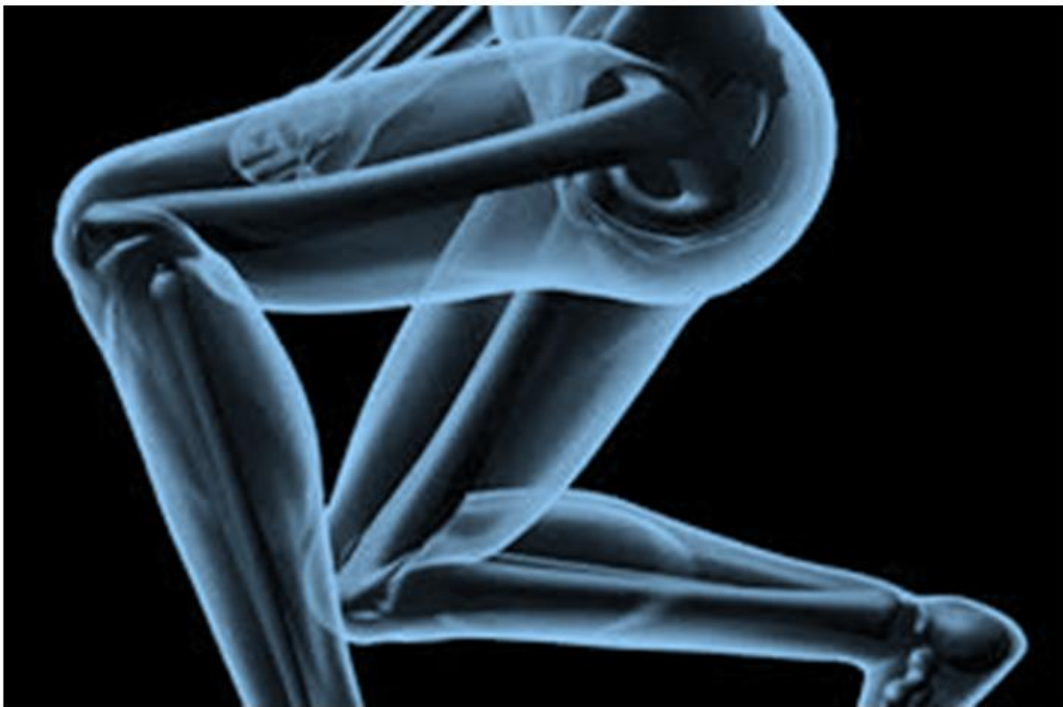




North Carolina  
Specialty Hospital

# Total Hip & Knee Surgery Patient Guide



“Our Specialty is You”

# Total Joint Class is Mandatory for Total Joint Surgery



Classes are offered the 1st and 3rd  
Tuesday of the Month at the NCSH  
Hospital.

Please call (919) 595-8469 to  
schedule your class.

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# **North Carolina Specialty Hospital (NCSH) Total Knee & Hip Replacement Program**

Welcome to NCSH Knee/Hip Replacement Care Plan. This care plan is designed to guide you through your surgical experience, with information on your joint replacement surgery, answers to frequently asked questions, and any other information you need when you need it.

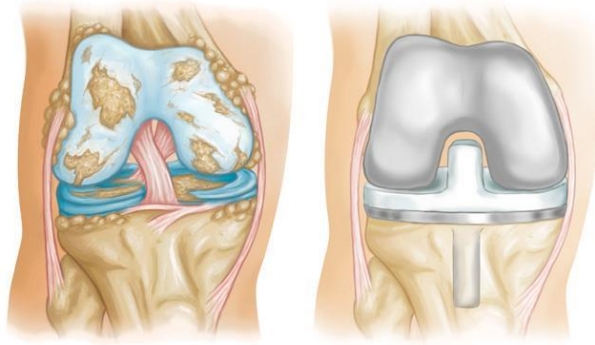
## **Knee/Hip Replacement Overview**

Total knee/hip replacement surgery can be life-changing for patients suffering from arthritis. Understanding all the steps involved in total knee/hip replacement can be very difficult. However, this guide is designed to teach you about the steps of having a knee/hip replacement and will help answer many of the questions you may have about surgery, giving you a better idea of what having a knee/hip replacement is like. You can come back to this guide time and time again as you proceed through the steps of getting your knee/hip replaced to find answers to most of your questions.

More than 600,000 knee/hip replacements are done every year in the United States. It is a safe and effective surgery that has been around since the late 1960's. Most patients have improvement with their arthritis pain and can get back to their normal activities.

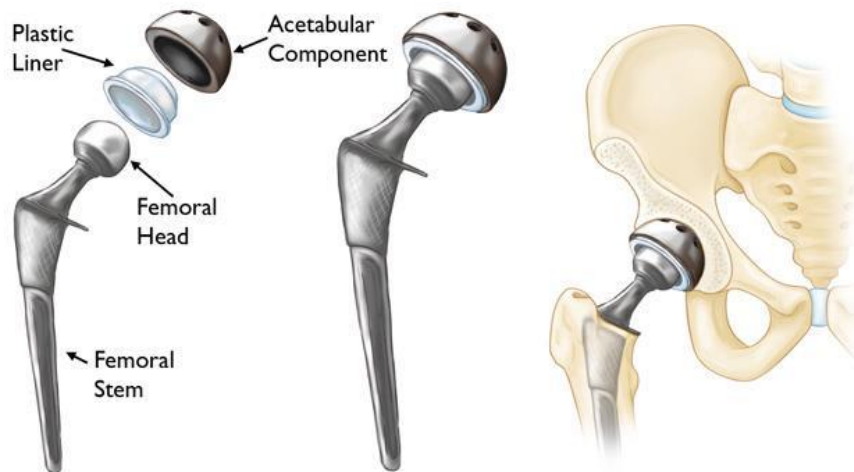
## **About Your Knee Surgery**

The term knee replacement is misleading to most because the knee is not completely removed and replaced. The metal implant or "knee prosthesis" is put in place over the surfaces where the bone is worn. The knee prosthesis is composed of metal components that are cemented (glued) to the surfaces of the end of the existing bone, like putting a crown on a tooth. Bone cement (polymethyl methacrylate) is used to bond the components to the bone. A hard-plastic liner is placed between the metal components, which is the new gliding surface for the knee. The metals most frequently used for knee prostheses are titanium and cobalt chromium.



