Holland Hospital | JOINT REPLACEMENT CENTER

Guidebook for Knee Replacement

Welcome

We are pleased you have chosen Holland Hospital for your upcoming knee surgery. Your decision for surgery has not been made lightly, and we are honored to be part of your care team.

Each year, thousands of people undergo knee replacement surgery. Historically, joint replacement surgery is one of the most successful elective surgical procedures that we perform. With mutual goals of decreasing pain, improving function, and enhancing quality of life, we will partner with you, your orthopaedic surgeon, your primary care physician, and your support system to achieve these results.

This booklet will guide you through preparation and the early stages of recovery. It is a general guide, and your team may modify some of the instructions found here, based on your unique condition.

Keep the booklet handy and share the information with those who will provide support while you recover.

Important Phone Numbers

Surgeon Office

Main number _____

Surgery Scheduler _____

Clinical Assistant _____

After hours calls _____

Nurse Navigator (Office) _____

Holland Hospital

Joint Replacement Nurse Navigator ..... (616) 494-8338
Monday through Friday: 8 AM – 4:30 PM

Pre-admission Department
Monday through Friday: 8 AM – 4:30 PM ..... (616) 394-3775
After 4:30 PM, Monday through Friday..... (616) 394-3252

Spine/Orthopedic Unit ..... (616) 394-3225

Security (Lost and Found) ..... (616) 394-3736

Patient Financial Services
Monday through Friday: 8 AM – 4:30 PM ..... (616) 394-3122

Physical Therapy & Rehab Scheduling..... (616) 355-3930 F (616) 395-2820
M-F 7 AM – 5:30 PM

Radiology Central Scheduling..... (616) 394-3367

Information about Holland Hospital

See “Directions and Maps” section of this guidebook for parking and hospital detail.

Visiting hours

- Your designated coach should plan to be present for instruction during your stay
- We reserve the right to limit additional visitors based on your condition or hospital circumstances
- Access to the building is limited to the Emergency Room entrance (Red Lot) between the hours of 9 PM and 6 AM

Confidentiality

- Your privacy is important to us. If you do not want information released about your admission, please let us know during the admission process.
- You will be asked during the admission process to create a password. Share this password only with those individuals to whom we may release information about your condition. If friends/family need information from our medical staff, they will be asked for this password before information is released. My password is _____
- Phone calls will be routed through the nurse’s station, unless you give someone the direct phone number to your hospital room.

Food/Vending machines

The Café is located on the first floor near the gift shop
- **BREAKFAST** 6:30 – 10 AM
- **LUNCH** 11 AM – 1:30 PM
- **DINNER** 5 – 7:30 PM
- **SOUP & SALAD BAR** 11 AM – 7:30 PM
- **GRAB & GO** 6:30 AM – 7:30 PM

- **Coffee Cove** is located on the main floor near Lot 3 entrance and surgical family waiting room. The Coffee Cove is operated by volunteers and offers specialty brewed coffee and snacks. Open Monday through Friday from 8 AM to 12 PM.
- **Vending machines** see map on page 37.

Electronics/Communication

- Free wireless internet service is available throughout the hospital.
- Cell phones are allowed, but may be restricted if certain medical devices are in use.

For information on local accommodations, please visit the Holland Visitors Bureau at holland.org or (616) 394-0000 or toll-free (800) 506-1299. Many local hotels offer discounts for family members of hospital patients.

Your Care Team

Your Orthopedic Surgeon and Their Office Staff

The surgeon's office is where your journey will begin. This team will coordinate all the necessary arrangements for your surgery and provide support before and after the hospital experience.

Your Primary Care Physician, Specialists and Their Office Staff

Your primary care physician provides information and support for optimizing your general health. This is essential in the setting of elective major surgery in order to minimize risks and complications. You may be asked to optimize certain health conditions before undergoing this procedure, and they will help to support this process. Once surgery is scheduled, you will be asked to meet with this physician or a specialist such as a cardiologist, to ensure you are at your physical best before we begin this process.

Hospitalist Medicine

In the hospital setting, a "hospitalist" physician may be asked to assist in medical management for your overall health while in the hospital. Information about your in-hospital treatment will be shared with your primary care physician in the event there are any changes or complications that need follow-up once you are discharged from the hospital.

Physician Assistants (PA)/ Nurse Practitioners (NP)

These advanced practice providers may be employed by your surgeon, your primary care physician, the anesthesiologist, or the hospitalist team to support the work that they do. You may see them in the hospital or in the office setting. Know that they are an important part of the team and they act together with your physician or surgeon to manage your care.

Anesthesia Services

Anesthesia care at Holland Hospital is provided by Macatawa Anesthesia, PC. They will provide and monitor your response to your anesthesia before, during and after surgery until you are ready to be moved from the post-anesthesia care unit (PACU) or "recovery room". They will also check on you after the procedure. You will receive a separate bill for their services, and they participate with most insurance plans. If you need to contact their administrative offices, please call **(616) 399-4946**.

Nursing staff: Registered Nurses (RN), Patient Care Assistants (PCA)

Nursing staff will be engaged in every part of your journey. These professionals are not only clinical experts, but also strong patient advocates to assess, plan, implement and evaluate the care you receive.

