. Major or deep infections may require more surgery and removal of the prosthesis. Any infection in your body can spread to your joint replacement.
- **Blood clots.** Blood clots in the leg veins are one of the most common complications of knee replacement surgery. These clots can be life-threatening if they break free and travel to your lungs. Your orthopaedic surgeon will outline a prevention program, which may include periodic elevation of your legs, lower leg exercises to increase circulation, support stockings, and medication to thin your blood.
- **Implant problems.** Although implant designs and materials, as well as surgical techniques, continue to advance, implant surfaces may wear down and the components may loosen. Additionally, although an average of 115° of motion is generally anticipated after surgery, scarring of the knee can occasionally occur, and motion may be more limited, particularly in patients with limited motion before surgery.
- **Continued pain.** A small number of patients continue to have pain after a knee replacement. This complication is rare, however, and the vast majority of patients experience excellent pain relief following knee replacement.
- **Neurovascular injury.** While rare, injury to the nerves or blood vessels around the knee can occur during surgery.

Preparing for Surgery

Medical Evaluation

If you decide to have total knee replacement surgery, you may be asked to get a surgical clearance by your primary care physician prior to surgery. Many patients with chronic medical conditions, like heart disease, may also be evaluated by a specialist, such as a cardiologist, before the surgery.

Tests

Several tests, such as blood and urine samples, and an electrocardiogram, may be needed to help plan your surgery. This will be done at the hospital about a week before surgery. At this appointment the hospital nurse will go over with you what to bring to the hospital including any medications, if needed.

Preparing your skin

Your skin should not have any infections, irritations, or open wounds before surgery. If any are present, contact the office for an appointment for the surgeon to examine it prior to surgery.

Medications

Tell your orthopaedic surgeon about the medications you are taking. The hospital will advise you which medications you should stop taking and which you should continue to take before surgery, at your pre-op appointment. 10 days prior to surgery stop all medications containing Aspirin, Ibuprofen, Aleve, Vitamin E, Fish oil and St. John's Wort. Pain medication and Tylenol are acceptable to continue if it does not include any ingredients listed above.

Dental Evaluation

Although the incidence of infection after knee replacement is very low, an infection can occur if bacteria enter your bloodstream. To reduce the risk of infection, major dental procedures (such as tooth extractions and periodontal work) should be completed 2 months before your total knee replacement surgery.

Home Planning

Several modifications can make your home easier to navigate during your recovery. The following items may help with daily activities:

- Safety bars or a secure handrail in your shower or bath
- Secure handrails along your stairways
- A stable chair for your early recovery with a firm seat cushion (and a height of 18 to 20 inches), a firm back, two arms, and a footstool for intermittent leg elevation
- A toilet seat riser with arms, if you have a low toilet
- A stable shower bench or chair for bathing
- Removing all loose carpets and cords
- A temporary living space on the same floor because walking up or down stairs will be more difficult during your early recovery

The Night Before Your Surgery

The night before your surgery you must not have anything to eat or drink after midnight. To reduce the risk of infection, please shower the night prior to surgery with chlorohexidine gluconate 4% from the neck down (do not use on face and avoid eyes), this soap can be purchased at your local pharmacy.

Doctor's Hospital of Sarasota (DHS) has a program called TLC (Transport, Lodging & Comfort).

For a nominal fee DHS will:

- Arrange transportation for you and a guest to and from the facility the day before surgery.
- Provide a private room for you and your guest, to include a personal computer, movie, popcorn and coffee.
- Dinner in the Concierge Dining Room

Please call (941) 342-3375 for further information or to make arrangements.

Your Surgery

You will be admitted to the hospital on the day of your surgery. Please leave all valuables and jewelry at home. Bring loose comfortable clothing, shoes that are comfortable, easy to put on, and are non-skid. Label any personal belongings that you bring to the hospital (such as your walker).

Anesthesia

After admission, you will be evaluated by a member of the anesthesia team. The most common types of anesthesia are spinal and regional nerve block anesthesia (your body is numb from the waist down) and general anesthesia (you are put to sleep). The anesthesia team, with your input, will determine which type of anesthesia will be best for you.

Procedure

The procedure itself takes approximately 1 ½ hours. During this time, the surgeon will remove the damaged cartilage and bone, and then position the new metal and plastic implants to restore the alignment and function of your knee.