## About Your Hip Surgery

In a total hip replacement (also called total hip arthroplasty), the damaged bone and cartilage is removed and replaced with prosthetic components. The damaged femoral head is removed and replaced with a metal stem that is placed into the hollow center of the femur. The femoral stem may be either cemented or "press fit" into the bone. A metal or ceramic ball is placed on the upper part of the stem. This ball replaces the damaged femoral head that was removed. The damaged cartilage surface of the socket (acetabulum) is removed and replaced with a metal socket. Screws or cement are sometimes used to hold the socket in place. A plastic, ceramic, or metal spacer is inserted between the new ball and the socket to allow for a smooth gliding surface.



## Surgical Risks

Occasionally a patient will have an allergic reaction to one of the medications given for anesthesia before or during surgery. This risk is generally discussed with you by the anesthesiology staff at the hospital before surgery. During surgery, some loss of blood is common. The tourniquet helps limit blood loss. Occasionally enough blood is lost that a transfusion of blood is needed. Most people experience some numbness near the incision after surgery from small skin nerves being cut. Injury to bigger nerves near the knee/hip is uncommon but can result in numbness below the knee/hip or inability to use muscles below the knee/hip. Infection of the knee/hip is also

uncommon but can occur either during surgery or afterwards before the skin is healed or even much later if bacteria gets into the bloodstream and enters the knee/hip. Some patients experience problems with their incisions healing after surgery. This can allow bacteria to get into the wound and cause an infection. Things that make wound healing problems more likely include cigarette smoking, having diabetes that is not well-controlled, poor nutrition, and falls that damage the incision.

## **Medical Risks**

There are several things that can increase a patient's risk of a poor outcome after knee/hip replacement. The biggest problems are diabetes and obesity. It is very important to have their diabetes under control before surgery. A blood test called Hemoglobin A1C (Hb A1C) is most commonly used to determine how well the diabetes is controlled. If your Hb A1C is too high, your surgeon may recommend delaying the replacement until the diabetes is under better control. Obesity is similar in that a measure of your height and weight called Body Mass Index (BMI) can predict if you are more likely to have a poor outcome after surgery. If the BMI is too high, your surgeon may recommend weight loss options to you and delay the replacement. Patients with multiple medical conditions are also at a higher risk of poor outcomes and complications after knee/hip replacement. If you have multiple medical problems, your medical doctor can help you decide if surgery is too risky to proceed with.

## **Health Considerations**

Several medical conditions are associated with increased risks of complications in patients who have total joint replacements. Fortunately, with proper treatment, many of these conditions are "modifiable" before surgery, allowing the replacement to then proceed safely. Our team assesses the risk by measuring several factors and can recommend appropriate steps to correct any issues. Learn about what we screen for below so you will be prepared for your consultation. Please be aware that your surgery may not be scheduled, or may be delayed, if medical issues need to be addressed before the procedure.

## **Areas we screen for:**

### **Smoking**

Patients who smoke are more likely to have wound healing problems, medical complications, infection, and death. Patients should stop smoking all nicotine products at least 4 weeks before surgery.

[Helpful App: Quit Smoking](#)

## **Weight**

Patients with high Body Mass Index (BMI) are more likely to have infection, wound healing problems, difficulty breathing, and blood clots.

BMI < 40

[Helpful App: BMI Calculator](#)

## **Diabetes**

Patients with poor blood glucose control have higher complication rates involving stroke, pneumonia, and possible death after joint replacement surgery.

A1C < 7.5

[Helpful App: Diabetic A1c Monitor](#)

## **Nutrition**

Patients with malnutrition have an increased risk of infection and other medical complications following knee/hip replacement surgery.

Albumin < 3

[Helpful App: MyFitnessPal](#)

## **Low blood count (anemia)**

Patients with anemia have an increased risk of needing a blood transfusion, infection, and heart attacks:

- Women - Hemoglobin (Hgb) < 11g/dL
- Men - Hemoglobin (Hgb) < 12g/dL

## **High blood pressure (hypertension)**

Patients with high blood pressure are more likely to have heart attacks when they have knee/hip replacements. Controlled hypertension is very important prior to your surgical procedure and decreases this risk significantly.

## **Medications**

The purpose of our goals are to have you as healthy as possible going into surgery to avoid any preventable complications and to give you the best possible result from your replacement. Any medications you are currently taking can affect your success. We are particularly concerned about blood clots and bleeding. Many medications, whether herbal, over-the-counter, or prescription, can change how your blood clots, leading to excessive bleeding. These need to be reviewed as noted below.

### **Anticoagulants/Antiplatelets:**

Blood thinners like Coumadin, Plavix, Xarelto, and others, generally need to be stopped before surgery, often as much as a week before your procedure. Make sure to ask your prescribing doctor how to do this.

**NSAIDs:**

Anti-inflammatory medications like Naprosyn or Ibuprofen can also cause excessive bleeding. These medications should generally be avoided within 5-7 days prior to surgery.

**Herbals:**

Some herbal remedies can affect bleeding as well. Make sure your surgeon and their team are aware of ALL herbal products and medications you are taking. These should be avoided 5-7 days prior to surgery.

## **Schedule Surgery**

Once you have met with your physician and decided on surgery, you will meet with the surgical coordinator and schedule your surgical appointment date. You will also receive appointment dates for your 2 week follow-up appointment and post-op PT session.

If you need to reschedule or have any questions regarding this appointment you can call Emerge Ortho at 919-220-5255 or your surgeon's office that scheduled your surgery.

## **Pre-Surgery Appointments**

**Total Joint Replacement Class**

A Total Joint Replacement Class is offered and mandatory for patients undergoing total joint replacements. It is strongly suggested that you bring a family member or friend to act as your coach. The class is presented by Nursing, Physical Therapy, and Social Work/Discharge planners in an effort to encourage patients to complete preparations prior to surgery as well as prepare them for their hospital stay and post hospital recovery. This also allows you to ask questions that you may have. As a team, we have found that those who make the time to attend this class a week or two before surgery have a much better overall experience. Joint Replacement classes are held the 1st and 3rd Tuesdays at 2:00PM at North Carolina Specialty Hospital (NCSH). Please call (919) 595-8469 to make a reservation.

## **Pre-Admission Testing (PAT)**

Prior to your surgery you will be scheduled to meet with the Medical & Anesthesia Team. At the time of this Pre-Anesthesia evaluation, be prepared to discuss:

- Current medications (including herbs/supplements)
- Prior surgeries, with dates
- Medical Clearances
- Medical History (including previous history of blood clots or infections)
- Surgical History (past surgical complications)
- Allergies, including, medications, tape, iodine or metals, food, environmental, or others
- Questions you may want to ask



- Lab Work- If you are given a special blood bank bracelet, you must have this bracelet on when you arrive for surgery. If your bracelet is lost, we must repeat the testing prior to surgery.

