

REVISION TOTAL KNEE REPLACEMENT

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CMC-Lincoln has earned the Joint Commission's Gold Seal of Approval for Disease-Specific Certification by demonstrating compliance with the Joint Commission's national standards for healthcare quality and safety in hip and knee replacement. The certification recognizes CMC-Lincoln's outstanding performance and commitment to a higher level of care.

Introduction

You have been diagnosed with a total knee replacement that necessitates revision surgery. It is important to note that revision total knee replacement surgery is different than your initial knee replacement surgery. A combined effort is required by both the orthopedic surgeon and the patient in order to obtain an optimal result. There are some risks involved. It is important that before this operation is considered, the patient must have a good understanding of what the operation entails, have reasonable expectations, and a strong commitment to work toward recovery. In an effort to help you understand the operation, we have compiled important information in this booklet.

There are many reasons for revision surgery and these will be discussed with you by your doctor. Revision surgery should be considered as a salvage procedure. Most often, pain can be significantly reduced and function improved. In all, you should expect that your rehabilitation may take longer than initial knee surgery.

The objectives of revision total knee replacement are:

1. To reduce pain
2. To provide more stability
3. To improve quality of life

Your Current Knee

Your knee has been previously replaced by metal and plastic implants that have been secured to the bone with or without cement. The lower end of the thigh (femur) bone has been resurfaced with a metal implant. The upper end of the leg (tibia) bone was replaced with a plastic and metal implant. The back of the kneecap (patella) has typically been resurfaced with a plastic implant. The surrounding muscles and most of the ligaments were maintained to hold the knee together.

These implants are typically secured to the bone with cement. In revision surgery, once the implants are removed, some of the cement often remains attached to the bone. The cement will be removed by your surgeon, a process that is tedious and time-consuming. Additional bone loss may occur during the removal of cement.

It is important to consider the possibility of infection with revision surgery. During surgery, a specimen will be sent to the Pathology Department for evaluation. If the results indicate an infection, the current knee replacement will be removed and replaced with a temporary artificial knee containing antibiotics. Once the infection is cured (treatment usually takes a few months), an additional procedure will be required to complete the revision knee replacement.

Revision Total Knee Replacement Implants

Because bone loss has often taken place, it is not always possible to use standard total knee implants for a knee replacement. Your physician may use special revision implants which utilize more stable metal rods that are inserted into the bone canal to stabilize the replacement joint.

Your knee implant is held into place by bone cement, which allows the replacement joint to fit perfectly into the irregularities of the existing bone. This method of fixation is the gold standard in knee replacements today. The advanced implants that will be used for your knee replacement utilize oxidized zirconium, an alloy that is proven to be more durable than materials previously used for replacement joints. Examples of these implants are available in your physician's office..



Potential Complications

All surgeries have potential risks. Complications from revision total knee replacement sometimes occur despite every necessary precaution taken from your surgical team.

The average total risk for an acute complication is less than five percent, meaning that the typical patient has 95 percent chance of a complication-free procedure. A complete medical checkup should be scheduled prior to surgery to assess your medical risks. Potential risks include the following:

Infection

Infection is one of the most serious complications that can arise with knee replacement surgery. The risk of infection is higher with revision surgery than with the initial knee replacement procedure. You will be administered antibiotics prior to and immediately following your procedure to help reduce the likelihood of infection. It is important to let your doctor know about any antibiotic or drug allergies that you may have.

Intra-operative Complications

Rare intra-operative complications include bone fracture with possible non-healing of bone and injury to nerves, blood vessels or ligaments around the knee. Other surgical risks include, but are not limited to, hematoma, loss of range of motion, and instability.

Other Potential Complications

Possible medical complications include blood clots (deep vein thrombosis), blood clots that migrate to the lungs (pulmonary embolism), fat globules migrating to the lungs or brain (fat embolism), allergic conditions, inability to pass urine (urinary retention), bowel distension (ileus), constipation, acute pain, heart attack or other cardiac problems, lung problems, and very rarely death.

Potential Long-term Medical Issues

As with any joint replacement procedure, total knee replacement surgery carries the risk of long-term medical issues. These include infection traveling to the knee from other sources in the body, reflex sympathetic dystrophy, chronic pain, chronic leg swelling or edema, wear and tear of the plastic component, bone reaction to the debris, or loosening of the implant. Most total knee implants will wear and eventually loosen after time or excessive stress. Therefore, it is important for the patient to comply with the postoperative activity modifications.

Of course, one alternative to total knee replacement is not to have surgery at all. A course of oral anti-inflammatory drugs, rest, weight reduction, special exercises, and activity restriction to protect the joint may decrease pain and stiffness in some individuals. However, if none of these measures seem to help and your lifestyle is significantly compromised, surgery is most likely the best option.