After surgery, you will be moved to the recovery room where you will remain for about an hour while your recovery from anesthesia is monitored. Once you are recovered from anesthesia, you will be taken to your hospital room.

Your Hospital Stay

The average stay in the hospital is between 1 to 2 nights.

Upon discharge you may decide to return home or go to a rehab facility. We feel home is the best place to recover, however if you choose to go to a rehab facility, arrangements can be made.

A case manager at the hospital will visit you during your stay and to arrange all of your future needs. These may include a home health referral, transfer to a rehab facility, medications and/or equipment.

Pain Management

After surgery, you will feel some pain, but your surgeon and nurses will provide medication to make you feel as comfortable as possible. Pain management is an important part of your recovery. Walking and knee movement will begin soon after surgery, and when you feel less pain, you can start moving sooner and get your strength back more quickly. Please tell your nurses if postoperative pain or nausea are occurring.

Physical Therapy and Rehabilitation

Rehabilitation begins immediately in the recovery room. We expect that you will immediately begin pumping your ankle up and down and tightening the quadriceps muscle the front of your thigh. Your first visit with the physical therapist will be on the day of your surgery. We expect that you will be out of bed that day and beginning to transfer and beginning to apply pressure on your newly operated knee. There are 2 simple exercises that must be performed for successful rehabilitation after a total knee replacement. These exercises will begin in the hospital and will continue during your recuperation at home.

Our surgeons have found that early active range of motion gives a better result than the continuous passive motion machine (CPM).

Your Recovery at Home

The success of your surgery will depend in large on how well you follow your instructions regarding home care during the first few weeks after surgery. Recovery time differs for every patient but most people are 80%-90% recuperated within 3 months of surgery. Patients do continue to improve for a year afterwards. We require you to stay locally for a minimum of 7 weeks after surgery.

Home Care

There will be a home health nurse and physical therapist that will come to your home after discharge from hospital. This will continue for 3 weeks after surgery. The home health will begin in your home the day after discharge. The nurse will be instructing you in proper care of your incision area and completing dressing changes to the surgical area as needed, and will remove your staples 1-2 weeks post op. The nurse and physical therapist will be alternating visits to your home. The physical therapist will teach you how to safely maneuver in your home, and how to perform the exercises to strengthen your new knee.

The requirements to continue home health is that the patient is homebound after surgery, except for physician appointments, and must be available for home visits as scheduled.

Wound Care

You will have staples running along your incision. They will be removed approximately 2 weeks after surgery by the home health nurse or rehab facility nurse.

You may shower as soon as you return home. The dressing applied at the hospital is water resistant. It is best to shower using the same soap given to you prior to your surgery. The nurse will change your bandage as needed. You may get the incision area wet after the staples are removed and the incision is sealed.

Diet

Some loss of appetite is common for several weeks after surgery. A balanced diet is important to promote proper tissue healing and restore muscle strength. Be sure to drink plenty of fluids. Try to eat a bowl of All Bran, or similar high fiber cereal, every day to help prevent constipation.

Activity

Exercise is a critical component of home care, particularly during the first few weeks after surgery. You should be able to resume most normal light activities of daily living within 3 to 6 weeks following surgery. Some discomfort with activity and at night is common for several weeks. It is normal to have a sensation of increased warmth and slight stiffness for up to 12 weeks after surgery.

Your activity program should include:

- A graduated walking program to slowly increase your mobility, initially in your home and later outside
- Resuming other normal household activities, such as sitting, standing, and climbing stairs
- Specific exercises several times a day to restore movement and strengthen your knee. You probably will be able to perform the exercises without help, but you will have a physical therapist help you at home for the first few weeks after surgery.

Avoiding Problems After Surgery

Blood Clot Prevention

Follow your orthopaedic surgeon's instructions carefully to reduce the risk of blood clots developing during the first several weeks of your recovery. Notify your doctor immediately if you develop any of the following warning signs.

Warning signs of blood clots. The warning signs of possible blood clots in your leg include:

- Increasing pain in your calf
- Tenderness or redness above or below your knee
- New or increasing swelling in your calf, ankle, and foot

Warning signs of pulmonary embolism. The warning signs that a blood clot has traveled to your lung include:

- Sudden shortness of breath
- Sudden onset of chest pain
- Localized chest pain with coughing

Preventing Infection

A common cause of infection following total knee replacement surgery is from bacteria that enter the bloodstream during dental procedures, urinary tract infections, or skin infections. These bacteria can lodge around your knee replacement and cause an infection.