## **Pre-Surgery Clearance**

### **Insurance and Payment**

For the convenience of our patients, we participate in a wide range of insurance programs. Any insurance plans with which we do not participate may have out-of-network benefits. We currently accept the following plans:

- Blue Cross Blue Shield (BCBS)
- Cigna
- Medcost
- Medicaid
- Tricare (Military)
- United Healthcare PPO
- Medicare
- Worker's Compensation

For those patients that are covered under health insurance or other governmental programs, we are required by law to collect any co-payments, coinsurance or deductibles that are specific to your benefits package. It is your responsibility as the patient to meet the financial terms outlined under your benefit plan. If you do not have medical insurance, you will be treated as self pay and payment is expected at time of service.

### **Insurance Authorization**

After your surgery is scheduled, authorization from your insurance provider may be required. The surgeon's office is primarily responsible for obtaining the authorization. This process takes time and we ask for your patience. Each insurance company's response time varies.

### **Medical Clearance**

A complete health assessment is required prior to your surgery. This will determine your readiness for surgery by reviewing your general health, allergies and medications. The need for any additional testing or imaging such as x-rays or EKG will be determined at that time to make sure you are healthy enough for surgery.

## 3-4 Months Before Surgery

### Quit Smoking

You must stop smoking at least 4 weeks before your surgery. The American College of Surgeons reports that smoking increases your risk of complications. Consider stopping smoking before surgery and remaining smoke free. Discuss with your primary doctor if you may need a smoking cessation aid.

### Complete Necessary Dental Work

Schedule an appointment with your dentist prior to surgery if you are having any dental problems. Reschedule any regular non-essential appointments out at least 90 days after surgery (example: eye doctor, dentist.) Unhealthy teeth can provide a way for germs to enter your bloodstream. If germs make their way to your replacement, an infection can occur. This may result in further surgery or even removal of the parts of the replacement for several months. Have any dental work needed done before surgery to decrease this risk.

## Getting Organized

### Get Equipment

You will need a 2 wheeled rolling walker, adjustable cane and bedside commode. Most insurance will provide a rolling walker and/or bedside commode.

- The majority of the insurance will pay for the walker and the bedside commode which can be provided to you after surgery in the hospital. Insurance will not pay for the cane. You will need to obtain the cane on your own.
- Regular UHC (Not Medicare UHC) will not provide a bedside commode.
- If you are covered by VA or Triwest you will need to obtain equipment at the VA prior to surgery.
- If you are covered by workers comp, please advise your adjustor or case manager of your equipment needs prior to surgery.
- If you have no insurance or are covered by project access you will need to obtain equipment prior to surgery.

The social worker/physical therapist will assist you with this during your stay. If not available, this will be addressed with you in the hospital. **Helpful tip:** A basket or tool belt is helpful to carry items so you will not have to let go of the walker.

### Prepare Your Household Checklist

- Arrange to have someone to be with you at the hospital and at home after discharge.
- Place items that you frequently use in easy to reach places.
- Organize your bedroom, bathroom, furniture, and stairs.
- A light within reach in the bedroom and clear cords out of your path.
- If you have pets, have a plan for someone to help take care of them or a place to contain them when you first come home. This is for safety.

### **Modifications - Complete these modifications prior to surgery:**

- Adjust Chair Height to at least one chair - Find a secure, stable chair with armrest, with seat 2 inches above knee/hips. Bed Modification - Raise bed or find a bed that is safe to get in and out of. You will need a place to sit where you can elevate your leg (ex. Recliner, sofa, coffee table, two to 3 pillows to elevate your leg).
- Bathroom Modification - Bedside commode provided at hospital stay - know the height of yours.
- Stairs - handrails are in place and secure.
- Remove throw rugs
- Make a Recovery Area to help with recovery, set up "recovery area" pillows to elevate the leg above the heart.
- Practice. Have ice packs pre purchased or made and available for use preoperatively and postoperatively.
- Plan to do the exercises that have been provided and walk, walk, walk!! The more in shape you are before surgery the better you will do after surgery!
- **Helpful hint:** If you have a high bed then you can get a single aerobic step stool to get in the bed.

### **Plan for Meals**

- Prepare food items. Stock up on prepared foods which can be stored.
- Prepare and freeze meals for easy thawing after surgery.
- Stock refrigerator with easy to make meals.
- Consider stocking up on canned foods.
- Arrange for delivery of meals by family, friends, neighbors, church members if possible.

### **Medication and Herbals** Stop taking the following medications (5-7 days prior to surgery):

- Ibuprofen (Advil, Motrin, Midol, Nuprin, Pamprin)
- Naproxen (Naprosyn, Aleve)
- Celebrex
- Indomethacin (Indocin)
- Diclofenac (Voltaren, Cataflam)
- Nabumetone (Relafen)
- Meloxicam (Mobic)
- Vitamins (Multivitamin and Vitamin E, C, K, etc.)
- Any Herbal Supplements
- Fish Oil

You may CONTINUE to take Acetaminophen (Tylenol).

Minimize narcotic pain medications before surgery to make it easier to control your pain after surgery. Clarify with the pre-anesthesia nurse what medications you ARE to take on the morning of your surgery.

## **One Week Before Surgery**

### **Post-Op Preparation Checklist**

**Complete with good understanding prior to surgery:**

#### Constipation

- Review options and purchase over the counter meds prior to surgery.

#### Fall Prevention

- Walk through your entire home and clear pathways, remove rugs.

#### Pain Control

- Have your ice packs purchased and prepared prior to surgery.

#### Hydration

- Have a way to remind yourself to hydrate before and after surgery.

#### Skin Prep – where to obtain skin cleanse

- Read directions and complete to decrease infection risk.

#### Medication Log

- Familiarize yourself with a log to record medications, to avoid spikes in pain.

#### Pillow Wedges/Rolls

- Have 1-4 pillows to create a wedge to elevate the leg above the heart.

#### Sleeping Area

- Set up a recovery area, considering phone and lighting.

#### Home Support

- Identify able-bodied family to assist surgery day through 2 weeks post.

#### Transportation

- Identify a contact person who can provide transport pre/post surgery.

#### Recovery Time

- Recovery time can vary depending on the individual. Every patient is different.

## Hospital Stay Expectations

- Be prepared that your postoperative pathway will include at least a one night stay in the hospital.

## Feeling Sick Before Surgery?

Immediately call EmergeOrtho or your surgeon's office if you have developed any infections, including cold or flu, urinary infections, skin rashes or sores. Any of these problems could complicate surgery and may lead to postponement of the procedure. If you need to reschedule or have any questions regarding this surgery, you can call EmergeOrtho: 919-220-5255 or your surgeon's office.