Physical Therapists (PT), Physical Therapy Assistants (PTA)

These specialists will guide your return to activity throughout your early recovery. Sometimes this begins in the hospital; for others, at home or in the outpatient clinic. They will instruct on exercises to help protect and then strengthen your muscles through each phase of recovery.

Care Management

The care management team, made up of nurses and social workers, helps to coordinate any care or services that you may need beyond the hospital stay. Whether this is ordering equipment, scheduling home care or outpatient services, or arranging placement in a skilled nursing facility, they will work with your care team and your insurance company to ensure a smooth transition.

Holland Hospital Joint Replacement Nurse Navigator

Our Joint Replacement Nurse Navigator is a registered nurse with expertise in joint replacement surgery, dedicated to ensuring a good experience for you and your family. The nurse navigator understands each aspect of the journey from scheduling through early recovery and is an available resource for you before, during and after surgery.

Preoperative Joint Replacement Class

Our Joint Replacement Class is strongly recommended for you and your caregiver. Led by our joint replacement nurse navigator, this informative session will help you to prepare for surgery in a relaxed and interactive, in-person format at the hospital every week. An online recording of the class is also available for you to view at home or to share with family.

To schedule your in-person class, please call **(616) 494-8338**.

To view the on-line class, or to view pre and postop exercise programs, go to **hollandhospital.org/orthosurgeryrehab** or scan the QR-code below using your QR-enabled smartphone viewer:

Frequently Asked Questions

What is osteoarthritis and why does my knee hurt?

Osteoarthritis, the most common reason for knee replacement is a condition caused by “wear and tear”. This is often the result of the normal aging process, but developmental abnormalities, an injury, muscle/ligament/tendon imbalances, and even genetics can contribute to the onset and pace of this wear. In the knee, there are three compartments: medial, lateral, and patella-femoral. Arthritic changes can occur in one, two, or all three compartments. At “end-stage”, the cartilage layers that normally provide some cushion and shock absorption are worn through resulting in “bone-on-bone” changes. In addition, the “soft tissues” — ligaments, tendons, muscles — can become unbalanced, causing further instability.

What does knee replacement involve?

Knee replacement resurfaces the affected compartment(s) of your knee with an implanted device made of metal and polyethylene. In addition, the surgeon will help to balance the soft tissues to prepare for the rehabilitation phase of your recovery.

How long will this replacement last?

Today’s implants are more durable than ever. With excellent placement and proper care, most joint replacements will last for 15-20 years or more. It is important to follow your surgeon’s recommendations for activity, therapy, and follow-up over time to maximize the performance of this implanted device.

How long does surgery take?

You will be in the operating room for 1 1/2-2 hours. Preparation and anesthesia induction take about 30 minutes, and the procedure about 60-90 minutes.

How big is the incision? Will I have a scar?

The incision will be vertical over the front of the knee and as long as needed to ensure excellent placement of the implant. On average, this is 6-8 inches. If the robotic arm is used, there may be two additional 1/2-inch “pin sites” for the two global-positioning devices above and below the incision.

If a drain is used, there will be an additional puncture wound site to the outside edge of the incision.

What are the major risks?

Infection or blood clots are two major potential complications. Multiple steps are taken to minimize these risks, and they happen very rarely. Other risks are often dependent on your overall health, which speaks to the importance of optimizing these conditions before surgery to minimize these risks.

When can I expect to be walking?

With few exceptions, you will be out of bed for the first time within a few hours of surgery. This will always be with the assistance of our staff. Most are walking 100 feet with an assistive device such as crutches or a walker before leaving the hospital.

Will I need a walker or crutches?

Most will use a wheeled walker for 2-4 weeks after surgery. Crutches are a viable option for some, and this can be decided with a pre-operative therapy evaluation or in the hospital.. Eventually, you will transition to a single crutch or a cane and then to no support as you feel confident to do so. Most are allowed to put full weight on the affected leg right away; however, on rare occasions some will be asked to limit their weight-bearing for the first few weeks. If so, you may need to use the assistive device a little longer. If you already have a walker or crutches, bring this equipment with you on surgery day, otherwise equipment can be arranged prior to discharge.

Will this surgery and recovery be painful?

In short, yes! However, you have already learned how to live with some pain prior to surgery. Your postoperative pain will be different in nature, but use those coping skills to your maximum benefit. Simple things like adjusting your activity and rest patterns can be very helpful.

We use the latest "multi-modal" techniques and medications to help you manage this pain and keep it tolerable.

Will I need help at home?

Again, the short answer is "yes"! Your dedicated coach(es) should plan to be present and available for the first 48-72 hours at a minimum, and intermittently after you have a better sense for how you are moving at home. This coach will learn the skills needed by:

1) Reviewing the guidebook
2) Attending/viewing the preop class with you
3) Being present at the hospital for instructions after surgery takes place

Coordinate a team to whom you can delegate everyday tasks until you are ready and safe to take them back. See pages 10- 11 for additional details on setting up your home and your "team".

Will I need therapy after leaving the hospital?