Preoperative Preparations and Procedures

You may be able to minimize the length and difficulty of your recovery by doing the following prior to surgery.

- If you are overweight, you should make every effort to lose weight prior to surgery. If you are significantly overweight, it may be advisable to postpone the procedure until you are able to reduce your weight by a significant amount. Being overweight markedly increases the possibility of a wound complication or infection. Infections in joint replacements cannot be successfully treated without several additional surgeries. Losing weight can also minimize the amount of stress placed on your replacement joint. For every pound you lose, your knee will absorb between two and two and a half fewer pounds of pressure as you walk. Avoid 'crash diets' prior to surgery since you may become malnourished, increasing the risks associated with surgery. Talk with your doctor about your diet options.
- Smoking increases the potential for respiratory problems after the surgery and slows the body's healing process. Smoking less, or better yet quitting altogether, can greatly improve the recovery process.

Prior to surgery, you will need to stop taking blood thinning medications such as aspirin, Plavix, Aggrenox, Ticlid, or other anti-inflammatory medications. The timing of this will be discussed with your surgeon and primary doctor/cardiologist. If you currently take Coumadin, your primary doctor or cardiologist may elect for you to take an injectable blood thinner prior to surgery. Many herbal supplements, including vitamin E, ginkgo biloba and garlic also increase the risk of bleeding. These too should be stopped two weeks before surgery. A multivitamin is safe to continue up to surgery.

If you note any signs of a respiratory infection such as a cough, runny nose, urinary tract infection, skin infection, or elevated temperature before surgery, please notify your doctor. It may be necessary to postpone your surgery to minimize the risk of potential infection.

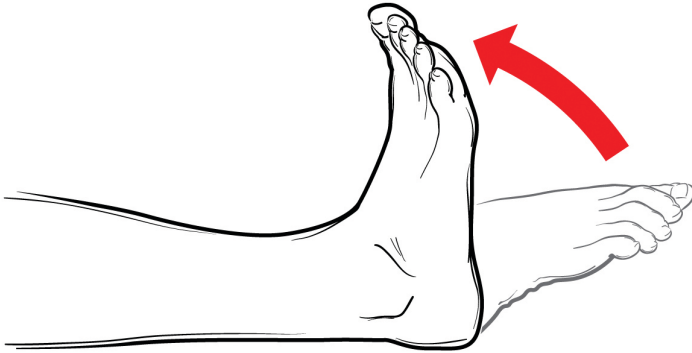
Medical Clearance

To assure that you are healthy enough to undergo your revision total knee replacement surgery, it is necessary to have a medical evaluation and medical clearance by your primary care physician or cardiologist. Medical clearance appointments should ideally be scheduled about a month before surgery. This provides time for additional testing if it is required. Your doctor may choose to do some of the blood tests, X-rays, and/or electrocardiogram in order to clear you for surgery. Otherwise, these procedures may need to be done in the hospital.

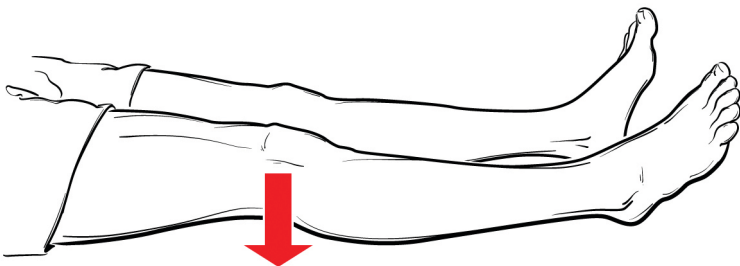
Preoperative Exercises

Prior to your knee surgery, it is very important that you maintain the range of motion in your knee and strengthen the muscles as much as possible. The following exercises should also be performed after surgery. The stronger your muscles are before surgery and the more familiar you are with your exercise program, the easier and shorter your rehabilitation will be. These exercises should be done within the limits of your motion and pain tolerance. Also, these should be done twice a day, beginning with 10 repetitions of each exercise and progressing to 20 repetitions.

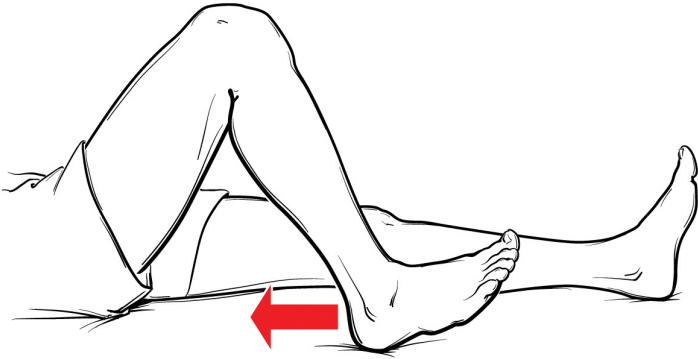
Ankle Pumps: Move both ankles up and down like you are pushing the gas pedal of a car.