## IV and Anesthesia Information

### IV & Anesthesia

An IV will be started. Sometimes it is difficult to find a "good" vein and start the IV. It may take a couple attempts to get a working IV. Once the IV is placed, you will be given a dose of antibiotics to help prevent an infection. Special sensors will be placed on you that measure your blood pressure, heart rate and rhythm, and oxygen in your blood. Sometimes an EKG will be taken to make sure your heart is working properly and also to get a baseline rhythm. You will meet the anesthesiology staff in the pre-operative area. They will also review your records and discuss the best way to perform your anesthesia for the surgery. The best type of anesthesia varies from patient to patient depending on factors like age, medical problems, and your and the Anesthesiologist's preferences. Soon after you have met with the anesthesiology staff, you will be taken to the operating room. Often the anesthetist (anesthesiology nurse) will give you medication through your IV that makes you feel sleepy and relaxed. Most people don't remember much after this point.

### Anesthesia Types:

- **Spinal & Epidural**

A needle is used to inject numbing medication in your low back that causes your legs to go numb. The numbness can last anywhere from a few hours to nearly a day depending on the medication used.

- **Regional Block**

A needle is used to inject numbing medication near the big nerves to your leg, causing your leg to go numb below the place the injection is given. The numbness can last anywhere from a few hours to nearly a day depending on the medication used.

- **General Anesthesia**

You are given medication through the IV to make you sleepy. Once you're asleep, a special breathing tube is placed and you will be given more medication through the breathing tube to keep you asleep during the surgery. Sometimes this may cause a sore throat or hoarseness after surgery. Some surgeons inject "local" medication at the end of surgery, before you wake up. This numbs the area for a few hours to a few days depending on the type of medication used. Some patients may have a tube placed into their bladder that drains their urine, called a urinary catheter.

The length of time your surgery takes depends on many factors. Rest assured you will be kept comfortable during the surgery and continuously monitored by the anesthesia staff.

## **4 Days Before Surgery**

### **Increase Fiber & Hydration**

Four days before surgery you should begin increasing intake of fiber, hydration, fruits and vegetables prior to help prevent constipation. Make sure you have a stool softener and laxative available at home for when you return home after surgery. You can obtain these over the counter at your pharmacy.

### **Diet & Constipation**

After your surgery you will be advanced to a solid diet as tolerated. DO NOT SNEAK FOOD into the room as you will get sick if you advance your diet too quickly. Constipation after surgery occurs frequently as a side effect of narcotic pain medications and being less active. A stool softener is used along with the pain medication to prevent this. Drinking plenty of water and eating fruits and vegetables can also help with constipation. Let your nurse know if you are having trouble going to the bathroom. It is important to drink fluids to prevent urinary tract infections, fevers, and constipation as all of these things are common side effects related to having surgery.

### **Proper Breathing**

Deep breathing and coughing exercises will be started immediately after surgery to help prevent lung complications. You will be instructed on the importance of deep breathing exercises and the use of an incentive spirometer. This will be at your bedside and should be used at least every hour while you are awake to help keep your lungs clear. Pneumonia is also a side effect of not moving around enough and expanding your lungs properly after surgery. A helpful reminder is to use your incentive spirometer during each television commercial. You are encouraged to take your incentive spirometer home and use it for 2 days after surgery.

## **3 Days Before Surgery**

### **\*Review Hospital Procedures\***

- **Pre-Op Area: While You Wait**

Several forms will be reviewed with you while in the pre-operative area. Your medications, allergies, medical problems, and the planned surgery will be reviewed and verified with you. You will be asked to review and sign the hospital surgical consent form (even though you may have signed one prior to arrival at the hospital). You will be asked to sign the anesthesia consent also. Your surgeon will mark the correct surgical site to be performed on.

- **Operating Room: Overview**

You will be taken from the pre-operative area to the operating room where you will be asked your name, your ID badge will be checked, and the surgery to be performed will again be verified. In the operating room, you will be moved to the operating table. The anesthesia team will then initiate the type of anesthesia chosen for you.

- **Surgery: Overview**

Commonly a tourniquet will be applied to reduce bleeding during the surgery. An incision will be made. The diseased ends of the knee/hip will be removed. The prosthesis will be fit to you and your bones. The skin incision will be closed, and a plastic drain tube may be placed inside the wound to allow for drainage of blood. The incision will be covered with a sterile dressing. At the completion of the above steps, the anesthesiologist will stop the anesthesia and you will gradually wake up and become aware of your surroundings as you proceed to the recovery room.

## **Pain Control**

Your postoperative pain will be controlled primarily with oral medications, which may include anti-inflammatory, long-acting narcotic pain medications and immediate-release narcotic pain medications. Ask for your pain medication 30 minutes prior to physical therapy. Ways you can assist with your pain control and achieve better success:

- Discuss pain relief options and any concerns with your doctor and nurse.
- Ask for pain medication when your pain first begins (don't wait until the pain is unbearable).
- Help us assess your pain, be aware of the pain scale. Your nurses and doctors will ask you to pick a way that you can describe your pain. This is done to ensure uniform language. Two helpful ways to describe the pain include the number scale or the use of words (none, mild, moderate, severe).
- Nonpharmacological pain control options we have available which we will try first in some situations are ice, music, distraction, relaxation, massage, heat, comfort food, repositioning, etc.

## **Pain Scale**

Your nurses and doctors will ask you to pick a way that you can describe your pain. This is done to ensure uniform language. Two helpful ways to describe the pain include the number scale (0-10) or the use of words (none, mild, moderate, severe).

*Please remember that it is unlikely that you will have a pain score of "0", the goal of your care team will be to keep your pain at a tolerable level to you.*

## **Circulation**

After surgery it is important to keep the blood circulating within the leg to decrease swelling and to prevent blood clots. Specific things to help include:

- Begin moving your ankles and doing quad sets as soon as you can start to feel your legs.
- Begin walking with assistance the day of your operation.

- Inflatable devices will be placed around your leg and/or foot may also be used while you are in bed.
- Anticoagulant medication such as Aspirin, Eliquis, Xarelto, Coumadin or Lovenox will be given.
- Leg elevation will be encouraged, with a straight leg. A pillow may be placed under your ankle and calf to promote knee extension and attempt to provide elevation. Do not place a pillow under your knee only. The surgeon wants you as a patient to be working on maintaining a straight knee and increasing your attempts to bend the knee and move your hip while completing functional tasks and exercise. Other precautions and tips will be given to you by physical therapy.
- Circulation Exercises - The exercises that follow this can be done while lying in bed to help promote better circulation. You should be familiar with them from your Before & After Surgery Exercises. Continue these during your hospital stay.

