

Preparing and Recovering from My Knee Replacement Surgery



DEPARTMENT OF ORTHOPAEDIC SURGERY
ADULT RECONSTRUCTION & JOINT REPLACEMENT

UNIVERSITY OF MICHIGAN
HEALTH SYSTEM

Surgery

Surgery Date: _____
Your Surgeon: _____
Surgery _____
Coordinator: _____

Pre-surgery knee class (Length: 2 hours)

Date: _____

Time: _____

Class Check in: 2nd floor of Taubman, Reception B, 8:30 am

Bring:

- ☐ This book
- ☐ Pharmacy insurance information/card
- ☐ Your support coach, we encourage family and friends

Pre-op physical

Time: _____

Date: _____

Location: _____

Bring:

- ☐ Names and quantities of medications you take (some patients find it easiest to bring all of their bottles/dispensers)
- ☐ Any Clearance letter you have been instructed to bring

Time of Surgery

One business day before surgery, call (866) 936-8800 between 7:30 am - 9:30 am

Call Date: _____

A nurse will return your call between 7:30 am - 4:30 pm to tell you your surgery time and what time to arrive at the hospital.

Arrival Time for Surgery: _____

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Check List for Success

☐ Read

- Read this “Preparing and Recovering from My Knee Replacement Surgery” before surgery. Refer to it whenever you have any questions.

☐ Stop

- Taking medications listed on page 16.
- Taking any Vitamins and supplements.
- **Do not** stop taking your diabetes, high blood pressure or other prescription medications unless instructed to do so at your pre-op appointment.

☐ Purchase (see page 13)

- An over the toilet commode or raised toilet seat. Please install before your surgery.
- Laxatives (Miralax® and Colace® or Senna; no prescription necessary).

☐ Call for your surgery time

- Call (866) 936-8800 the morning before your surgery to find out what time to arrive at the hospital for surgery.
- If your surgery is on a Monday, call the Friday before your surgery.

☐ Prepare

- Shower the night before and the morning of surgery. Follow the instructions on page 44.
- Pack your bag following the instructions on page 18.

☐ Bring

- “Preparing and Recovering from my Knee Replacement Surgery” with you to the hospital.
- Blue Pre-Admission Type & Screen Information (given to you at your pre-op history and physical exam).

☐ Plan your recovery

- Plan to go home from the hospital 1 day after surgery.
- If you plan to go to a short-term care facility, bring the name of a first and second choice facility with you to the hospital. Our nurse case manager will make arrangements when she meets with you in the hospital.

Why choose University of Michigan Hospitals and Health Systems?

The University of Michigan Joint Replacement Program offers many services that help to manage arthritis and other causes of knee pain. If you are a candidate for knee replacement, our team will see you through your recovery so you receive seamless care from start to finish.

Our surgeons are fellowship trained in joint replacement surgery. Research shows that fellowship trained surgeons in a high volume practice leads to better outcomes for patients. Our surgeons are active members in multiple societies, including the American Academy of Orthopaedic Surgeons and the American Association of Hip and Knee Surgeons. They also participate in a state-wide registry called Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI). This registry is dedicated to improving the quality of care for patients undergoing hip and knee replacement procedures in Michigan. If you would like more information on MARCQI, please refer to their website: <http://marcqi.org/>.

Our relationship with the Medical School improves the patient experience. This is a teaching hospital; Orthopaedic residents are part of our team and will be involved in your care, supervised by your surgeon. Our cutting edge institution offers high quality care, world-class facilities, partnerships with research, and the opportunity to work with the best and brightest educators. We offer data driven care focused on safety and early and full recovery.

Team approach

- Physicians
- Residents
- Physician Assistants
- Nurse Practitioners
- Nurses
- Pharmacists
- Physical Therapists
- Occupational Therapists
- Dietitian/Nutritionist
- Other skilled professionals
- You, the patient
- Your support coach

We work together starting before your surgery and through the recovery process. This team approach works well to provide you with the best possible care.

As you read through this book, you will see that you are an important part of this team.

Why do I need a knee replacement?

Why does my knee hurt?

Some reasons for knee pain are:

- **Knee arthritis:** Your joints are covered with a smooth, glistening white surface called cartilage. The cartilage allows your joints to move easily, like ice on ice. Arthritis destroys the cartilage. This is the most common reason for knee pain. There are many types of arthritis including osteoarthritis, rheumatoid arthritis, and psoriatic arthritis. When the cartilage is damaged your joint does not move smoothly and causes you to have pain. If you have arthritis, symptoms may include, pain, stiffness, and difficulty with daily activities (e.g. putting on your socks and shoes).
- **Obesity:** Increased stress on joints and changes in step size can lead to pain in your knee joint.
- **Traumatic injury:** You have had sudden and severe knee pain, from an old sports injury or a car accident, for example.

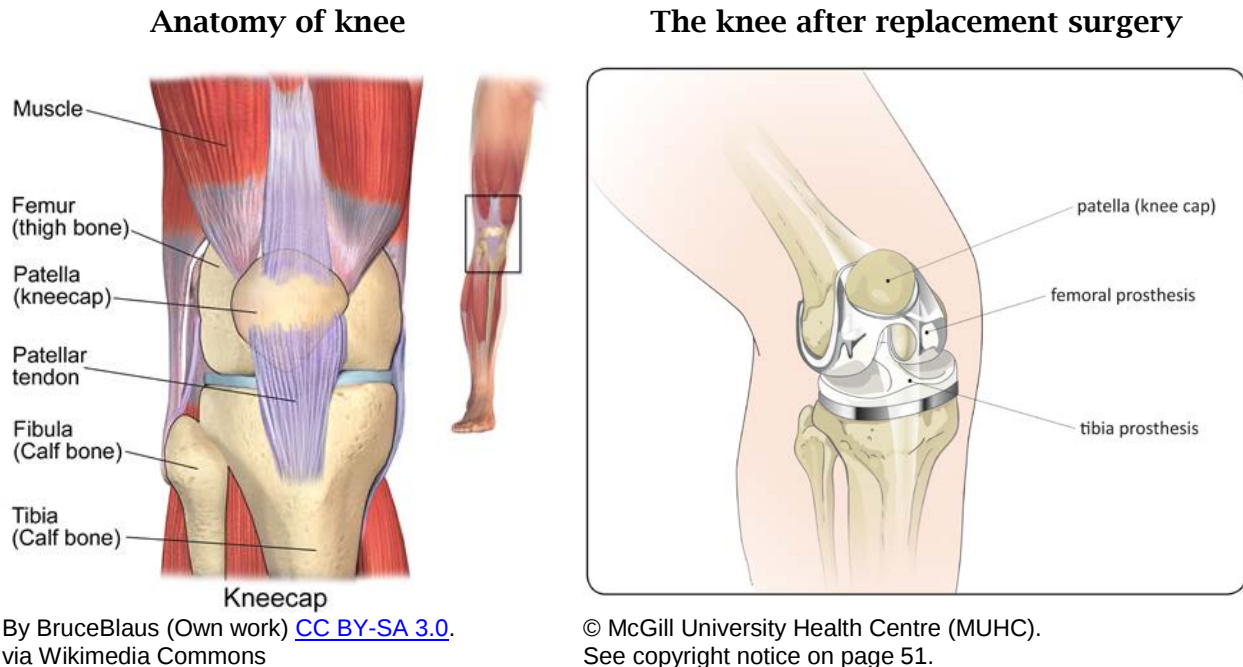
What are my non-surgical treatment options?

