



What is a total knee replacement?

If you and your surgeon have exhausted all non-surgical measures for treating your knee pain and inflammation, you might be a candidate for total knee replacement. This procedure is often the only option for restoring an active, pain-free life. If your surgeon does decide that this is the best option for you, the following information will give you an understanding of what to expect.

The purpose of knee replacement surgery is to cut away the damaged bone of the knee joint and replace it with smooth, artificial implants known as prostheses. This prevents the bones from rubbing together and provides a smooth knee joint.

The implant

Some questions you probably are thinking about are: what kind of implant device you will be receiving, what is it made of, and why is your surgeon using a particular kind of device? If you haven't discussed this with your surgeon, you should, because not all knee implant devices are made of the same material.

Due to significant advancements in technology, there is a new material for knee implant devices called OXINIUM[®] Oxidized Zirconium that has proven to be a superior metal for use in knee replacements. Because of its hardness, smoothness and resistance to scratching, OXINIUM[®] materials may last longer and exhibit superior performance characteristics over the alternative material option, cobalt chrome. Ask your surgeon about an OXINIUM[®] knee implant and if it is the right implant option for you.

In total knee replacement, each prosthesis is comprised of four parts. The tibial component has two elements and replaces the top of the shinbone (tibia). This prosthesis is made up of a metal tray attached directly to the bone and a plastic spacer that provides the bearing surface.

The femoral component then replaces the bottom of the thighbone (femur). This component also replaces the groove where the kneecap (patella) sits. The patella component replaces the surface of the kneecap, which rubs against the thighbone. The kneecap then protects the joint and the resurfaced patellar button slides smoothly on the front of the knee joint.

How do you prepare for surgery?

Successful surgery is always a cooperative effort between you, the orthopaedic surgeon and the people who help you recover from surgery. You have a very important role in preparing for your knee replacement surgery. Ask your orthopaedic surgeon if a Joint Replacement Class is available through the surgeon's office or the hospital. The class will teach you how to care for your new knee and what to expect while you are in the hospital. You will also learn about the equipment you will be using after surgery and safe methods for walking and getting out of bed. It is very helpful to have a family member or friend attend the class with you.

Prior to your knee replacement surgery be sure to ask about all of the following:

- Pre-operative procedure
- Getting your house ready before your surgery
- Help at home
- Preparation for the hospital

Pre-operative procedure

To prepare, you and your surgeon may participate in an initial consultation during which you will discuss pre-operative X-rays, complete medical history, physical examination and a review of medications and allergies. During this visit, your surgeon will most likely review your knee replacement procedure and answer any questions you may have. In addition, your orthopaedic surgeon may also require that you have a complete physical examination by your internist or family physician, as you will need to be cleared medically before undergoing this extensive procedure. Your surgeon may also ask that you donate your own blood in case you need it during surgery or post-operatively.

Your surgeon may also ask you to consult with a physical therapist to discuss recovery, a knee rehabilitation program and important precautions you must take after your surgery. Finally, your orthopaedic surgeon and hospital may require that you visit the admissions department prior to surgery to pre-certify your knee replacement procedure with your insurance company.

Getting your house ready before your surgery

Since you will be spending a lot of time at home following your hospital stay and your movements will be restricted, there are a few things you should do to make life as easy and safe as possible for when you arrive home. Some of them may seem obvious but nevertheless they are worthy of your attention in advance just as a precaution. For starters, you should arrange furniture and household items for maximum convenience during your rehabilitation. Remove throw rugs or anything else that could cause you to slip or trip. Move electrical and phone cords closer to walls. Add extra cushions to your couches and chairs for comfort. This will ensure that you will be sitting high enough to accommodate your new knee and will help make it easier to get up from a sitting position. Finally, arrange to have an elevated toilet seat or support bars fitted for your bathroom when its time to leave the hospital.