## **Day Before Surgery**

### **Personal Preparation**

On the night before surgery do NOT eat solid foods after 10PM. You may have clear liquids from 10PM until 2 hours prior to your arrival time. Apple juice, water, gatorade, sprite, ginger ale, black coffee (no cream, no sugar). NO dairy products, nothing with pulp, no orange juice and no lemonade. This is for your safety during surgery as eating/drinking before surgery within a certain period of time can increase your risk of complications during your procedure. Your surgery will be canceled and rescheduled for a later date if you do eat the day of surgery. If your physician or the hospital provided you with special soap to wash with prior to surgery, please complete as directed.

### **Packing for Surgery**

Remembering the following while packing may be beneficial in your recovery:

- ❖ Comfortable, athletic-type shoes; slip-ons are easier than shoes you need to tie.
- ❖ Loose, comfortable clothes.
- ❖ Any specific ankle, foot, or leg braces that assist you in walking.
- ❖ Any needed toiletries, such as eyeglasses with case and contact lens materials.
- ❖ Reading materials or any other entertainment you might want after surgery.
- ❖ A pen and paper to write down questions you may want to remember to ask after surgery. Anesthesia and pain medication can make you drowsy, as a side effect and less likely to remember all of our questions.
- ❖ If you use a CPAP for sleep apnea you will need to bring it to the hospital.
- ❖ Bring your insurance card(s) and driver's license or other official form of identification.
- ❖ Leave valuables at home. Your phone and ID cards will be given to your family or securely placed in a locker during your surgery.
- ❖ Do not bring floor length step-in robes, high heels or open backed shoes.



- ❖ Do not wear makeup or fingernail polish.
- ❖ Verify the location of and the time the hospital expects you to arrive for your surgery and try to get a good night's rest.
- ❖ Bring any home medications you take daily **\*except controlled/narcotic medications\*** and no supplements. Leave **ALL** controlled/narcotic medications at home, they will be provided to you as ordered while you are here at the hospital.

## Day of Surgery

### Getting to Surgical Location

North Carolina Specialty Hospital 3916 Ben Franklin Blvd. Durham, NC 27704

-Use the front entrance of the hospital when you arrive.

### Check-In

The day of your surgery is very busy. When you arrive at the hospital you will be asked for your ID and insurance card at check-in. Since every patient is unique, surgery times may vary a bit and you may have to wait a while before being shown back to the pre-operative area. Make use of the reading materials you brought while waiting at the hospital and checking in.

### What to Expect

An identification bracelet will be placed on your wrist. This important bracelet will be used to identify you over and over during your hospitalization as a safety measure to ensure everything from getting the correct surgery to the correct medications. You will likely be asked several times what surgery you have come to the hospital for. This is to prevent any mistakes from occurring. You will be given a hospital gown to change into and shown to a "stretcher", a special bed that is used to take you back to the operating room. From the Pre-op area you will be wheeled into the operating room where you will be assisted onto the operating table. The surgeon and assistants will be wearing special protective suits and helmets which also help protect against infection. The operation usually takes 1 to 2 hours. After you are asleep, you will be positioned for the surgery. You will be laying on your back with special supports for your operative leg. Precautions will be taken to cushion and support your head, body, and limbs. The nurse anesthetist and anesthesiologist will administer all necessary medicine, monitor your blood pressure, heart rate, respiratory status and temperature throughout your surgery.

## After Surgery

### Recovery Room

In the Post Anesthesia Care Unit (PACU), you will be monitored as you awaken from anesthesia. The nurses will monitor your heart rate, blood pressure, breathing and temperature, as well as

the vascular (blood flow) and neurological (nerve function) status of your legs. You will be kept warm with heated blankets. Once you are awake, your pain is controlled and your vital signs are stable, (approximately 1 to 2 hours after surgery) you will be transferred in your bed to your inpatient room. Your family will not be able to see you from the time you leave for the pre-op area until the time you arrive in your room. This can take as long as 4-6 hours total.

## **Inpatient Room**

Your hospital stay is typically one to two days. Each individual's recovery is different. Your room will be very busy, including medical team interactions as follows:

- Your doctor or PA generally rounds early in the morning.
- Your hospitalist (doctor in the hospital) will also be rounding on you during your stay.
- Your nurse's routine will be:
  - ❖ Monitoring your blood pressure, heart rate, breathing and temperature
  - ❖ Checking your bandages
  - ❖ Asking you to move your feet, cough and breathe deeply
  - ❖ Checking your IV
  - ❖ Checking your pain level and administering pain medication as needed
  - ❖ Monitoring your urine output and removing your foley catheter as soon as possible
  - ❖ Lab Work

## **Special Equipment which may be used for your care:**

- I.V. - An intravenous tube (I.V.) will be placed in your arm through which antibiotics and I.V. fluids may be given. Your I.V. will be in place until you leave the hospital.
- Drainage Tube - A tube may be placed near your incision to drain excess blood from the surgical area. This tube is connected to a small collection container and is emptied periodically. The drain is usually removed the morning after surgery.
- Catheter - During surgery a urinary catheter may be placed into your bladder. The catheter is usually removed on the evening of surgery or the following morning.
- VISI Mobile Monitoring System - A monitoring device that allows your care team to monitor your vital signs continuously throughout your hospital stay. This device continuously monitors your heart rate, blood pressure, oxygen status and respiration rate and will message alerts to your care team if your vital signs are outside of the normal parameters.

## **Pain Control**

Your postoperative pain will be controlled primarily with oral medications, which may include anti-inflammatory, long-acting narcotic pain medications and immediate-release narcotic pain medications. Ask for your pain medication 30 minutes prior to physical therapy.

Ways you can assist with your pain control and achieve better success:

- Discuss pain relief options and any concerns with your doctor and nurse.
- Ask for pain medication when your pain first begins (don't wait until the pain is unbearable).
- Help us assess your pain, be aware of the pain scale.

- Nonpharmacological pain control options we have available are ice, music, distraction, relaxation, heat, comfort food, repositioning, etc.

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- Begin moving your ankles and doing quad sets as soon as you can start to feel your legs.
- Begin walking with assistance the day of your operation.
- Inflatable devices will be placed around your lower legs or feet and will be used while you are in bed to promote circulation while you are resting.
- Anticoagulant medication such as Aspirin, Eliquis, Xarelto, Coumadin or Lovenox will be given.
- Leg elevation will be encouraged, with a straight leg. A pillow may be placed under your ankle and calf to promote knee/hip extension and attempt to provide elevation. Do not place a pillow under your knee/hip. The surgeon wants you as a patient to be working on maintaining a straight knee/hip and increasing your attempts to bend the knee/hip during functional tasks and exercise.
- Circulation Exercises - The exercises that follow this can be done while lying in bed to help promote better circulation. You should be familiar with them from your Before & After Surgery Exercises. Continue these during your hospital stay.