We will explore various methods to help your knee pain without surgery, including:

- Physical therapy, especially strengthening your thigh (quadricep) muscle
- Modifying your activities
- Weight loss
- Devices to help you walk (cane or walker)
- Anti-inflammatory medications

What is a knee replacement surgery?

Knee replacement is a very successful and long-lasting surgery that uses metal and plastic parts to cap the end of the bones that make up the knee.



What risks and complications might I have?

Like any surgery there are risks and complications that could occur. Some examples are:

- Bleeding
- Blood clots
- Heart attack
- Infection
- Stroke
- Pneumonia
- Pain or stiffness
- Damage to blood vessels, bones, or nerves
- Loosening or wear of the implant
- Knee fracture
- Anesthesia-related risks
- Death is a rare complication of any surgery

What can I do to prevent surgery complications?

Before surgery:

- You will have a physical exam and pre-operative tests done.
- You may need to see a specialist depending on your personal health history.
- We will work with you to help you lose weight if necessary. Obesity greatly increases your risk for complications.
- Stop smoking more than 2 weeks before surgery.
- If you have diabetes, we will work with you to get your Hemoglobin A1c to 7.5 or less.

How do I prepare for my surgery?

Once your surgeon determines you are candidate for knee replacement, you will start preparing for your knee replacement several weeks before surgery. Being well prepared will help reduce risks and complications.

Find a support coach

A support coach is a relative or friend that helps you while you prepare for surgery. This person will also help you in the hospital and at home. You may have more than one support coach if one person is not available for all of the steps below.

A support coach must be available to:

- Attend the pre-op class with you.
- Bring you to the hospital the day of your surgery.
- Come to the hospital at 8:00 am the morning after surgery for education with nursing, PT and OT before discharge.
- Learn about your exercises, pain control, and important knee dos and don'ts.
- Take you home from the hospital (usually the day after surgery).
- Help you around your house with everyday activities.
- Drive you to post-op appointments.

Attend a pre-op class

You will be required to attend a 2-hour class to learn about your knee replacement.

Bring:

- This book
- Your support coach
- Any other family members or friends who would like to attend

You will learn about:

- Preparing for your surgery
- Your hospital stay
- Recovering after your surgery

You will be able to ask any questions you have during this class. Many patients and families find this class to be very helpful.

If you have not been scheduled for this class, please call the clinic at (734) 936-5780.

Pre-op medical history and physical exam

You will have an appointment scheduled for a Pre-Op physical.

- Bring a list of your medications and dosages or bring all your medicine bottles to this appointment.
- Pre-op testing may include blood tests, nasal swabs, and possibly an Electrocardiogram (ECG). An ECG is a test that measures the electrical activity of your heart.
- Depending on your personal health history, you may also need to see a medical specialist, such as a heart doctor or lung doctor, before surgery. We will make this decision when you are seen for your exam or when we receive test results.

Stop smoking before surgery

It is important that you stop smoking at least 2 weeks before surgery. Smoking interferes with healing and increases the risk of infection.

Dentist

- Do not have your teeth cleaned during the 2 weeks before your surgery.
- Bacteria from your gums can enter your blood stream and could infect your new knee joint.
- Any tooth or gum infections must be treated before surgery and your dentist must send us a note to say your infection is gone. Our fax number is: (734) 647-3125.

Prepare your home

- Remove throw rugs, fasten down loose carpet, and tape down electrical cords to prevent tripping.
- Place a non-skid, latex-coated bath mat on the floor beside your tub and a non-skid mat in the tub.
- Remove clutter anywhere you may walk.
- Add night lights in halls and bathrooms.
- Put an extra pillow on chairs so that you will sit higher. It will be easier to get up from the chair.

- Find a chair with arms to use as your main chair because it is easier to stand up and sit down.
- Prepare meals ahead and freeze them.
- Wash your laundry and put clean linens on your bed.

Walker

- If you have a walker, please have your coach bring it to your room on the day of surgery.
- The therapist will check it to make sure it is the right height and style for your needs.
- If you do not have a walker, one will be ordered and delivered to your room before discharge.
- If you are going to a short term care facility, the walker will be obtained for you there.

Buy supplies

- Purchase or obtain an over the toilet commode or raised toilet seat and install it before your surgery.
- Purchase laxatives and stool softeners before surgery to use when you get home from the hospital. Pain medication is very constipating. You should take laxatives and stool softeners daily, for as long as you are taking a prescription pain pill (narcotic). No prescription is necessary (examples: Senna, Colace®, Miralax®, Milk of Magnesia, or any over the counter laxative).
- A shower chair or tub transfer bench and hand-held shower hose are recommended but not required.



Note: Your insurance may not cover the commode, shower chair, or tub transfer bench. You can find these items at stores such as Home Depot®, Meijer® and Wal-Mart® for a low price. You can also check local churches, senior centers or the Salvation Army.

Begin exercising

- Start the exercises listed on page 38.
- Start them today, even before surgery, and continue lifelong.
- These will improve muscle strength and help you recover faster.

Advance Directive or Durable Power of Attorney (DPOA)

- We encourage everyone to create an advance directive. This helps us concerning future choices about your medical care.
- If you have an advance directive, please bring it to your pre-op appointment or surgery so we can add it to your health record.
- For more information, visit: uofmhealth.org/pvg/patients/advance-directive.

Accommodations

If you do not live in the area, you may want to make plans to stay locally.

- Our Patient & Visitor Accommodation Program can help patients and their families make area hotel reservations at a discounted rate.
- They are available 24 hours a day at (800) 544-8684.
- The Med-Inn, attached to the hospital is also available but fills up quickly. Their number is (734) 936-0100.

Short-term care facility

- We would like you to go home with your support of your coach(es) after surgery.
- Studies show patients heal better and have fewer problems, less risk of infection and readmissions to the hospital when recovering at home.
- You may need to go to a short-term facility if you cannot find a support coach or if after surgery, you are having difficulties moving and completing tasks, our therapists may recommend a brief stay at a short-term facility.

If you think you may need to go to a short-term facility, you should visit and tour a few facilities before your surgery and pick a first and second choice. To find short-term care facilities near you, follow the instructions below.

- Contact your insurance carrier, ask about coverage and if they have a preferred provider or designated short-term care facility (there is usually a phone number on the back of your insurance card).
- To find facilities near you online, visit www.medicare.gov

1. Click on the link on the left side of the page titled “Find Nursing Homes”.
2. The next page will ask for a zip code.
3. Facilities in that area will appear.