Help at home

The nurse assisting you and your family can offer home healthcare or alternative living sources and information. Plan time to visit the facilities in your area to find one that best suits your needs if the discharge plan is to spend a week or so in an extended care facility.

Preparation for the hospital

Here are a few things to keep in mind as you pack and prepare for the hospital.

Clothing:

Getting dressed in the morning helps you feel better, so be sure to bring some comfortable clothing to the hospital:

- Loose shorts or pants
- Loose tops or t-shirts
- Underwear and socks
- Short robe or pajamas
- Toiletries

Shoes:

Bringing proper shoe wear to the hospital is important. Choose a shoe with a closed heel or less than one inch. Gym shoes and walking shoes are fine.

Walking aids:

If you are currently using a walking aid (walker, cane, wheelchair or crutches) bring it with you to the hospital.

Days before surgery

In the days before surgery follow your regular diet and try to get long, restful nights of sleep. In the days leading up to your surgery, your doctor will provide a list of instructions regarding medication use. In some cases, a blood thinner may be ordered a few days before surgery. Aspirin and non-steroidal anti-inflammatory medications should generally not be taken seven days prior to surgery.

The night before surgery, do not eat or drink after midnight. You may have a few sips of water, if needed, to take medications. On the morning of surgery, you may brush your teeth and rinse your mouth, but do not swallow any water.

Day of surgery

Once admitted to the hospital on the day of surgery, you will be taken to the appropriate pre-surgical area where the nursing staff will take your vital signs, start intravenous (IV) fluids and administer needed medications.

You will then be asked to change into a hospital gown and remove all jewelry, contacts, glasses, dentures and even nail polish. Then you will be placed on a cart and transported to the operating room area. The anesthesiologist will meet you there and review the medications and procedures to be used during surgery. An IV will be inserted and final preparations for your surgery are made.

After Total Knee Replacement Surgery

What do you do after surgery?

In this section, we will discuss a few things you need to know in regard to surgery and recovery. We will cover some common hospital protocols as well as precautions your doctor and staff will be taking to avoid complications which can result from surgery.

- Surgery and recovery
- Post-operative care and precautions
- Rehabilitation after total knee replacement surgery
- Hospital discharge and home instructions
- Life after total knee replacement surgery

Surgery and recovery

Once your surgery is complete, you will be taken to a recovery room for a period of close observation. Your blood pressure, heart rate, respiration and temperature will be closely monitored with special attention given to the circulation and sensation in your feet and legs. Once you awaken and your condition is stabilized, you will be transferred to your room.

While protocols differ from hospital to hospital, here is a list of things you may see when you wake up:

- A large dressing applied to the surgical area
- A drain tube leading into the surgical area
- An IV will continue to be used to provide adequate fluids and administer antibiotics and other medication
- A catheter may have been inserted into your bladder as the side effects of medication often make it difficult to urinate
- A continuous passive motion (CPM) unit may be placed on your leg to slowly and gently bend and straighten your knee, to help more quickly regain your knee range of motion

A patient-controlled analgesia (PCA) device connected to your IV for pain relief

Post-operative care and precautions

As with any major surgical procedure, knee complications can occur following knee replacement surgery. The following is a list of some of the complications with a brief description of each.

Deep vein thrombosis

Deep vein thrombosis occurs when blood clots are formed in the larger veins of the legs. In some cases, these clots may dislodge from the veins, travel through the circulatory system and become stuck in critical arteries of the lungs. The following precautionary steps may be taken by you and your physician to prevent deep vein thrombosis:

- Blood thinning medication, such as aspirin or anticoagulants
- Support stockings (TED hose)
- Foot elevation to prevent swelling
- Pneumatic devices placed on the feet to improve circulation

Infection

In a small percentage of patients undergoing knee replacement surgery infection can occur. Your physician will be able to minimize the risk of infection by closely monitoring the incision and looking for any signs of redness, swelling or other indications. Always remember to wash your hands after any contact to the incision site, especially when the sutures are still in place.