Before surgery

- Schedule a preop physical therapy evaluation to occur 2 weeks before your surgery for one-time baseline evaluation. At this appointment:
  - Bring your guidebook and coach (recommended)
  - Bring the prescription and form found in your packet
  - Bring your walking device if you have it already, or discuss at this appointment
  - At the same time, schedule your first postop therapy appointment for 3-5 days after surgery so you are all ready to go and can arrange transportation!
- Begin the home exercises found in this book, pages 29-30 once scheduled

After surgery

- Continue the home exercises for this book 2-3 times/day
- Plan for outpatient therapy 2-3 times/week for 4-6 weeks after surgery.
- Though outpatient therapy is preferred for most, home therapy is appropriate for some, but will likely only be covered for the first 1-2 weeks. Discuss a plan with your coach and the therapist if needed.

Will my "new knee" set off security sensors at the airport or other locations that use them?

Possibly, but it will not limit your ability to travel. You do not need a special ID card, but should notify the attendants that you have an artificial joint and its location before going through the security scanners.

Getting Ready for Surgery

Medical Optimization

One of the first things to do is to schedule an appointment with your primary care physician to ensure you are physically ready for this major elective procedure. Research tells us that the better you are physically, the lower the risks for complications both during and after surgery. We may also recommend a delay in surgery until modifiable risk factors such as skin conditions, blood sugar control, weight loss, smoking cessation, and blood pressure/heart conditions can be addressed. We will partner with you and your primary care doctor on goals to minimize risk for complications. Your personal best health state before surgery helps to ensure the best outcome after surgery.

Holland Hospital's Healthy Life Programs offer a number of programs to help individuals achieve these goals. Please contact them at **(616) 394-3344** or **hollandhospital.org/healthylife**. If you are not from the greater Holland area, similar programs may be available for you closer to home.

Diet/Supplements

A diet rich in protein, fiber, and fluids will help to prepare your body for recovery both before and after surgery. Some examples:

- **Protein:** meat, soy, nuts, dairy products, things made from dried beans
- **Fiber:** fresh fruits or vegetables, whole grain breads and cereals, fiber supplements (if unable to get adequate amounts from dietary sources)
- **Fluids:** Try to drink 80-100 ounces/day. This helps with skin healing as well as bowel/bladder function.

We also recommend that you to begin these supplements for **3-4 weeks before** surgery to enhance red blood cell production and minimize the risk for transfusion:

- Ferrous sulfate, 325 mg, or elemental iron, 65 mg, once daily with food. **Please note:** this may cause constipation and/or a change in the color of your bowel movements. Modify your diet to include more fluids and fiber to minimize this side effect. If you can't tolerate this strength, a lower dose is acceptable. Check with your pharmacist for options if necessary.
- Vitamin C, 500 mg, twice daily. This helps your body absorb the iron more effectively and should be taken in two doses, not all in one, to improve absorption.
- Folic acid, 400 mcg, or a simple multivitamin without added iron that includes this nutrient.

These may be purchased at any pharmacy. A one month supply (30 tabs each of iron and folic acid or multivitamin, 60 tabs of Vitamin C) will cover what you will need before surgery. Continue taking these supplements until surgery day.

To support the healing process, continue the Vitamin C and simple multivitamin after surgery for 2-4 weeks. Additional instructions may be given at discharge, if needed.

Dental Work

Poor dentition has been shown to increase the risk for joint infection after knee replacement surgery. For this reason, we recommend completing any routine dental work a minimum of 30 days before surgery, and postponing routine dental work for 3 months after surgery.

If you have more extensive dental work to be done (root canal, crowns, implants, treatments for periodontal disease, etc.) this should be prioritized and completed before elective joint replacement. If you need urgent or emergent dental work, please notify your surgeon's office as soon as possible to determine if it is still safe to proceed with joint surgery, or if surgery should be delayed.

After surgery, previous guidelines recommended the use of antibiotics one hour before any dental work. Although recommendations for this practice have recently changed, there are circumstances when it is still recommended, especially if you are at a higher risk for infection (diabetics, immunocompromised, etc.). Confirm with your surgeon what is recommended for you prior to your dental appointment so the medicine can be prescribed and taken before you get to the dentist's office.

Pedicures/Manicures

Pedicures/manicures or diabetic foot care appointments are allowed prior to surgery. Artificial nails or decorative elements that could become loose should be avoided. Polish should be without chips or flakes.

Steroid Use

Steroid injections into the surgical joint should be avoided for 3 months prior to surgery. Other steroid injections (alternate joint, spine, etc.) or use of

oral steroids such as prednisone in this same time frame should be discussed with your surgeon before choosing to use them.

"Pre"habilitation

Though it can be challenging due to pain and stiffness, maintaining muscle tone and strength is important before surgery and proven to help with your recovery and outcome. This rarely requires formal therapy, but you can do these things to help yourself:

- Begin the home exercise program when surgery is scheduled
- Continue with walking, but adapt to shorter distances and add an assistive device to off-load the sore joint if needed
- Consider adding low impact options like swimming or biking while you wait for surgery
- A single preop visit with the therapist you plan to use after surgery provides an important baseline evaluation to help customize your postoperative treatment plan. This is required for knee replacement surgery. For hip replacement surgery, this evaluation may be optional based on your surgeon's recommendation and treatment plan.