Facilities have ratings, but these ratings can be misleading. We strongly recommend you visit potential facilities.

Seven (7) days before surgery



Stop taking:

- Herbal supplements, vitamins, and weight loss product.
- All recreational drugs (heroin, cocaine, marijuana, LSD, Methamphetamine, etc.).
- All medications listed in the table below (these medications may cause you to bleed more easily).

Do not stop your other medication if they are not listed below, unless instructed to do so (for example, blood pressure or diabetic medications).

Actron [®]	Cope [®]	Indocin [®]	Oruvail [®] (Ketoprofen)
Advil [®] (Ibuprofen)	Daypro [®] (Oxaprozin)	Lodine [®] (Etodolac)	Pamprin - IB [®]
Aleve [®] (Naproxen)	Disalcid [®] (Salsalate)	Meclomen [®]	Pepto-Bismol [®]
Anaprox [®] (Naproxen)	Dolobid [®]	Medipren [®] (Ibuprofen)	Percodan [®]
Anacin [®]	Doan's [®]	Meloxicam [®] (Mobic)	Ponstel [®]
Ansaid [®] (Flurbiprofen)	Easprin [®]	Motrin [®] (Ibuprofen)	Relafen [®] (Nabumetone)
Aspirin	Empirin [®]	Nalfon [®] (Fenoprofen)	Rufen [®] (Ibuprofen)
Ascriptin [®] (Coated Aspirin)	Ecotrin [®]	Midol (Ibuprofen) [®]	Salflex [®]
Arthrotec [®] (Diclofenac)	Etodolac	Naprelan [®] (Naproxen)	Suprol [®]
Bayer Aspirin [®]	Excedrin [®]	Naprosyn [®] (Naproxen)	Tolectin [®] (Tolmetin)
Bufferin [®]	Feldene [®] (Piroxicam)	Naproxen	Trilisate [®] (Salicylate)
Butazolodin [®]	Fiornal [®]	Nuprin [®] (Ibuprofen)	Vanquish [®]
Cataflam [®] (Diclofenac)	Haltran [®] (Ibuprofen)	Orudis KT [®]	Voltaren [®] (Diclofenac)
Clinoril [®] (Sulindac)	Ibuprofen	Orudis [®] (Ketoprofen)	

Prescription Blood Thinners

If you take Coumadin[®] (Warfarin), Plavix[®], Aggrenox[®], Pradaxa[®], Fondaparinux[®] (Arixtra), Eliquis[®] (Apixaban), Xarelto[®] (Rivaroxaban) or other prescription blood thinners or Aspirin prescribed by your doctor, you will receive specific instructions at your physical exam about how and when to stop these medications.

Tylenol[®]

To help manage your pain before surgery, you may take Tylenol[®] (Acetaminophen).

Tylenol[®] does not thin your blood.

Some recommended ways to take Tylenol[®] are listed below, choose **one** of the following:

- 500 mg (1 tablet every 4 hours or 2 tablets every 8 hours)
- 325 mg (2 tablets every 6 hours)
- 650 mg tablet (1 tablet every 6 hours)
- You should not take more than 3000 milligrams of Tylenol (Acetaminophen) in a day

Tylenol[®] will also help with your pain management after surgery.

Narcotic/Prescription Pain Medications

If you are taking a prescription narcotic pain medication before surgery, do not increase how much you are taking. You should minimize the amount of narcotic medication you take before surgery otherwise it will be very hard to manage your pain after surgery. If you are taking large amounts of narcotic pain medication, please let us know. If you are taking too much, your surgery may be postponed to allow you to wean this down.

We will not prescribe any narcotic pain medications before surgery.

1 Day before surgery

Do not eat or drink anything after midnight, the night before surgery.
This means food, gum, hard candy, or water.

How do I find out when to arrive at the hospital?

- Call (866) 936-8800 between 7:30 am - 9:30 am the morning before your surgery.
- If your surgery is on a Monday, you will need to call the Friday before.
- Leave a message with your name and a phone number where you can be reached.
- A nurse will call you back and tell you what time to arrive at the hospital for your surgery.

What should I pack for the hospital?

- This book.
- Flat, sturdy, rubber soled shoes with a back (no clogs).
- Loose fitting clothes.
- Toiletries and personal care items.
- Copy of your advance directive, if you have one.
- Cash or credit card to pay for discharge medications if you plan to use our pharmacy.
- Eyeglasses, hearing aids, or dentures you usually use, labeled in containers.
- CPAP or Bipap machine, if you use one. Please bring to Pre-Op.
- Braces or orthotics, such as an ankle brace, if you regularly use them.
- If you have a walker, please arrange for your support coach to bring it to your hospital room the day of surgery; label it with your name.

Note: Do not bring jewelry or valuables of any kind such as watches or wedding rings

When should I take my special shower?

Take a special shower the night before surgery and the morning of your surgery. See page 44 for detailed instructions.

Day of surgery

Do not eat or drink anything

Do not eat/drink food, gum, hard candy, or water.
Only use a tiny sip of water to swallow any pills if you were instructed to take any of your medications.

What should I do the morning of surgery?

- Shower again with antibacterial soap (see page 44 for instructions).
- Brush your teeth, but do not swallow any water.
- Take your medications, if any, as directed with a small sip of water.
- Do not wear makeup.
- Do not apply lotions, powder or any other products around the surgical site.
- Do not wear contact lenses into surgery.
- Do not bring valuables to the hospital.
- Bring your suitcase so your support coach can bring it to your room after surgery.
- Bring your walker, if you have one. Your support coach can bring it up to your room after surgery.

Where do I check-in?

- Arrive at the hospital's main entrance at your instructed time. You may use the P2 parking structure near the Taubman Center or valet parking.
- Leave your suitcase in the car, but bring your CPAP with you.
- Check in at the Surgery Center on the first floor of the main hospital.
- Look for the red column down the first floor hallway.

What happens in the pre-op area?

- Your anesthesiologist will discuss your different options for anesthesia and answer any questions you may have.
- One person may stay with you in the pre-op area until you go to the operating room.

- When you go into surgery, we will give your support coach/family/friend a pager.
- This pager will notify them when the surgery is complete and the surgeon can speak with them.

How long will my surgery take?

Average surgery time is 1 ½ to 2 ½ hours but may be longer depending on your specific surgery.

What happens in the recovery room?

After surgery, you will wake up in the recovery room. Nurses will check on you frequently. You might be hungry, but in these first few hours, you should only take tiny sips of water to avoid getting sick. Visitors are not allowed in the recovery room.

What happens in my hospital room?