Pneumonia

A possible side effect of surgery is the development of pneumonia. The following steps may help minimize the risk.

Deep breathing exercises: A simple analogy to illustrate proper deep breathing is to “Smell a Rose and Blow Out the Candles.” In other words, inhale slowly and deeply through your nose and exhale slowly through your mouth at a slow and controlled rate. A simple rule of thumb may be to perform these deep breathing exercises eight to 10 times every hour.

Coughing: This activity helps to loosen the secretions in your lungs and excrete them from your pulmonary system.

Incentive spirometer: This simple device provides visual feedback while performing deep breathing exercises. Your nurse or respiratory therapist will demonstrate the proper technique.

Knee stiffness

In some cases the mobility of your knee following surgery may be significantly restricted. You may develop scar tissue in your knee that will cause stiffness during walking and other activities. The following steps may be taken to maximize your range of motion following surgery.

- Strict adherence to a continuous passive motion (CPM) protocol as prescribed by your orthopaedic surgeon
- Early physical therapy to begin range of motion exercises and walking program
- Edema control to reduce swelling using ice, support stockings (TED hose) and elevation
- Adequate pain control so you can tolerate the rehabilitation treatment

Rehabilitation after total knee surgery

Perhaps the most critical factor in achieving successful knee replacement surgery depends on your approach and diligence in physical rehabilitation. It is important that you actively participate in every aspect of this process, working on your own and with your physical therapists to achieve the best results.

The physical therapists will begin working with you as early as one to two days after surgery. They will teach you simple exercises that can even be performed in bed to strengthen muscles in the knee and lower extremity. These exercises may include:

- Ankle pumps: Flex and extend the ankles
- Quadricep sets: Tighten and relax the thigh muscles
- Heel slides: Flex your hip and knee. Return knee to the straight position
- Leg lifts: Raise leg six inches above mat, keep knee straight
- Knee extension: Place a pillow under your knee. Lift your foot off the mat

Your physical therapists will also teach you the following proper techniques for performing daily activities. Although these activities may seem simple, you must learn to do them safely so you do not suffer other injury.

- Get in and out of bed
- Walk down the hall using your walker or crutches
- Manage steps at home
- Bend your knee 90 degrees and straighten your knee

An occupational therapist will teach you how to safely perform activities needed in daily life and will also provide you with a list of knee precautions that are designed to protect your new knee during the first eight to 12 weeks following knee surgery. The occupational therapist will also instruct you in the proper use of various long-handled devices that will assist you in your daily life activities. These devices may include the following:

- A reacher to dress and pick things up off the floor
- A sock-aid to assist in putting on socks
- A long-handled sponge to wash your legs and feet
- A leg-lifting device to move the operated leg in and out of the car or bed
- An elevated toilet seat for when using the bathroom
- An elevated bathtub chair to fit in the shower or tub

Hospital discharge and home instructions

Before leaving the hospital, your doctor and staff will help you adjust to recovery in every way possible. They will show you safe techniques of simple activities like getting in and out of bed, going to the bathroom, managing steps at home and getting in and out of a car.

Progress varies from patient to patient, so discharge instructions may also vary. You will receive specific precautions from your orthopaedic surgeon, nurse and physical therapist.

- You will be using a walker or crutches to assist with walking. Ask your surgeon how much weight you can put on your operated leg
- Wear your TED hose
- Your surgeon will talk to you about when you can drive; generally it is six to eight weeks after surgery
- Continue the exercise program you learned while in the hospital

Life after total knee replacement surgery

Once you have completed the post-operative knee rehabilitation process, you should have near-normal range of movement and adequate strength in your knee to perform most activities of daily living. Patients having knee replacement surgery have successfully returned to walking, driving, swimming, golf, doubles tennis, cycling and gardening. However, special precautions should be taken. Avoid high-impact activities like running, vigorous walking and downhill skiing. Remember to listen to your body. If you have pain or swelling, contact your healthcare professional for advice.