Temporary Disability Forms/Parking Permits

Family medical leave applications (FMLA) or disability forms for you or your caregiver should be obtained in advance from the employer. These forms should be completed prior to surgery by your surgeon's office. There may be a charge for completion.

Disability parking permits are generally discouraged as we want to encourage mobility. However, when circumstances warrant it, the surgeon's office has the forms available to start the process. There are two sections: one for you to complete and one for the surgeon to complete to certify the need. You will then need to bring the completed form to the local Secretary of State branch to obtain the placard.

Please allow 5-7 days for completion of these forms.

Pre-admission Testing from the Hospital

You will receive a call from a registered nurse from our Pre-admission Testing department 2 weeks prior to surgery. In this call, they will:

- Review your medical and surgical history
- Review your list of all prescription and non-prescription medications or substances that you ingest on a regular basis
- Review instructions for the day of surgery related to diet, fluids, medications and any skin preparation that needs to be completed
- Review arrival time and parking instructions
- Answer any other concerns that you have about the day of surgery.

Some will be asked to schedule an on-site appointment to complete this process, based on your medical condition. Your surgeon will help to arrange this appointment if it is required by anesthesia or preferred by you or your surgeon.

Patient Reported Outcomes

As part of our participation with the Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI) and our commitment to quality patient outcomes, you will be required to complete some survey questions at three intervals: in the 90 days before surgery, 1-3 months postop, and 1 year postop. These "patient reported outcomes (PROs)" surveys help to quantify your joint pain, function, and their impact on your general health and well-being. Measuring over time helps to validate the outcome of this surgery. These surveys are becoming mandatory for many payers as well as part of the pre-authorization process.

These standardized questions will come to you by email; if not completed, you may be contacted by phone to complete them.

(Sample question)
Function, daily living

The following questions concern your physical function. By this we mean your ability to move around and to look after yourself. For each of the following activities please indicate the degree of difficulty you have experienced in the last week due to your knee.

6. Rising from sitting

☐ None ☐ Mild ☐ Moderate ☐ Severe ☐ Extreme

7. Bending to floor/pick up an object

☐ None ☐ Mild ☐ Moderate ☐ Severe ☐ Extreme

Creating an Advance Medical Directive

An advance medical directive (or a durable power of attorney for healthcare decisions) is a means of communicating to all caregivers the patient's wishes regarding health care. It is a legal document that can do two things:

- Identify a patient advocate to communicate your wishes if you are unable to do so
- Outline specific instructions for care you want or do not want in the event of a medical emergency

You are not required to haven an advance medical directive, but we do encourage it. If you have one, you will be asked to provide a copy to the hospital on admission. If you don't, the hospital can provide a copy of the form "Making Choices Michigan" for you to complete prior to admission, by calling Spiritual Care Services department at **(616) 394-3362**, or the nurse navigator at **(616) 494-8338**. You may also download the form for free at **mihin.org/advance-care-planning-resources/.**

Discharge Planning

Steven Covey, in his book "The Seven Habits of Highly Effective People" states "Begin with the end in mind!" Discharge planning begins when surgery is scheduled. Having a good plan in place will make you feel more prepared and in control. Plan for discharge to home with the support of your designated coach(es), having set up your home for safety and ease of movement before you come to the hospital.

Most people having knee replacement can recover very effectively and safely at home, provided they have a solid plan in place. Research shows that those who recover in their own environment have a lower risk for complications such as infections, readmissions, and trips to the emergency room.

Our nurse navigators are available to guide this process of preparation and can discuss community resources, insurance coverage, transportation and therapy options, and any other concerns that you have as you prepare.

If it becomes evident that you need additional services beyond the hospital setting, such as home-based nursing/rehab services or placement in a skilled nursing facility, our care management team will be available to assist with setting up these services.

Setting Up Your Home/Delegating Tasks

Preparation is the key to a successful recovery. The more energy you put into planning and preparing, the smoother this process will be. Consider the following:

- What tasks am I responsible for daily? weekly? monthly? Who can I assign them to until I am physically and emotionally ready to take them back?
- If my ability to walk long distances and carry items is limited, who could help? Who will care for my pet(s) or small children until I can walk, feed, lift them safely?
- Delegate heavier tasks such as yard work, snow removal, setting out the trash, laundry, trips to the grocery store and driving for 4-6 weeks.
- Plan for transportation for 4-6 weeks until you have the muscle control and the reaction time you need to operate a vehicle safely. You should be off pain pills before driving.
- Stock your pantry or freezer with easy-to-prepare meals in advance, or welcome assistance from friends or family who want to help!
- Decrease your risk for slips, trips or falls:
  - Install or tighten railings for stairs
  - Remove throw rugs and similar hazards from traffic areas
  - Use night lights for dark rooms or hallways
- Place frequently used items at counter height limiting the need to reach, bend, squat or kneel
- Designate a comfortable seat with armrests and an ottoman/footrest to use during recovery. Set a table close by for easy access to things you might need.
- Plan to limit full flights of stairs for the first week or two until you are strong enough to use them safely, though you will practice using stairs before leaving the hospital. If unsteady or uncertain, have someone follow you up and lead you down until you feel confident.
- In the bathroom:
  - A raised toilet seat with armrests or a commode will make it easier to get up and down
  - A shower seat or transfer bench, a grab bar at the point of exit/entry to the shower, and a non-skid mat on the shower floor may help to prevent “slip-and-fall” events.