- Your family can visit you in your hospital room.
- Your support coach/friends should bring your suitcase and walker (if you have one) to your room after surgery.
- Once you get to your room, you may eat if you are not nauseated. We will start with Jell-O and broth and then advance SLOWLY to solid food.
- If you are doing well, staff will help you get out of bed; you may get to a chair or even walk in the hall.
- Ask for ice to help reduce pain and swelling. We recommend 20 minutes of ice every hour that you are awake.
- Start your exercises.
- Use your incentive spirometer (breathing machine), 10 times every hour when you are awake.
- Make sure your squeezers (SCDs) are on both legs at all times unless you are walking.
- You should be given a copy of the Inpatient Knee Replacement Pathway which is a good outline for what happens during your hospital stay.

What can I expect during my hospital stay?

- See the Inpatient Knee Replacement Pathway for more details about what to expect during your hospital stay. If you did not receive this, ask the staff to get you a copy.
- Most patients leave the day after surgery.
- Our physician assistant and residents will see you between 6:00 am and 7:00 am. They may remove your dressing and drain (if you have one). A new dressing may not be applied. The surgical glue acts as a bandage and seals the wound.
- If you have a Foley Catheter, it will be removed the morning after surgery. Removing the catheter and drinking plenty of fluids decreases the risk of a urinary tract infection.
- If you are tolerating fluids, have normal blood pressure and are not dizzy, your nurse or aide may disconnect your IV.

How do I stay safe during my hospital stay?

- For your safety, never get out of bed without assistance.
- Use the red call button located on your remote to call for assistance, ask questions, or request medication.
- Do not attempt to walk to the bathroom alone.

What kind of therapy will I receive in the hospital?

The Physical Therapist will:

- Review knee dos and don'ts with you.
- Work on walking and activities to make sure you are safe to go home.
- Review and make sure you understand the exercises shown on pages 38-41.
- Teach you how to get in/out of bed, and as needed, safely climb stairs and get in/out of a car.

The Occupational Therapist will:

- Teach you techniques to bathe, dress and use assistive devices for daily activities.

What symptoms might I have after surgery?

Nausea

- Medications are available to help relieve nausea.
- You will start eating Jell-O and broth. You will then slowly move to a solid food diet.
- Eat slowly and drink plenty of fluids.

Leg swelling

- Your leg will swell for several weeks to months after surgery.
- You can decrease swelling by elevating your leg and icing your knee.
- Wear compressive stockings (TED hose) for 2 weeks following surgery. Remove them at least once per day to check skin for sores and wash your legs.

Constipation

- Constipation is common after surgery because of pain medications and a decrease in activity.
- We will give you laxatives while in the hospital.
- You should continue laxatives at home for as long as you are taking prescription narcotic pain pills. These are very constipating.

Pain

Your nurse will monitor your pain and frequently check on how you are doing overall. The University of Michigan Health System has developed a pain protocol to minimize post-operative pain. Most patients are very comfortable and are able to go home the day after surgery. If you experience pain:

- Use your red call button to ask for pain medication and ice. Nurses do not always know when your ice has melted.
- Ice will help to decrease pain and swelling.
- Change your position in bed.
- Elevate your leg to reduce pain and swelling.

Blood clots

A blood clot can occur following surgery. A blood clot happens when blood cells stick together and block blood flow inside of a blood vessel. A blood clot causes painful swelling of your leg. Rarely, they may break loose in the blood vessel and travel to your lungs, causing a blood clot in your lung called a pulmonary embolus (PE), which can be life threatening.

- To help prevent blood clots, you will have Sequential Compression Devices (SCDs) placed on both legs after surgery. These “squeezers” will help pump blood from your legs back up to your heart.
- Wear the SCDs at all times (in bed or sitting in a chair) while you are in the hospital. Only take them off when you are up walking.
- Please remind staff to put your SCDs back on when you return to your bed or chair.
- Do your Ankle Pump exercises 10 times an hour when you are awake. Continue to do them for about a month after surgery.

Medication to prevent blood clots

- You will be placed on some type of blood thinning medication (e.g. Aspirin or Coumadin®) to help prevent blood clots from forming.
- You will be on this medication for 4 to 6 weeks after surgery.

What are the signs of a blood clot in my legs?

- Painful swelling of your leg that does not go down after elevating your leg.

What are the signs of a blood clot in my lungs (Pulmonary Embolus)?

- Chest pain
- Shortness of breath
- Difficult and/or rapid breathing
- Sweating
- Confusion

Pneumonia

After surgery, you are at risk for lung complications because of lack of movement and pain. When you get to your room, you will get a breathing device called an incentive spirometer.

Use your incentive spirometer **at least 10 times per hour** when awake. This will help to:

- Reduce the risk of post-surgery lung complications (pneumonia).
- Bring down a spiking fever.
- Increase deep breathing, which keeps your airways open.
- Reduce your hospital length of stay.



When will I be discharged?

Most patients leave the day after surgery. Our goal is for your discharge to be as timely and safe as possible. Your support coach will take you home on your discharge day. If you are going to a short-term care facility, your support coach may drive you or a wheelchair van can pick you up. There is a fee for the wheelchair van. Fees vary depending on the distance to the facility. The discharge planner can find out the cost and arrange for the van to pick you up. If you brought a CPAP or Bipap machine, remember to take it home with you.

Your support coach:

- Should arrive at the hospital by 8:00 am the morning after surgery. We suggest that the support coach use valet parking.
- They will learn about your knee dos and don'ts, exercises and how to help you move safely.
- They will be available to take you home.

Your home care plan:

- Our case manager nurse will meet with you and discuss home care needs. We will provide you with the name and phone number of the home care agency. The home care agency will call you when you get home and let you know when they will be arriving at your house (usually the day after discharge).
- The purpose of home care is to ensure that you are safe at home, understand your knee dos and don'ts and can get around your home without difficulty.

What are the keys to discharge?

- ☐ Tolerate diet.
- ☐ Be comfortable on oral pain medication.
- ☐ Meet Physical Therapy goals.
 - o Stair climbing, as needed.
 - o Walking a household distance.
 - o Getting in/out of our fake car.

- Meet Occupational Therapy goals.
 - Learn techniques for safely dressing.
 - Activities of daily living (e.g. bathing).
 - Learn how to use assistive equipment provided to you.
- Walker is delivered to room (if needed).
- Have no difficulties urinating after foley catheter is removed.
- Have two bladder scans less than 250 mL.
- Discharge order is placed in computer by MD/PA.
- Prescriptions are sent/e-prescribed to your pharmacy.
 - You will have prescriptions for your pain medicine and any other medications needed for recovery.
- Patient has copy of post-discharge pathway (handed out in pre-op class, additional copies available on 5A).

What are the final steps?

- 1) Review written discharge instructions with your nurse.
- 2) Nurse will remove IV.
- 3) Your support coach or transport services will take you to the front entrance.
Call the valet (810-360-1386) and they will bring your car to the front entrance.

What will my recovery at home be like?

Care Pathway After Discharge

The Care Pathway After Discharge, which also applies at a short term care facility, is available for your reference in the back of this book. It provides day to day instructions for your recovery at home. If you need an extra copy, ask for it before you leave the hospital.

Home Therapy

A therapist will come to your home for a few visits to make sure that you:

- Feel safe getting around.
- Understand your knee dos and don'ts.
- Are doing your exercises correctly; we only want you to do the exercises listed on pages 39.