### **Hospital Physical Therapy**

Physical therapy begins the day of surgery depending upon your scheduled surgery. When you are medically stable you will begin physical therapy. This will either take place about 4 hours from your surgery end time when the anesthesia has worn off, or if your surgery ends late in the day, PT may start the day after surgery and the nursing staff working with you will help get you moving your first day. You will attend physical therapy as needed throughout your stay. Your therapy will incorporate exercises to assist with:

- Improving strength
- Increasing mobility, both bending and straightening your knee/hip
- Transfers in and out of bed, to and from chair and bathroom
- Walking with a rolling walker
- Self-care activities
- Stair climbing as necessary

You will be provided a home exercise program. It is extremely important to follow through with the exercises when you go home as well as continuing your outpatient therapy.

## Discharge

Your joint replacement team will help determine when you're ready to be released home. If this discharge to home does not meet your medical needs the discharge planner in the hospital will assist in other arrangements as medically necessary. All prescriptions you need will be written or sent to your pharmacy if they weren't given to you before surgery. Instructions will be given to you about how to take care of your dressing and the incision. An appointment will be scheduled for you to return to the office for follow-up.

## When Should I Call?

Call EmERGEortho (919-220-5255) or your surgeon's office immediately if you experience any of the following signs:

- ❖ Being over anticoagulated:
  - Cough with blood
  - Heavy or uncontrolled bleeding
  - Blood in the urine, stool, or vomit
  - Black or tarry stool
- ❖ Signs of Infections:
  - Swelling in leg(s) which does not go away with elevation
  - Pain or tenderness in surgical site area
  - Calf warmth or redness
  - Fever of 101° F or greater
  - Seek urgent medical help (Call 911) if you experience:
    - Shortness of breath
    - Trouble breathing at rest
    - Sharp chest pain or rapid pulse
    - Coughing up blood or pink mucous
    - Very low blood pressure or fainting

## Common Symptoms & Side Effects of Surgery

### Swelling

Swelling of the leg is one of the most common symptoms experienced with a knee/hip replacement, and it can increase pain, reduce knee/hip motion, and decrease activity level. To reduce swelling, practice *R.I.C.E.* (Rest, Ice, Compression, Elevation)

- **Rest:** Modify your activity level and utilize the walker.
- **Ice:** It's important to use ice on your surgical site as much as possible, using a sheet between your skin and ice. Ice for 15 minutes, take 15 minutes off, repeat.

- **Compression:** Compression stockings, available at any medical store, may be suggested by your doctor to reduce swelling.
- **Elevation:** It's very important to elevate with 1-3 pillows under your entire leg as often as you can when you are not doing physical therapy or home exercises. Keeping your ankle higher than your knee/hip and chest helps reduce swelling. Your leg needs to be level or higher with your heart when possible!

## Warmth and/or Redness

This is due to an inflammatory process and may take months to resolve. Redness is generally due to swelling and normal healing response and should improve with the same treatments for swelling.

## Bruising

Significant bruising may occur in your leg or near your replaced knee/hip. This bruising may settle in your lower leg, back of your thigh, calf and around your ankle. It is not always near your incision. THIS IS NORMAL.

## Managing Constipation

Constipation is one of the most common side effects after surgery. Anesthesia, medication (especially narcotics), and changes in daily routine all contribute to this problem. We recommend drinking several large glasses of water throughout the day and use of a stool softener after surgery. Fiber powder additives (Metamucil, Benefiber, etc.) in a large glass of water may also help. Continue to take stool softeners as long as you are taking pain meds. You will need to have a bowel movement no more than 2-3 days after your surgery. You will most likely be at home and will need the support of stool softeners, increased fluids, and increased fiber (whole grain, fruits, veggies). You may also need a laxative, so arrange to have one available at your home and take as prescribed. If you haven't had a bowel movement within 2-3 days after surgery, a suppository or enema may be needed to resolve the constipation. Oral medicines such as Milk of Magnesia or Magnesium Citrate may also be used. Consult your pharmacist for specific questions regarding use of these medicines. Have these over the counter meds in your home prior to surgery. DO NOT WAIT more than 3 days post-op to have a bowel movement. You do not want to get a bowel obstruction. If you have increasing abdominal pain, nausea, vomiting, dark or bloody stool, contact EmergeOrtho (919-220-5255) or your surgeon's office immediately.

## Pain Management

Effective pain management relies upon taking an active approach to keep swelling down. This will help with making you comfortable enough to walk, sleep, and do physical therapy, and ideally minimize the need for narcotics and the associated side-effects. A total knee/hip replacement is a major surgery, and some discomfort and pain is expected. There is a fine line between taking enough pain medicine and taking too much. Typically, you will "wean down" from pain medication at the direction of your surgical team after surgery. Fortunately, the discomfort gets less as you recover.

## Medication

It is important to follow the medication instructions that you were given at discharge, including:

- Write down when you take your meds. We specifically encourage you and/or your care provider to closely follow and document your pain meds and meds taken for constipation as well as other supplements. This allows clarification of pain patterns, so you can better understand what medication is working, and improve your communication with your care team.
- Make sure to take pain medication prior to physical therapy appointments.
- For medication refills, please contact your surgeon's office.

## Post-Op Precautions

Problems such as infection, deep vein thrombosis (blood clot in leg), pulmonary embolism (blood clot in lung), or nerve and blood vessel injuries can occur. It is important to monitor closely and take action if you experience any of the symptoms related to these possible post-op complications as they are very serious.

## Infection

You will be closely monitored for wound, respiratory and bladder infections during your hospital stay. Infections can occur following anesthesia and placement of urinary tubes. Treatment of any infection will help prevent infection spreading to your knee/hip replacement. Infection can occur any time after knee/hip replacement surgery. In our institution, with the use of state of the art technology and extensive experience, the incidence of acute knee/hip infection is extremely low. Infection, however, can occur secondary to an infection elsewhere in the body. Superficial infections of the incisional area are often treated by a short course of antibiotics. A deep infection is more difficult to treat. Deep infections may require further surgery, long term antibiotics, and possible removal of the prosthesis.