Borrow or purchase the following:

- A walker with 2 wheels on front and glider brakes on back is preferred.
- Crutches are an option for some.
- The handheld devices (as pictured below) are called a “hip kit” and are optional; however, they can be helpful after both knee and hip surgery for dressing, bathing, and reaching. They can be purchased online, at some pharmacies, and at medical supply companies either individually or as a set. They are not covered by insurance.

Hip Kit

Checklist

4 weeks Before Surgery

- Begin exercises (pages 29-30) and supplements (page 8)
- Schedule preop therapy evaluation appointment for 2 weeks before surgery (see page 7)
- Complete lab work and see family doctor for pre-operative medical clearance
- Confirm availability of coach(es) for class appointment date/time, day of surgery for education and transportation, and 24 hour presence for the first 48-72 hours
- Begin the process of delegating tasks, reassigning work responsibilities, etc.

2-4 weeks Before Surgery

- Attend, or view online, the preoperative joint replacement class
- Contact nurse navigator or office staff with any questions as you prepare
- Attend your preop therapy evaluation and schedule your first postop appointment. **Bring the enclosed prescription and form with you to the appointment**
- Gather any equipment to set up home for recovery
- If you are unable to borrow a 2-wheeled walker or crutches and need to purchase one, request a prescription from your surgeon's office and purchase in advance

Day Before Surgery

- Expect a call or text from pre-admission testing to review instructions between 2 and 4:30 PM. If you need to call them instead, call **(616) 394-3775** (between 2 and 4:30 PM) or **(616) 394-3252** (after 4:30 PM).
- Use the CHG wipes provided to you, following the printed instructions.
- Sleep in freshly washed clothing and bed sheets after cleansing.
- Follow the instructions for medication, fluids and diet carefully
- Follow instructions for CARB loading **if asked to do so.**

Carbohydrate Loading before Surgery

Applicable for non-diabetics and type 2 non-insulin dependent diabetics.

What is carbohydrate loading?

Carbohydrate is a source of energy. "Loading" means making sure your body has carbohydrates. Drinking carbohydrates the day before and the day of surgery can help provide energy for healing and improve recovery.

Why is carbohydrate loading important before surgery?

- Your body needs energy for healing after surgery. If your body cannot get enough energy from carbohydrates, some of the protein in your muscles may start to break down. This can make you feel tired and weak. This can also delay how fast your incision heals.
- Carbohydrate helps control blood sugar levels. This is important even if you do not have diabetes.
- Carbohydrate loading may also help prevent nausea and vomiting following surgery.

What carbohydrate will I use for loading to prepare for my surgery?

- 100% white grape juice — any brand. (An alternative is a product called 'ClearFast' that can be purchased online)

  Day before Surgery
  - At dinnertime, drink 10 oz.
  - Again at bedtime, drink 10 oz.

  Day of Surgery
  - Drink 10 oz. no later than 3.5 hours prior to scheduled arrival time.

Morning of Surgery

- Complete the second application of CHG, using the wipes and instructions provided
- Do not apply lotions, powders, or cosmetics; deodorant is acceptable
- Follow instructions for diet, medication, and mouth care carefully to avoid surgery delays
- Arrive at hospital at the designated time (usually 1.5-2 hours prior to surgery time).

Things to Bring to the Hospital

- This guidebook
- Advanced Directive
- Your driver's license or photo ID
- Your insurance card
- A list of any medication changes or treatments in the month before surgery
- Personal care items
  - CPAP machine if you use one at home for sleep apnea
  - Eyeglasses (all contacts will need to be removed)
  - Hearing aids/batteries
  - Anything you might need for spending the night in the hospital, regardless of planned admission status
- Attire
  - Gym shorts or loose-fitting pants that fit loosely around the hip, an elastic waistband is easiest
  - Underwear with wider leg openings
  - Comfortable top; a light outer layer if you run cold
- Footwear
  - Loose-fitting shoe or sandal (enough to accommodate a leg wrap and possibly swelling) with a non-skid sole and a back to help it stay on your foot
- Equipment
  - A walker with 2 front wheels is preferred for most, but a standard walker or crutches is often workable. Bring what you have with you.

Do not bring jewelry or other valuables, large amounts of money or credit cards, medications (unless you are advised to do so).

Anesthesia Care

There are two types of anesthesia available for joint replacement surgery: spinal or general. The decision for which is best is dependent on many factors, and your anesthesia provider will discuss these with you the morning of surgery.

- **Spinal anesthesia:** This option is the most common of the two. The anesthesia staff will first numb a spot on your lower back to make the next injection less bothersome. Then they will inject the local anesthetic into the spinal fluid around the spinal cord, eliminating sensation and movement from about waist level down to your toes.

  In addition, they will add some medication in your IV to affect your awareness during surgery. This medication can be adjusted to keep you lightly sleeping or deeply sleeping, depending on your preference. Talk to your anesthesia provider about this the morning of surgery.
- **General anesthesia:** If a spinal anesthesia is not a good option for you, a general anesthesia may be used. You will receive a medication to sedate you, a breathing tube will be placed, and the anesthesia is maintained with a combination of IV medication and gases. The effects will be reversed at the end of the procedure, the breathing tube removed, and you will begin to wake up in the PACU (Post-anesthesia recovery unit, our "recovery room").