How can I prevent blood clots?

- Continue looking for signs of blood clots after discharge (e.g. swelling that does not improve after elevation, chest pain, shortness of breath, confusion).
- You will be on some type of blood thinner for 4 to 6 weeks after surgery.
Common medications include Coumadin® or Aspirin.
- If you are on Coumadin®, the pharmacist will give you more specific instructions before you leave the hospital.

Call us (734) 936-5780

If you have increased pain and swelling in your leg, especially swelling that does not go away after an hour of elevating your leg. These symptoms are signs of a DVT (blood clot in your leg).

CALL 911 if you have any of the following:

- Chest Pain
- Shortness of Breath
- Difficult and/or Rapid Breathing
- Confusion

Call 911 to get to the nearest emergency room as quick as possible to evaluate you for a blood clot to your lungs.

How do I prevent constipation?

Constipation is a common complication after surgery because of narcotic pain medications and limited activity. To prevent constipation:

- Take a stool softener every day.
- Use a laxative as needed while on narcotic pain medications (laxative examples: Dulcolax®, Colace®, Miralax®, Milk of Magnesia).
- Drink lots of fluids (water and fruit juices) and minimize caffeine intake.
- Eat foods rich in fiber. We recommend 15-20 grams of fiber per day.
- Be as active as possible.

Recipe for severe constipation

- Mix together
 - o 1 cup applesauce
 - o 1 cup coarse unprocessed bran
 - o ¾ cup prune juice
- Take 1-2 tablespoons every evening with a glass of water.
- Refrigerate between uses.
- Take until your bowel habits are regular.

How do I prevent a wound infection?

- Keep your incision clean and dry. If the incision is dry, no bandage is necessary.
- Do not use ointments or lotions or get your incision wet.
- You may shower if you cover your incision so it does not get wet. Taping saran wrap over the incision works well.

- Do not take a tub bath until the wound is completely healed with no scabs.

Call the Clinic at number below if:

- Increased pain, redness or swelling
- Drainage from your incision
- Incision is hotter
- If you have a fever over 101.5
- Chills
- Calf pain

UM Call Center: (734) 936-5780 (8:00 am - 4:30 pm, M-F).

After hours Paging Number: (734) 936-6267, ask for the Orthopaedic resident

How do I reduce swelling?

Your leg will swell off and on for up to a year after surgery. Your knee will swell the more you are standing and walking. Swelling may cause your knee to throb. Your entire leg may bruise, even down to your toes. This is normal and will go away in a few weeks.

Elevate your leg and ice your knee

- Prop your leg up when sitting throughout the day.
- Elevate your leg above your heart at least 4 times a day for 20-30 minutes.
- Ice your knee often for a few weeks after surgery to reduce swelling.

Wear TED hose compression stockings

- Wear your TED stockings for 2 weeks after surgery. Your support coach should help you with putting your socks on and taking them off.
- Remove stockings at least once per day to check skin for sores and wash your legs.
- You may take the stockings off at night.
- Hand wash and air-dry stockings.

- You can purchase an extra pair at pharmacies, Meijer®, or Wal Mart®.

How and when do I wean off my pain medication?

We will give you a prescription for pain medication that should last until your 2-week post-op appointment. Your pain and need for medication should decrease slowly with each day.

- When you first get home, you should take your pain pills on a regular basis.
- Begin taking less medication as you get further along in your recovery. If you are taking 2 tablets at a time, decrease to 1 tablet.
- As you have less pain, increase the time between pain pills. For example, take 1 pill every 6 hours and then decrease to 1 pill every 8 hours.
- Eventually, you may only need to take pain pills when you expect a lot of activity or at night to help make you comfortable enough to sleep.
- Most patients are off narcotics in 1 to 3 weeks.
- We will only prescribe narcotics up to a maximum of 6 weeks after surgery.
- After 3-4 weeks, narcotic pain medicine can actually prolong pain and slow your recovery.
- We want to help you manage your pain and use pain medications when necessary, but it is important to switch to over the counter medications as soon as you can.
- Discuss with us when you may start using medications like Motrin®, Advil® or other non-steroidal anti-inflammatories. We usually will let you start these types of medications starting 2 weeks after surgery.
- Remember, icing and elevation are very important in helping to reduce your pain.

If you have questions about weaning your pain medicine, please call the clinic.

When do I go back to the Orthopaedic clinic?

2 weeks

You will see your Orthopaedic surgeon or a mid-level practitioner (PA or NP). During this appointment your healthcare provider will:

- Examine your knee and answer any questions you have.
- Remove any staples or stitches you may have and take x-rays.
- Discuss whether you need to continue wearing TED hose.

6 weeks

After your 2-week appointment, you will have another follow-up appointment to see how well you are doing. We will take X-rays and decide whether you need outpatient physical therapy.

1 year

After 1 year of recovery, we will see how you are doing and take x-rays.

Every 5 years

You should schedule an appointment with us every 5 years for the rest of your life. If you move out of the area, please follow up with an orthopaedic joint replacement surgeon in your new area.

How will I live with my new knee?

Everyday Activities

We encourage you to be active and participate in low impact activities such as:

- Walking
- Hiking
- Biking
- Dancing
- Swimming (after your incision has completely healed)
- Gardening

You can also use a treadmill, bike, or elliptical.

We recommend avoiding high impact activities that can shorten the life of your joint. If you participate in activities that include excessive bending, like yoga, you may need to modify some positions to avoid extreme ranges of motion. Avoid heavy lifting, jumping or twisting.

Weight Control

- Keep your weight down reduces stress on your new joint.
- For every 10 lbs. you lose, you decrease stress on your joints by 40 lbs.

Continue exercising for the rest of your life

- The thigh muscles help you get up from a low chair or off the toilet.
- Keeping thigh muscles strong are essential to help stabilize your hip and knee and keep you living independently as long as possible.
- Continue the exercises starting on page 39.

Antibiotics for the rest of your life

- If you have any infections, you may need antibiotics promptly to prevent your joint from becoming infected.

- You may need to take antibiotics before some surgeries or diagnostic procedures. Always tell medical staff that you have had a total knee replacement.
- Ask your primary care physician, the person doing any procedures, or us for advice on when you should take antibiotics.

Dental care

- Wait at least 3 months after your knee replacement before scheduling your first dental appointment, unless you have a dental emergency.
- Bacteria can get into your blood stream during a teeth cleaning or during some dental procedures and may cause an infection in your artificial joint.
- Taking antibiotics prevents your knee replacement from being infected by the bacteria that normally live along your gum lines.
- You will need to take antibiotics before all teeth cleanings and some dental procedures, for a minimum of 2 years. Our orthopedic surgeons would encourage you to do this lifelong.
- Tell your dentist that you have had a joint replacement.
- Take the antibiotics one hour before the scheduled dental appointment. No additional doses are required after the procedure. The antibiotic prescription can be called to your pharmacy by your orthopaedic surgeon, dentist, or primary care physician. The antibiotic will be one of these options:
 - o Amoxicillin, 2 grams, by mouth, one hour before each dental procedure.
 - o Clindamycin 600 mg, by mouth, one hour before each dental procedure (if allergic to penicillin).