Quadriceps Sets: Tighten the muscle in the front of the thigh (quadriceps) by pushing the back of the knee down into the bed while keeping the knee as straight as possible. Hold for 10 seconds.



Hamstring Sets: While lying in bed, bend your knee about 20 degrees towards the ceiling while digging your heel in the bed. Hold for 10 seconds.



Straight Leg Raise: While lying on your back with your foot pointed straight up and your knee straight, lift your foot about 12 inches off the bed. Hold for a count of 10. Add weight as tolerated.



Preparing Your Home

Prior to your surgery, you may want to make some preparations in your home to ease the recovery process. Start by reducing household hazards, removing any throw rugs and objects from the floor and hiding any electrical cords to prevent falls. You may also want to stock up on food items at home to limit the need to go to the store. Arrange for friends and family members to assist you in preparing meals, doing laundry and completing other household chores.

In addition, place objects that you will routinely use within easy reach. Do not place objects on the floor or in high cabinets. Also, arrange so that you can minimize your need to climb the stairs until you are further along in your rehabilitation. You may also want to plan on setting up a bedroom for yourself on the main floor.

Patients are not permitted to drive until cleared by their physician, so please also plan to have a friend or family member drive you to your doctor's appointments and other locations.

Packing For Your Hospital Stay

When packing for your hospital stay, you should include a pair of shoes with non-skid soles such as sneakers or tennis shoes, toiletries that you would prefer to use, and a leisure hobby such as a book or crossword puzzles. Some people also like to bring pajamas or a robe.

Do not bring your medications from home with you. Medications will be given to you from the hospital pharmacy. Also, do not bring any valuables, including jewelry. Lastly, be sure to bring your glasses or contact lenses.

The Surgical Procedure and Hospital Stay

You will be admitted to the hospital the morning of the surgery. The hospital will advise you on when to arrive. Time of surgery will vary depending on the procedure and the amount of damage in the knee. Due to anesthesia, total procedure time will be roughly three hours, depending on complications.

Following the operation, you will be in the recovery room for an hour to several hours, depending on your recovery. You will have an intravenous (IV) line in your arm for fluids. An intravenous line will be inserted into your arm for fluids while a small tube will be inserted into the knee for drainage. Patients often feel tired or groggy for several hours after awakening from general anesthesia. If a spinal anesthetic was used, the sensation in your legs will recover over several hours. In some patients, other types of nerve blocks may be left in the leg to help control pain.

You will be administered a combination of pain management medications designed to minimize your discomfort. There will be scheduled IV injections and oral medications, while additional medication will be available on an "as-needed" basis from your nurse. Prior to discharge, you will be administered only oral medications, and a prescription will be given to you prior to going home for these same medications.

The IV line will be kept in to provide antibiotics, fluids, and medications. A urinary catheter will be inserted while you are in the operating room and removed the first morning after surgery. The dressing on your knee as well as tube for drainage is usually removed in the morning of the second day following surgery.

You will have a blood sample drawn daily to monitor your blood count and other values, while a blood thinner pill or injection will be used to help prevent blood clots. Support stockings will be used on both legs. Also, mechanical calf pumps may be used to stimulate blood flow. All of these measures in addition to aggressive physical therapy are designed to reduce the rate of blood clots.

An internal medicine physician or family physician will accompany you during your stay to assist with your non-surgical medical care.

Physical Therapy

Your physical therapy program begins almost immediately after surgery. You will typically start therapy by performing the same exercises assigned to you prior to your surgery. On the day of surgery or the first day after surgery, you will start to work with a physical therapist. This will also be your first attempt at bearing weight on your new knee. While your physician or therapist will most likely allow you to bear weight on your new knee immediately following surgery, there are exceptions. Your therapist will instruct you on the proper way to walk, how to get in and out of bed, getting in and out of a chair, how to climb steps with minimal pain, and other aspects of daily living. The therapist will also evaluate your range of motion and assist you in certain exercises.