The most common side effects of anesthesia include:

- Nausea and/or vomiting
- Sleepiness/sedation
- Dizziness

If you, or an immediate family member, have had difficulty of any kind with anesthesia in the past, be sure to inform your anesthesia provider on the morning of surgery. They can adjust the plan accordingly to attempt to minimize these side effects.

If you want to request a specific anesthesia provider, discuss this with the Pre-admission testing nurse who contacts you from the hospital. We will attempt to honor these requests, although they cannot be guaranteed.

Anesthesiologist's Role in Pain Control

Your anesthesia care team also contributes to the multi-modal pain control plan.

Before anesthesia begins, they will offer 2 "blocks" to support postoperative pain control. The adductor canal block helps with pain in the front of the knee, and the I-pack block helps with pain in the back of the knee. You will have some effect from these blocks for 8-18 hours after surgery. These blocks will not completely eliminate pain, but will compliment the other medications and treatments used to keep it manageable.

If you are currently treated with opioid medications or at a pain clinic for chronic pain, **please** discuss postoperative pain management with your treating physician and have a plan in place. Share this plan with both your surgeon and your anesthesiologist so they can plan your care accordingly.

Recovery

Surgery is complete, and now the recovery can begin!

The first 1-2 hours are an important time of transition from the effects of surgery and anesthesia. Our nursing staff will monitor you closely and be available to assist you as needed.

Same Day Discharge

Once stabilized, you will be moved to our extended recovery area, and your coach will be allowed to join you there.

Diet

When it is safe to do so, we begin with a clear liquid diet, and advance to more solid food as soon as you can tolerate it.

Over the next 3-4 hours, we will help you achieve the discharge goals to ensure a safe discharge to home.

Overnight or extended stay

For those needing additional time or medical monitoring, you will be transferred to the Spine and Orthopedics Unit (Level One). Your caregiver may accompany you there.

One settled into your private room, the nursing and therapy staff will be working toward the same discharge goals, but over an extended period of time.

If medical monitoring is needed, you may be evaluated by a member of our hospitalist team. They will partner with your surgeon to ensure a safe recovery and recommend any changes in medical management while in our care.

Rest

Though you may be tempted to test out your new joint, take time to rest. Space activity in small events every 1-2 hours, rather than extended periods of activity or overdoing exercise.

Blood Loss

Significant blood loss may occur during joint replacement surgery, and this can continue during the early days of recovery. Transfusions were common in years past but, with current methods, the incidence of transfusion is <1%.

If a drain is used, it will be visible as a small canister near your incision, and this will be removed before you leave the hospital.

If your blood count is lower than normal, you may tire easily, appear pale, weak, or light-headed especially with position changes. Your blood counts will build back to normal over the first few weeks, and you can help this progression with a healthy diet, adequate rest and fluid intake.

Deep Breathing

You will be provided with an incentive spirometer to use every hour while awake until you are more active and off pain medication. This ensures you are expanding your lungs well and minimizes the risk for complications like pneumonia.

Goals for Safe Discharge

- Tolerate food and fluids
- Transfer in and out of bed, car
- Transfer up and down from chair/toilet
- Walk a minimum of 100 feet with the walker or crutches
- Ascend and descend the number of stairs needed to enter your home
- Review all discharge and medication instructions with you and your caregiver

This is an important time for both of you to ask questions and practice for continuing your recovery at home.

Daily Reminders for Early Recovery

Do your ankle pump exercises every hour while awake for the first few weeks

Do your home exercise program 2-3 times/day for the first 4-6 weeks (pages 29-30)

Add short walks 3-4 times/day, adding distance as tolerated

- Use your walker/crutches as instructed
- *If advised to limit weight-bearing*, use your walker at all times until seen in the office for further evaluation.
- If no weight-bearing restriction, progress from full weight-bearing with the device, to full weight-bearing for short distances without the device, and gradually increase distance as pain and stability allow

Reposition your leg and/or change positions every few hours

- Alternate between having your leg straight and bent throughout the day
- While leg is straight, use the wedge pillow or a towel roll under the ankle to encourage a good "stretch" behind the knee and to limit swelling
- Avoid using a pillow under the knee to keep it flexed, though it may feel better. This can affect circulation and also contribute to knee stiffness.

Manage Your Pain Effectively

Effective pain management is an important key to a successful recovery. Keeping pain at a tolerable level is the goal.

We build on the experience that you've had managing your joint pain before surgery. Though postop pain is different, you've likely found that these tools are part of your pain management experience:

- Activity modification
- Rest periods
- Ice
- Elevation
- Relaxation techniques
- Medication

All are important tools for your postoperative journey as well! Helpful hints:

- Alternate periods of rest and activity throughout the day, not all at once!
- Use your ice packs while you are sitting or lying down; remove when walking or doing exercises.
- Though some swelling is normal, controlled swelling helps with pain control. Reposition, rest, elevate repeat!
- The Care Channel is a free resource for soothing music, guided imagery, white noise, all geared toward healing and relaxation. Find it at: **https://hollandhospital.carechannel.net** and use the code: **hh4657**
- Prioritize the use of non-opioid medications first, saving opioid medications for pain that isn't manageable with all of these other methods. Review your discharge instructions for additional guidance.