### Symptoms of infection to watch for:

**\*Call EmergeOrtho (919-220-5255) or your surgeon's office immediately if you have any of the following\***

- Increased redness or swelling at the incision site
- Increased bleeding or drainage from the incision
- Fever of 101.5 degrees

## Blood Clots

Blood clots (Deep Vein Thrombosis) can develop in the leg following knee/hip replacement surgery. Deep vein thrombosis occurs when a blood clot forms in a large vein, often in the leg. Surgery can slow blood flow, and so can a lack of movement if you are in bed for a long time following surgery. One of the things we need to be most concerned about when having a knee/hip replacement is preventing blood clots. These clots can become life threatening if they move to the heart, lungs or brain.

## **Methods to prevent blood clots may include:**

- **Early mobilization:** The best thing you can do to prevent a blood clot is to be mobile. It is important that you get up and move as soon as possible and to keep active when you go home. Getting out of bed improves circulation and helps prevent blood clots. Walking, putting pressure on your foot, and moving your knee/hip, ankle, and toes all help "pump" blood up through the veins in your leg which helps minimize blood from clotting. Get up and move around frequently, and move your ankle and toes when you're not moving about.
- **Compression devices:** Intermittent Pneumatic Compression devices (IPC's) will also be used to prevent DVTs while you are in the hospital. These devices apply a gentle squeezing action that promotes blood circulation and prevents blood clots. Some patients may require compression stockings that help "squeeze" the blood out of the lower leg at home. **Anticoagulation medications:** We will put you on medication for anticoagulation to prevent blood clots. It is important that you not miss a dose and that you take it for the entire length of time prescribed by your doctor. This will usually be 4-6 weeks post-op.

## **Symptoms of blood clots to watch for:**

**\*Call EmergeOrtho (919-220-5255) or your surgeon's office immediately if you have any of the following\***

- Swelling in leg(s) which does not go away with elevation
- Pain or tenderness in surgical site area
- Calf warmth or redness
- Nerve & Blood Vessel Injuries
- These injuries can occur due to the proximity of nerves and blood vessels to the surgical site. Nerve injuries may result in numbness and/or loss of motion to the leg. This may require further treatment such as physical therapy, bracing or surgery. It is normal to have numbness along your surgical incision.

## **Symptoms of too much blood thinner to watch out for:**

**\*Call EmergeOrtho (919-220-5255) or your surgeon's office immediately if you have any of the following\***

- Cough with blood
- Bruises
- Heavy or uncontrolled bleeding
- Blood in the urine, stool, or vomit
- Black or tarry stool

## **Symptoms of blood clot in your lungs to watch out for:**

**\*Seek urgent medical help for these symptoms (Call 911)\***

- Shortness of breath
- Sharp chest pain or rapid pulse
- Coughing up blood or pink mucous
- Very low blood pressure or fainting

## Incision Care

The incision should be kept clean and dry. Upon discharge from the hospital, a waterproof dressing will cover the incision. Usually this will stay in place until your first post-op appointment, 7-14 days after your discharge. Please follow instructions from your physician. If you have stitches or staples, these will be removed at your first post-op appointment.

### Drainage

Some drainage into your bandage is expected. Call EmergeOrtho (919-220-5255) or your surgeon's office if the drainage soaks past the edges of the bandage – a new dressing may be needed.

### Bathing

Your bandage is water resistant and can be worn in the shower. Overwrap the bandage with plastic wrap to ensure your incision stays dry. You may shower with the bandage but do not take a bath. If your bandage becomes soaked, please call the office and we can discuss treatment options.

### Icing

Please continue to ice 3-5 times a day up to every hour for 15 minutes.

Elevate your affected limb higher than your chest level/heart with 2-3 pillows and wear compression stockings if swelling occurs.

## Medication Types

### Anti-Inflammatory (aka NSAIDs):

Examples: ibuprofen (Motrin, Advil), naproxen (Aleve, Naprosyn), celecoxib (Celebrex), meloxicam (Mobic), diclofenac (Voltaren), and aspirin. Check with your surgery team before using these – they can interfere with blood thinners and cause bleeding issues. Once you are off the blood thinner prescribed for you, ask your surgical team if it is okay to start NSAIDs. NSAIDs are very useful to decrease swelling and lessen pain.

- Side effects: Commonly include stomach pain, ulcers, and dark stools, as well as the bleeding issues noted above.

### Tylenol (acetaminophen):

Acetaminophen is commonly added to several types of prescription pain pills.

Make sure you don't take more than 4000 mg of acetaminophen a day, less (or none) if you have liver problems. If you have liver issues please consult your doctor for guidance on Tylenol use.

- \*Don't forget to count the acetaminophen in your prescription pain pill, sometimes listed as 'APAP' on the pill bottle label\*.
- Tylenol works differently than the narcotic pain medicine and anti-inflammatories, so it is generally okay to take along with them if needed.

### Narcotic Prescriptions:

Narcotic pain medicine does help with pain but doesn't make it go away entirely.



If you are having too much pain even after taking your medicine as instructed on the label, call your surgical team. Plan ahead if you start running out of pain medicine and you think you may need more. Narcotics are controlled substances and extra care is required in prescribing them.

- Please call your surgeon's office a few days before you run out. This will help avoid delays with any refills needed.

## **Narcotic Side Effects**

### **Constipation:**

Take steps to prevent constipation by drinking plenty of water and eating high-fiber food like fruit and vegetables. Stool softeners can help and are often prescribed with your pain medication.

- Call your surgical team if you have stomach pain or are unable to have a bowel movement after several days.

### **Nausea and Vomiting:**

Many people experience nausea, and occasionally vomiting, when taking narcotic medications. Use the lowest possible dose of medicine that keeps you comfortable. Anti-nausea medicine, especially if taken about 30 minutes before your pain medicine, can help decrease nausea.

- Call your surgeon's office if you are experiencing nausea and vomiting after taking your pain medication.

### **Addiction:**

The longer you use narcotic medication the more likely you are to get "hooked" on it. After the first few days after surgery, try to use the least amount of pain medication that keeps you mostly comfortable and try to wean off it.

- Call your surgeon's office if you feel that you are having trouble weaning off your pain medication.

## **Post-Op Week 1 - Day 1**

Today is the first day of your recovery journey. By now you are familiar with the physical therapy exercises and understand how important they are for your recovery and well-being. Make sure you proceed with clearance from your physical therapist.

### **Wellness Walk**

Walking is very important and can be done inside your home. We recommend walking inside your home for short distances as tolerated for the first week after surgery or until you see your PT who will further from there. Walking every hour when awake is important to promote healing, decrease stiffness, and prevent blood clots. Please note that walking is not a substitute for your physical therapy exercises.

## Icing

Using an ice pack on your joint helps reduce swelling and pain. Make sure you keep it on for about 15 minutes at a time.