Your goals with physical therapy prior to hospital discharge:

1. Independent walking on a flat surface with a walker
2. Independent and safe bed, chair, and automobile transfers
3. Stair climbing (if necessary)
4. Near 90 degrees of knee flexion
5. Near full knee extension
6. Proper performance of exercises

Hospital Discharge and Follow-up

Most patients will be deemed ready for discharge after a stay of two to three days. If you live alone or feel that you will be unable to care for yourself at home, arrangements will be made for you to be transferred to a rehabilitation or nursing facility. These arrangements will be made by members of social services at the hospital including discharge planners, case managers, and social workers. If you are discharged home, arrangements will be made for either a physical therapist to come to your home or for outpatient physical therapy to continue your rehabilitation (see guide provided in this booklet.)

You will be discharged from the hospital when you:

1. Have mastered the above therapy goals
2. Have no fever
3. Report minimal pain
4. Are medically stable
5. Have a benign-appearing incision

As part of your discharge, you will be given instructions and prescriptions for your pain medication and administered a blood thinner to prevent blood clots.

Typically, your incision will be closed with a suture underneath the skin, similar to a plastic surgery closure. However, on occasion it may be necessary to use skin staples or other measures to close the wound. Until your sutures are removed, you should avoid getting your incision wet. While inconvenient, keeping the wound dry allows it to heal as quickly as possible.

Approximately two to three weeks after surgery, you will have a follow-up appointment with your doctor. At this time, you will have your sutures removed, X-rays taken, and your therapy progress evaluated. Once your sutures are removed, you will be able to take a shower. Patients should not submerge the wound in a bath or pool until at least a month following the surgery. The elastic compression stockings will need to be worn for a month from the day of surgery on both legs.

One of the most important things to understand is the importance of straightening your knee. A straight knee is vital for proper walking and standing in place. This needs to be kept in mind as far as your rehabilitation goes, especially in the first couple of weeks.

Your range of motion will be evaluated again at a follow-up visit six weeks after surgery. If the doctor deems your range of motion to be less than satisfactory, he may advise a manipulation under anesthesia, where your physician will help you regain range of motion by forcibly bending your knee while you are sedated. This involves your doctor forcibly bending your knee while you are sedated in an attempt to regain your motion. While total knee replacement is usually an effective procedure, there is no guarantee that you will regain full range of motion. Physical therapy is still a necessity regardless of the outcome. Overall, poor range of motion will prolong your rehabilitation course.

Here is some additional information regarding your post-operative course:

- It is recommended that you avoid driving until you are cleared by your doctor
- Please report any changes in the appearance of your incision including drainage, redness, or increased swelling.
- If you experience an increase in pain, an inability to bear weight on the knee, the inability to move the knee or a fever of more than 101 degrees, please contact your doctor.
- Wear the elastic compression stockings for a month from surgery. Stockings may be removed at night.
- Please refrain from getting your incision wet in the shower until directed to do so by your doctor, which is typically after your sutures are removed.
- Refills on pain medication prescriptions will not be handled after office hours, at night, or on the weekends. Please plan ahead and be sure to have your prescription refilled prior to running out of medication.

Living With Your New Knee

The metal in your replacement may trigger metal detectors at security checkpoints. You will receive an identification card to carry with you to help communicate with the security personnel that you have had a joint replacement. It should be noted that showing this card to authorities will not necessarily preclude you from further precautionary security measures, so it is recommended that you allow for extra time when you travel.

Total knee implants can become infected by bacteria in the bloodstream at any time, even many years after your knee surgery. This can occur if you develop an infection elsewhere in the body. Any dental work, including routine cleanings, can put you at risk. We recommend that patients take a dose of antibiotics prior to any dental procedures to minimize this risk. Some dentists will gladly give you a prescription, but if not, we will be more than willing to give you one. While some dental professionals feel it is unnecessary to administer these antibiotics, it is the position of the American Association of Orthopaedic Surgeons that these antibiotics are taken prior to any invasive procedures to minimize the risk of infection. This is not limited to dental work, and also applies to urinary procedures (including catheterizations) and surgical procedures. If there is any question, please contact your doctor.

The antibiotics typically used are:

- Amoxicillin 500mg, four tablets one hour prior to the procedure
- Clindamycin 300mg, two tablets one hour prior to the procedure (for those with penicillin allergies)

For urologic procedures:

- Ciprofloxacin 500mg, one tablet one hour prior to procedure

Routine follow-up visits for joint replacement patients will be:

- Two weeks after surgery
- Six weeks after surgery
- Three months after surgery
- One year after surgery
- Then every one to three years for routine follow-up visits

The purpose of these yearly visits is to identify potential problems that may be asymptomatic, including early wear or loosening of the implant. These problems are easier to treat when identified early. Your doctor will discuss this with you should any problems be identified.

If you have any questions, please feel free to contact our office or you may address them with your doctor at your next appointment.

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