Prescription Refills

Please note that prescription refill requests will only be managed during normal business hours and require a minimum of 48 hours. Opioid prescribing laws require signed consents for any new opioid prescription and limitations for the size and duration of prescriptions. Plan ahead!

Safe Medication Disposal

If you have opioid medications or other controlled substances that you no longer need, please dispose of them promptly and properly to avoid unsafe diversion of these drugs. Police stations, county health departments, and some pharmacies have secure disposal programs, or see **michigan-open.org/takebackmap/** or **miottawa.org/substanceuse** for more detail.

If this is not an option, do not dispose of them in the sink or toilet. Instead, do the following:

1) Remove pills from the container, and destroy label
2) Place pills in Ziploc bag; mix pills with kitty litter or used coffee grounds and dishwashing soap.
3) Seal the Ziploc bag and dispose in household trash.

Pain Journal

The pain journal on the next page can be used to track the various medications you are using and frequency. It may also help you identify patterns in your body's response to them.

Pain Journal

Drug names			
How many?			
How often?			

Date	Time	Pain Score (0-10)	Medication used/how many?	Next available time:

Date	Time	Pain Score (0-10)	Medication used/how many?	Next available time:

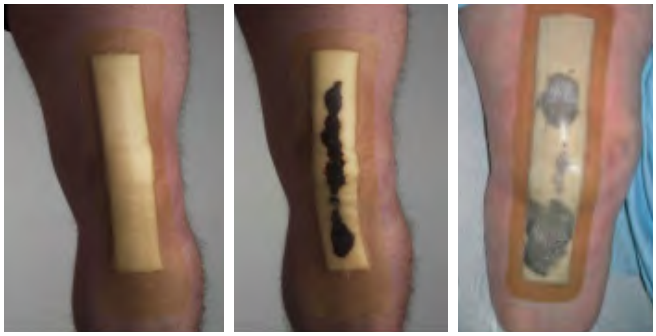
Incision Care

- The occlusive dressing is designed to stay in place until you are seen in the office. If the edges start to lift, they may be secured with waterproof first-aid tape.
- If you notice the following, contact the surgeon's office for further direction:
  - The edges become loose enough for dirt or water to reach the absorbent pad
  - The center pad in the dressing gets wet in the shower
  - There is new drainage reaching the borders of the absorbent pad

  If any of these things happen, you may be asked to remove the dressing and purchase sterile gauze and tape supplies to cover the incision until you can be seen in the office for an evaluation to insure the wound is adequately protected.
- If a drain is used, there will be a separate dressing on this site. This may be removed 5 days after surgery if there is no active drainage; if drainage, use a band-aid to cover this site until sealed, or contact the surgeon's office or the navigator for additional guidance.
- If the robotic-arm is used, the pin-sites may have separate dressings, or be incorporated under the larger dressing. These should also remain covered until seen in the office as they likely have a small stitch.
- If an alternate dressing is used (gauze/tape, PICO® dressing, Wound-VAC®, etc.), there will be specific instructions for you to follow.
- If staples are used, they are removed at your surgeon's office appointment 12-16 days post-surgery. If you have home nursing care or remain in skilled nursing care, staple removal may occur in this setting with a follow-up in the office around 4 weeks post-surgery.
- If dissolvable sutures or glue is used, no removal is needed. However, the steri-strips should remain in place until they fall off on their own.
- You may shower as long as the occlusive dressing remains intact. Keep the dressing out of the stream of the shower as much as possible. If you do not have an occlusive dressing (i.e. gauze and tape), you may still shower but will need to keep the incision dry when showering.
- You should not immerse the leg in water until 1) staples are removed, and 2) the wounds are well sealed over. This usually takes 3-4 weeks.
- You should contact the surgeon's office if:
  - Increased redness or swelling around the wound
  - New drainage of any kind that saturates the pad of the dressing
  - Drainage that is different in color, odor, or amount
  - Fever greater than 101°F

Wound issues can usually be managed effectively during business hours. However, for more urgent changes in condition of the wound, please contact the office phone number **before** proceeding to the ER or urgent care for direction. The on-call physician or physician assistant/nurse practitioner will help to determine if this additional visit is indicated.

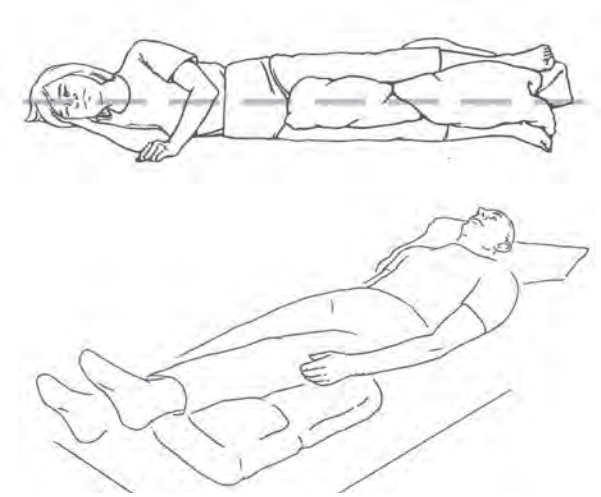
If you seek treatment for a wound issue outside the Holland Hospital system, please have the treating physician notify the surgeon of your treatment, or contact the office on the next business day.