No injections

- Your new knee is made up of all artificial parts.
- We removed the arthritis. Steroid or cortisone type injections are not helpful now because the parts are artificial.
- **Do not** have any injections into your knee without checking with us first. This could cause an infection.

How will I do everyday activities?

Getting Out of bed

- When getting out of bed, move your operated leg out of bed first.
- When getting into bed, move your non-operated leg into the bed first.

Standing up

- Place one hand on your walker and the other on the surface you are pushing up from to stand.
- Never start with both hands on your walker.
- Avoid chairs without armrests and add firm cushions to low chairs.

Going up Steps/curbs

- Remember “Up with the good, down with the bad”.
- When going up a step, lead with your good leg and then bring your operative leg up onto the same step
- When going down a step, lead with your operative leg and then bring your good leg down onto the same step.
- To prevent falls, have someone behind you as you go up steps and in front as you go down steps.

Getting in/out of a car

- Have a support person prepare the passenger seat by moving it back as far as possible to make room.
- Back up to the seat and place your operative leg out in front of you.
- Lower yourself onto the car seat and pivot your legs around into the car.

Toileting

- Using a raised toilet seat may make it more comfortable to go the bathroom.



Bathing

- Stand in the shower or use a shower chair or bench.
- Ask for help to get into and out of the shower.
- Do not attempt to cut your toenails or wash your feet without assistance.
- Keep incision dry for 2 weeks.

Physical Therapy

Guidelines for your therapist

The following information serves as a guideline for progressing physical activity and exercises after knee surgery.

Please make sure you give this information to your physical therapist that comes to your home or sees you in the short term care facility.

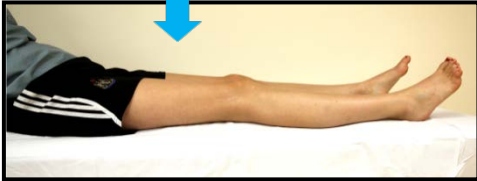
Check list for your physical therapist:

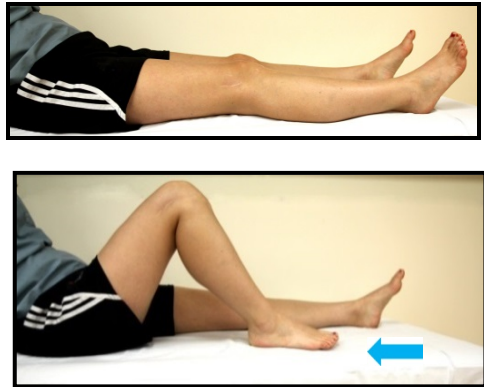
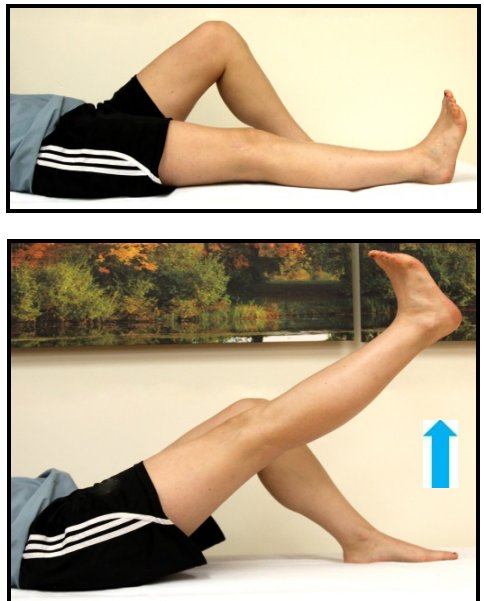
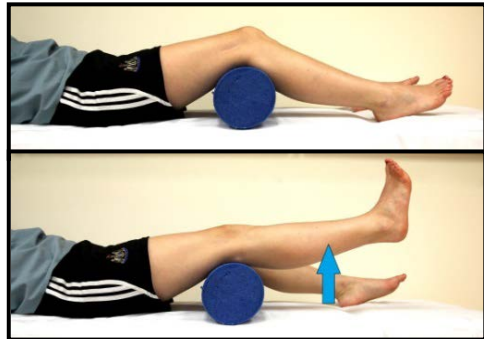
Patient Assessment	✓ Completed
Patient demonstrates safe mobility	
Bed transfers	
Sit to stand	
Stairs/steps	
Donning/doffing shoes, socks and pants	
Toilet/tub transfers	
Car transfers (if appropriate)	
Ambulation goals	
Encourage daily ambulation- focus on eliminating compensatory gait patterns.	
Assess baseline ambulation (distance and/or time) and establish a plan of progression based on gait pattern, pain/discomfort and endurance.	
Progress to Independent ambulation without an assistive device Discuss when it is appropriate to move from a walker → cane → independent ambulation.	

Patient Assessment	✓ Completed
Early goals	
Focus on achieving AAROM 0-90° in sitting, before 2 week post-op appointment.	
Control swelling: Establish 'ice & elevation sessions' 3x/day	
Review Home exercise program	
Focus on terminal knee extension and deep knee flexion	
Demonstrates proper exercise technique	
Assess baseline function and discuss exercise progression	
Gentle soft tissue mobilization around patella/incision	
Review/Discuss: When to contact your physician	
When pain is not controlled with medication, ice and/or elevation.	
When incision is draining, red, hot	
If you have a fever greater than 101.5°	

Total Knee Replacement Exercise Program

These exercises will help increase the motion and strength of your operated leg. Your physical therapist in the hospital will teach you these exercises, and you should continue to do your entire exercise program every day at home. Do not hold your breath while doing the exercises. Do the exercises with both legs.

1. Ankle pumps • Pull your toes up toward your head and then point your toes down. • Repeat 10 times per hour lying or sitting.	 
2. Thigh squeeze • Lying down, tighten your thigh muscles. • Press the back of your knee into the bed and hold 5-10 seconds if able. • Work up to 10 reps, 2-3 times per day.	
3. Buttock squeeze • Lying down, squeeze your buttocks together tightly (hips raise slightly). • Hold for 5 seconds, then release. • Work up to 10 reps, 2-3 times per day.	

4. Heel slides • Lying down, start with your leg straight, then bend your knee. • Slide your heel toward your buttock. • Do not lift your heel off the bed or let your knee roll inward. • Work up to 10 reps, 2-3 times per day.	
5. Straight leg raises • Lay with your operative leg straight and other leg bent • Lift straight leg up and hold for 5 seconds. • Work up to 5 reps, 3 times per day.	
6. Knee extensions • Lying down, place a rolled towel, blanket, pillow, foam roller or ball under your knee. • Lift your heel, straighten your knee and tighten your thigh. • Hold for 5-10 seconds. • Work up to 10 reps, 2-3 times per day.	