Warning signs of infection. Notify your doctor immediately if you develop any of the following signs of a possible knee replacement infection:

- Persistent fever (higher than 100°F orally)
- Shaking chills
- Increasing redness, tenderness, or swelling of the knee wound
- Drainage from the knee wound
- Increasing knee pain with both activity and rest

Dental Evaluation

Although infections after knee replacement are not common, an infection can occur if bacteria enter your bloodstream. We recommend you wait until 2-3 months after surgery before having routine dental procedures performed. The American Academy of Orthopaedic Surgeons (AAOS) recommends taking preventative antibiotics before dental work (including cleanings). This prescription can be provided by our office or the dentist. This recommendation is indefinite.

Avoiding Falls

A fall during the first few weeks after surgery can damage your new knee and may result in a need for further surgery. Stairs are a particular hazard until your knee is strong and mobile. You should use a cane, crutches, a walker, hand rails, or have someone to help you until you have improved your balance, flexibility, and strength.

Your surgeon and physical therapist will help you decide what assistive aides will be required following surgery and when those aides can safely be discontinued. Typically, patients begin with a walker, then advance to a cane, then no assistance. The interval varies by patient, but is usually between 2 to 6 weeks.

Outcomes

How Your New Knee Is Different

Improvement of knee motion is a goal of total knee replacement, but restoration of full motion is uncommon. The motion of your knee replacement after surgery can be predicted by the range of motion you have in your knee before surgery. Most patients can expect to be able to almost fully straighten the replaced knee and to bend the knee sufficiently to climb stairs and get in and out of a car. Kneeling is sometimes uncomfortable, but it is not harmful.

Most people feel some numbness in the skin around the incision. You also may feel some stiffness, particularly with excessive bending activities.

Most people also feel or hear some clicking of the metal and plastic with knee bending or walking. This is normal. These sensations often diminish with time and most patients find them to be tolerable when compared with the pain and limited function they experienced prior to surgery.

Your new knee may activate metal detectors required for security in airports and some buildings. Tell the security agent about your knee replacement if the alarm is activated. There are no documents that will let you bypass the TSA.

Protecting Your Knee Replacement

After surgery, make sure you also do the following:

- Participate in regular light exercise programs to maintain proper strength and mobility of your new knee.
- Take special precautions to avoid falls and injuries. If you break a bone in your leg, you may require more surgery.
- Make sure your dentist knows that you have a knee replacement. We recommend that you take antibiotics prior to dental procedures, including cleanings.
- We recommend that you see your orthopaedic surgeon periodically for a routine follow-up examination and x-rays, approximately one year after your knee replacement.

Extending the Life of Your Knee Implant

Currently, more than 90% of modern total knee replacements are still functioning well 15 years after the surgery. Following your orthopaedic surgeon's instructions after surgery and taking care to protect your knee replacement and your general health are important ways you can contribute to the final success of your surgery.

Frequently Asked Questions

Q: When may I drive after surgery?

A: You may drive between 3 and 6 weeks after surgery depending on your progress and the recommendation of your surgeon. This can be evaluated at the 3 week post-op appointment.

Q: When may I swim?

A: You may enter the pool 24 hours after the surgical staples have been removed from your incision. Initially, we recommend that you use only a pool that has steps and a railing so that you can safely enter and exit the pool. We recommend walking back and forth in the pool in water that is between the waist and chest depth. As you gain strength and confidence, you may begin gentle swimming according to how you feel. We ask you avoid going into the ocean until approximately 8 weeks after surgery.

Q: I am having itching, nausea, vomiting and constipation and I am concerned that I am having an allergic reaction?

A: These are common side effects of anesthesia and pain medication. There are medications that can be given to help relieve these symptoms, please notify the nurse or surgeon should you have any of these symptoms

Q: When may I go on vacation or to my northern home after surgery?

A: Our surgeons require waiting a minimum of 7 weeks before leaving the area.

For further questions visit our website @ www.veniceorthopaedics.com or call (941) 497-2663.