## Exercises and Stretching

Follow the instructions of the Physical Therapist that you saw while in the hospital until you are seen by your outpatient or home health therapist.

## Post Op Discharge Phone Calls

The post-discharge case management program and the nurse case managers here at NCSH want to assure you are recovering well after discharge. Given such, we are available to assist you should any needs or questions arise after going home. Think of us as an extra resource for you when questions or concerns come up after discharge. Our case managers understand that some questions need to go to your doctor, however, we can also serve as a liaison or a means of communication if you are having difficulty getting in touch with them. We have confidential voicemails so feel free to call anytime. You can reach us M-F 8a-4p at 919-956-9300 ext. 1344 or 1437 please feel free to leave a message. Thank you again for choosing North Carolina Specialty Hospital and we look forward to working with you.

## Returning to Activities

By six weeks postoperatively your surgeon may allow more strenuous activity such as swimming and biking. Leg swelling may worsen with your increased activity. Continuing using ice, leg pump exercises, leg elevation and wearing support stockings can help prevent this.

ALWAYS Remember RICE: Rest, Ice, Compression as needed, and Elevation. It is important to continue your home exercise program to reach maximum knee/hip motion. **You will be advised by your surgeon on when you can return to driving, work, exercise, sports, and sex.**

### Driving

Physical therapy will determine when you have an appropriate braking reflex that is safe to drive. **Right sided surgery:** you may be able to drive at 4-6 weeks if you are off pain medication and physical therapy has said you are strong enough.

**Left sided surgery:** you must be off pain medication before legally allowed to drive.

We do not encourage long car rides, whether driving or as the passenger, during the first six weeks after surgery due to blood clot risk.

### Work

How quickly you return to work mainly depends on the type of work you do. Jobs that involve mostly sitting at a desk or stool will be easier to return to quickly. Jobs involving lots of standing or walking will generally take longer to return to. Strenuous jobs like landscaping, maintenance work, and construction generally take the longest to return to. Speak to your surgical team about how soon they think you will be able to return to work.

## **Exercise**

Your primary job after surgery is to rehabilitate the knee/hip. Exercise initially should be focused on the surgical site only. You may experience swelling after resuming exercise initially. As your knee/hip heals, you may increase your activity accordingly. Avoid impact type exercises such as running, jumping, and twisting, especially early after the replacement. These activities can cause loosening of the knee/hip replacement which can result in the need for a second surgery. Avoid swimming until you are told you may safely get the incision wet.

## **Sports**

To protect the replacement, avoid strenuous sports like running, soccer, singles tennis, and any other sport that involves high impact. Doing these sports can significantly decrease the lifespan of your knee/hip. As a rule of thumb, doubles tennis is generally felt to be safe after knee/hip replacements. To determine whether other sports are safe, compare the activities and movements to those in doubles tennis; if they are less "vigorous" than doubles tennis, they are likely okay to play.

## **Sex**

You may return to sexual activity once you are comfortable enough to do so. Keep in mind all restrictions, which vary based on how long it has been since your surgery, when having sex.

## **Resume Normal Bathing**

You may shower without cover after your post op visit. Pat the incision dry after showering. DO NOT USE any lotions or creams near your incision. If you have special pieces of tape across your incision, they should fall off over the next 7-14 days. You can remove them after 7 days if they are not falling off. DO NOT SUBMERGE your incision in water. Clarify with your doctor when he or she will allow swimming/baths etc. If there are openings in the incision, wait until they are completely closed!

## **Long Term Recovery**

### **Follow-Up Visits**

Routine follow-up visits are scheduled at regular intervals during the first year following your surgery. After the first year an annual orthopedic exam and x-rays are recommended to evaluate your function and status of your prosthesis. During these visits your knee/hip is assessed for any swelling, problems resulting in an unstable knee/hip, and range of motion. X-rays are often taken to ensure the replacement remains well-fixed to the bone and no abnormal wear of the replacement is occurring.

### **Advanced Strengthening**

As you continue to build your strength, your physical therapist may instruct you to do some advanced strengthening exercises. Before starting your advanced strengthening exercises for the session make sure to do 3 warm-up exercises.

## **Bone Loss**

The new gliding surface in the knee/hip replacement may wear over time. Most modern replacements manufactured consist of a plastic component made of polyethylene. Polyethylene "wears" gradually over time, resulting in small particles of plastic floating freely. Ceramics and metals can also "wear" resulting in debris floating. Bone loss which occurs as a reaction to these particles is called osteolysis. The presence of the prosthesis can change the stresses through your bone, which can also lead to bone loss. If enough bone is lost, the replacement can become loose and pain and clicking may occur, resulting in the need for a revision surgery.

## **Loosening**

*Loosening of the implants over time is a possibility:*

Overly aggressive activity can cause the metal or plastic attached to your bone during surgery to come loose. Pain and popping or clicking can occur when this happens. In this situation, a second surgery (revision) may be needed.

## **Trauma**

Injury to the knee/hip from falls, car accidents, or other trauma can cause the components of the replacement to come loose or the bone near the replacement to break. Dislocations can cause damage to the ball, stem, or cup of the replacement prosthesis. Occasionally additional surgery may be needed to prevent further dislocations.

## **Infection**

Infection can occur any time after joint replacement surgery. In our institution with the use of a modern, state of the art operating room environment and extensive experience, the incidence of acute joint infection is extremely low. Infection, however, can occur secondary to an infection elsewhere in the body. Superficial infections of the incisional area are often treated by a short course of antibiotics. A deep infection is more difficult to treat. Deep infections may require further surgery, long term antibiotics, and possible removal of the prosthesis.

## **Dental Work**

There is controversy about whether to use antibiotics before routine dental cleaning. Make sure to ask your surgeon what they recommend. Please wait to schedule any dental procedures until over three months after your surgery unless emergent. In the future, if you are scheduled for any dental procedures call our office and we will prescribe you an antibiotic to take prior to your procedure. Inform your dental office and all treating physicians that you have a knee/hip replacement. Dental procedures (including cleaning), certain invasive procedures such as proctoscopy or cystoscopy and certain surgical procedures, especially urological and gynecological procedures, can result in bacteria entering your bloodstream. These bacteria could infect your total knee/hip replacement. To help prevent infections of your joint replacement, you will need to take antibiotics prior to your procedure. If going to the dentist, please call EmergeOrtho or submit a message through the portal, and we will prescribe an antibiotic.

## **References**

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## **Patient Satisfaction Survey**



**We Strive for 5!**



At discharge, you will receive a survey evaluating the Total Joint Program at NCSH!  
We would like to hear from you!