7. Knee Bends

- Lie on your back & bring your operative knee toward your chest.
- Let your operative knee bend, using gravity to help improve knee flexion.
- Try to hold your leg in this position for 15 to 20 seconds, and then take a rest.
- Repeat 5 to 10 times. Do this exercise 2-3 times each day.



8. Scooting knee bend

- While sitting in a chair, try to bend your knee as far back as possible. Once you have your knee bent as much as you can, try scooting yourself forward to the edge of the chair while keeping your foot planted on the floor.
- Hold this stretch for 10 to 20 seconds, then scoot back in your chair
- Work up to 5 to 10 reps, 6 times per day



9. Sitting knee extensions

- Sit in your chair and work on bending and straightening your knee all the way.
- Work up to 5 reps, 3 times per day



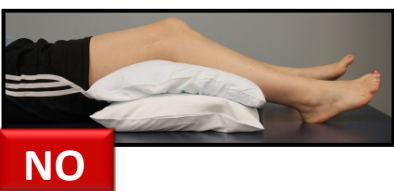
10. Two-chair stretch

- Place the heel of your operative leg on a stool or chair directly in front of you.
- Push your knee down towards the floor by tightening the muscles on the top of your thigh.
- Work on getting your knee straight.
- Do this exercise 3 to 6 times every day.



Dos and Don'ts after total knee replacement

A therapist will come to your home to start your physical therapy. You will continue physical therapy in your home for up to 2 weeks. You will then progress to physical therapy at an outpatient clinic for the next 4 weeks.

Do not rest with a pillow positioned under your knee. When lying down, place a rolled up towel or blanket under your calf.	 YES	 NO
Rest with your leg straight	 YES	
Do not sit for long periods with your feet on the floor	 NO	 YES

- Let your leg rest with the knee in a straight position when in bed or sitting.
- Work on bending and straightening your knee frequently to regain full function.
- Elevate your legs whenever possible (reclining chairs with elevated leg rests are good). This also helps to decrease the swelling in your leg.
- Sit in a tall, firm, straight back chair with armrests. This makes it easier and safer for you to stand up and sit down.
- Ice your knee often.

Pre-Operative Showering Instructions

Before surgery, you can play an important role in your own health. Because your skin is not sterile, we need to be sure that your skin is as clean as possible. Your skin will be prepared with an antiseptic before your surgery, but the antiseptic can work better if your skin is clean.

To clean your skin before surgery, your surgeon has asked that you shower the night before and again the morning of surgery. You should use an antibacterial soap like Dial®, Lever®, or Safeguard® (bars or body wash). In addition, we will give you an antiseptic soap with Chlorhexidine gluconate (CHG) in it to wash your surgery site (knee). If you are allergic to any of these products, you should not use them and call your surgeon or nurse at (734) 936-5780.

If you did not receive the bottle of antiseptic soap, (CHG/Bactoshield®/Hibiclens®) you can purchase it at your local pharmacy. You do not need a prescription.

Showering instructions before surgery:

1. Shower both the night before and again the morning of your surgery with an antibacterial soap such as Dial®, Lever® or Safeguard®.
2. Pay special attention to your neck, underarms, breasts, feet, groin, and skin fold regions.
3. Do not shave the area of your body where you are having surgery.
4. Wash your hair with your normal shampoo.
5. Rinse the antibacterial soap off and then apply the special CHG soap to your surgical site (knee).
6. Use gentle friction with a washcloth or soft sponge to remove dirt.
7. Avoid rough scrub brushes and harsh scrubbing.
8. Rinse well after washing.
9. Do not use lotion, cream, powder or perfume after washing.
10. Remove nail polish and make up.
11. Put on clean clothes after each shower.

Pre-Operative Screening for Staphylococcus Aureus

Staphylococcus aureus or “staph” is bacteria that live on the skin and in the noses of many healthy people. Staph bacteria do not cause problems for most people. Sometimes these bacteria can cause serious infections including surgical wound infections.

There are two main kinds of Staph:

1. **Methicillin-resistant staphylococcus aureus or “MRSA”** is a type of staph that is resistant to some antibiotics that are commonly used to treat staph infections.
2. **Methicillin-sensitive staphylococcus aureus or “MSSA”** is a type of staph that is **not** resistant to antibiotics that are commonly used to treat staph infections.

How do we screen or test for Staph?

- To find out if you have Staph, we will swab the inside of your nose.
- We send the swab to the laboratory. It takes a few days for the results to come back.
- If the result is positive, the clinic will contact you and will call a prescription for an antibiotic nasal ointment to your pharmacy. You will use this antibiotic before surgery.
- This can help prevent some staph infections after surgery.
- **A positive screening test does not mean you have an infection and will not cancel or delay your surgery. It simply means you are a “carrier”.**

If my test is positive, what treatment will I receive?

We will send a prescription for mupirocin nasal ointment (Bactroban®) and chlorhexidine 4% topical solution (CHG) to your pharmacy.

- Use 2 times a day for the 5 days before your surgery.
 1. Place a small amount of the nasal ointment on the tip of your finger or on a Q-tip.

2. Swab the inside front part of each nostril with the ointment.
 3. Gently press or squeeze your nostrils together and release several times (for about a minute) to spread the ointment through your nostrils.
- Wash or shower with the chlorhexidine 4% topical soap solution (CHG) each day for the 5 days before your surgery. Only use the soap from the neck down.

If I test positive, will I be treated differently while in the hospital?

- If you test positive for staph that is resistant to some specific antibiotics (MRSA), you may be placed on “contact precautions” during your hospital stay.
- Your healthcare team will put on gloves and a gown when taking care of you.
- This helps prevent spreading MRSA to other patients.

Your family or visitors **do not** need to gown up but should always wash their hands when visiting and should not touch your incision.

Frequently Asked Questions (FAQ)

What is a support coach?

A relative or friend that can help you prepare for surgery, take you home from the hospital, and support you during recovery. See page 11 for more information about their role.

How will my pain be managed after surgery?

The University of Michigan has a pain protocol that works very well to keep you comfortable after surgery. A spinal anesthetic is part of the pain protocol and a long acting pain medicine may be given through the spinal catheter for pain control in addition to intravenous (I.V.) medications and pain pills. Please do not hesitate to let your nurse know if your pain is not under good control. Ask for ice which also helps with pain control.

How long will I be in the hospital?

Most patients are discharged the day after surgery.

How do I help prevent blood clots?

You will be on some type of blood thinning medication for 4-6 weeks after surgery. It is important to do ankle pump exercises, get up, and get moving.

Will I need a blood transfusion?

5 out of 100 (5%) patients will require a transfusion. We will monitor your blood count while you are in the hospital and will talk to you if we think you may need a transfusion.

When can I shower or bathe?

You may shower right away, but keep your incision clean and dry. Do not take a bath. We want you to keep the incision dry for 2 weeks. Water can peel the surgical glue off. You can shower if you keep your incision dry. Do not apply any ointments, creams, or lotions. Expect your incision to be tender, pink and warm. It can be warm for several months after surgery. It is also normal to see scabbing.

Who helps coordinate my discharge?

Your case manager will arrange all home care needs after you are discharged, or will arrange for you to go to a short term care facility if necessary.

Short- Term care facility

When you are at a Short Term Care facility, you are not under our medical care. Do not assume the facility is contacting us with any problems you are having. Please call us if you have questions about your recovery or notice problems with healing, such as drainage from your incision.

Can I go upstairs?

Yes. The therapist will work with you in the hospital to teach you the safest way to do this. Discuss your home layout with the in-patient therapist so they can practice with you.

How do I prepare myself before surgery?

See Pg 11

How do I prepare my home before surgery?

See Pg 12

How do I make sure my joint lasts?

See Pg 32

When can I drive?

You can drive after your surgeon and Physical Therapist say it is safe and you are no longer taking narcotic pain medication. The minimum time estimate is 4 weeks. You should not drive while you are taking pain medications. It is OK to be a passenger in a car immediately after your surgery.

Why do I have to wear TED hose? How often should I wear them?

TED hose help reduce swelling in your leg. Wear them all day while awake for 2 weeks after surgery. You can take them off at night.

What therapy goals do I need to do in order to leave the hospital?

- Walk household distances (with your assistive device),
- Climb and descend stairs as needed for your home.
- Perform a car transfer (get in and out of our fake car).
- Demonstrate safe use of adaptive equipment during bathing and dressing (or be able to identify a person that will assist you with these activities).

How long do I need a walker or assistive device?

We like you to use your walker for the first 2 weeks after surgery or as instructed by your therapist. Your therapist can help you switch to a cane when it is safe.

How do I get refills for my pain medicine?

When you are discharged from the hospital, you will be given a prescription for pain medicine that should last until the 2-week post-op appointment. We expect that you should slowly wean down your pain medication starting within about a week or two of surgery.

Narcotic pills cannot be phoned or faxed into your pharmacy. You will need the actual written prescription. Sometimes it can be e-prescribed if your pharmacy accepts these. If you find that you will need a refill on your pain medication before you are seen back in the clinic, call the Orthopaedic Call Center at (734) 936-5780 to request a refill. If your pharmacy does not accept ePrescriptions, we will either mail your prescription or you can arrange to pick the prescription up. Allow at least 5 days for the prescription to reach you by mail.

How do I control my pain?

1. Take your pain medication as directed for the first few days/weeks.

2. Ice your knee regularly. Apply an ice pack for 20 minutes as tolerated throughout the day (20 minutes on, 20 minutes off) when you are awake.
3. Prop your leg when sitting throughout the day.
4. Elevate your leg 4 times per day, for example, at 8:00 am, 12:00 pm, 4:00 pm, and 8:00 pm, for 20-30 minutes. Lie completely flat and elevate your leg on pillows so your leg is above your heart. Ice your knee while lying down for 30 minutes.



How do I taper my pain medication after I get home?

See page 30 for information on weaning off medication.

Will I need to tell my dentist that I have a joint replacement?

See pages 12 and 33 for details on dental care after joint replacement.

What if my dentist says I do not need to take an antibiotic?

We recommend antibiotics lifelong, but at minimum, please take them for the first two years.

Will I set off metal detectors?

Possibly. Allow a little extra time at the airport or courthouse to get through security. A wallet card that indicates you have a metal implant is available for you, but security at the airport generally does not accept that as proof.

How do I avoid constipation?

See page 28 for constipation treatments.

What is **not** normal for my incision?

Seek medical attention if:

- Your incision is painful, red or hot.
- The amount of drainage is not normal. If you have drainage, call today, not tomorrow.
- You have a fever greater than 101.5 degrees.

Do I need authorization from my insurance for surgery?

Yes. Our surgical schedulers will seek authorization from your insurance company before your surgery.

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Reviewers: Joseph Maratt, MD, Brian Hallstrom, MD, Physical and Occupational Therapy

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FAQs

(frequently asked questions)



about "Surgical Site Infections"

What is a Surgical Site Infection (SSI)?

A surgical site infection is an infection that occurs after surgery in the part of the body where the surgery took place. Most patients who have surgery do not develop an infection. However, infections develop in about 1 to 3 out of every 100 patients who have surgery.

Some of the common symptoms of a surgical site infection are:

- Redness and pain around the area where you had surgery
- Drainage of cloudy fluid from your surgical wound
- Fever

Can SSIs be treated?

Yes. Most surgical site infections can be treated with antibiotics. The antibiotic given to you depends on the bacteria (germs) causing the infection. Sometimes patients with SSIs also need another surgery to treat the infection.

What are some of the things that hospitals are doing to prevent SSIs?

To prevent SSIs, doctors, nurses, and other healthcare providers:

- Clean their hands and arms up to their elbows with an antiseptic agent just before the surgery.
- Clean their hands with soap and water or an alcohol-based hand rub before and after caring for each patient.
- May remove some of your hair immediately before your surgery using electric clippers if the hair is in the same area where the procedure will occur. They should not shave you with a razor.
- Wear special hair covers, masks, gowns, and gloves during surgery to keep the surgery area clean.
- Give you antibiotics before your surgery starts. In most cases, you should get antibiotics within 60 minutes before the surgery starts and the antibiotics should be stopped within 24 hours after surgery.
- Clean the skin at the site of your surgery with a special soap that kills germs.

What can I do to help prevent SSIs?

Before your surgery:

- Tell your doctor about other medical problems you may have. Health problems such as allergies, diabetes, and obesity could affect your surgery and your treatment.

- Quit smoking. Patients who smoke get more infections. Talk to your doctor about how you can quit before your surgery.
- Do not shave near where you will have surgery. Shaving with a razor can irritate your skin and make it easier to develop an infection.

At the time of your surgery:

- Speak up if someone tries to shave you with a razor before surgery. Ask why you need to be shaved and talk with your surgeon if you have any concerns.
- Ask if you will get antibiotics before surgery.

After your surgery:

- Make sure that your healthcare providers clean their hands before examining you, either with soap and water or an alcohol-based hand rub.

If you do not see your providers clean their hands, please ask them to do so.

- Family and friends who visit you should not touch the surgical wound or dressings.
- Family and friends should clean their hands with soap and water or an alcohol-based hand rub before and after visiting you. If you do not see them clean their hands, ask them to clean their hands.

What do I need to do when I go home from the hospital?

- Before you go home, your doctor or nurse should explain everything you need to know about taking care of your wound. Make sure you understand how to care for your wound before you leave the hospital.
- Always clean your hands before and after caring for your wound.
- Before you go home, make sure you know who to contact if you have questions or problems after you get home.
- If you have any symptoms of an infection, such as redness and pain at the surgery site, drainage, or fever, call your doctor immediately.

If you have additional questions, please ask your doctor or nurse.

Co-sponsored by:



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