Sleep Disturbance

Sleep disturbance is common during the first 2-3 weeks after surgery; expect it, and know this will improve with time.

- Avoid daytime naps if you can
- Expect to reposition frequently while in bed. Use pillows to elevate your lower leg above your heart when on your back, or between your legs when on your side.
- Position changes: Repositioning your leg, stretching, or taking a walk can help with stiffness/soreness in your leg. Changing the position of your knee every hour or more helps to alleviate stiffness as your knee begins to get more swollen. Remember to work on full extension (straightening) while at rest, and on flexion (bending) when walking and exercising.
- Relaxation techniques: Deep breathing, meditation, rest breaks, simple diversions, and music are examples of relaxation techniques that can help with pain management.



Transportation Options

Driving yourself is hard to give up, but you should not drive until you are:

- Off pain medications
- Can operate a vehicle safely and are fully aware of your surroundings
- Have sufficient leg strength to operate the gas and brake

Arrange for transportation for things like therapy/doctor appointments and necessary trips out of the home in advance. Ride share options should be in a vehicle you can easily enter/exit with your limitations, so choose wisely. Wheelchair vans or other public transportation options can be explored and arranged in advance.

Plan for 2-6 weeks, especially if this is your right leg and/or if you use a vehicle with a manual transmission.

Preventing Complications

These preventative measures help to decrease the risk of complications during your early recovery.

Constipation

Constipation is one of the most common complications of this surgery. Inactivity, changes in diet and normal activity, and the effects of anesthetics and pain medicine all contribute to this risk. In order to prevent this complication (all options available over the counter):

- Increase your fiber intake (higher fiber cereals/breads, fresh fruit/vegetables, or a fiber supplement) and your fluid intake to add bulk and keep stool soft
- Prune whip is a food-based natural laxative; try this recipe or add prunes/prune juice to your daily routine:

Prune Whip Power Pudding

Blend together (in a blender)

2 cups applesauce
1 1/2 cups pitted dried prunes
1 1/2 cups strawberry jam or preserves
7 ounces All Bran cereal

Stir in:

3 ounces light corn syrup
1/4 teaspoon ground cloves
1 teaspoon cinnamon

Take 2 tablespoons twice a day as needed. Store in refrigerator or freezer.

- Use a stool softener (docusate sodium 100 mg twice daily is one example) or a stool softener plus stimulant (docusate 50 mg plus 8.6. mg sennosides is one example) as long as you are on regular doses of pain medicines, and then taper off as soon as you are able.
- If you have not moved your bowels 2-3 days after surgery, add Milk of Magnesia® 30mL
- If you have not moved your bowels by the next day, take Miralax®, one capful
- If still no result, use one Dulcolax suppository rectally

Swelling/Stiffness

You will likely have significant swelling in your knee and lower leg, and it will likely persist for weeks, not just days. This can usually be managed with a combination of icing, elevation, and pacing activity throughout the day. Take time to elevate the leg throughout the day by lying down and positioning the leg on pillows in a fashion so the knee is extended (flat) and the ankle is higher than the level of your chest. An elevation wedge will be provided to you. Use frequently to reduce swelling and encourage knee extension.

Though it may feel like a full-time job at times, this practice will help you to conserve energy, minimize pain, swelling, and stiffness throughout the day. If your swelling changes in intensity, is associated with redness, new or excessive warmth/fever, or new calf pain, and it does not resolve much with ice/elevation/rest, contact your surgeon's office for additional direction.

Frequent mobility and exercises help to alleviate stiffness. Practice small sessions throughout the day. Make a goal to be up and moving somewhat every awake hour.

Preventing Blood Clots

Blood clots can form in the leg after any surgery, but there is increased risk with surgeries involving an extremity. A blood clot in the leg or arm is called a deep vein thrombosis (DVT). If it breaks off and travels elsewhere in your body, it can cause myocardial infarction (MI)/"heart attack", a pulmonary embolus (PE), or a stroke (CVA)/ trans-ischemic attack (TIA).

- While in the hospital, you will be fitted for sequential compression devices (SCDs) while in bed to promote circulation. They will be removed when walking and discontinued at discharge.
- Continue with frequent position changes and with the "calf pump" exercises every hour while awake to promote circulation in your legs.

Aspirin (not acetaminophen or ibuprofen) is used for 6 weeks after surgery to help prevent blood clots, unless you are using a prescription blood thinner. The normal dose is 81mg twice daily, but your individual instructions may vary. However, if you are at higher risk, a different dose or a different medication may be recommended. If you use a blood-thinner for other medical conditions, this will be modified both before and after surgery. Follow the specific instructions from your surgeon for this purpose.

Preventing Pneumonia/Lung Congestion

You will be provided with an incentive spirometer in the hospital, and instructed in how to use it. It is important to continue using the incentive spirometer and the practice of regular coughing and deep breathing at home until you decrease the frequency of pain medication and increase your activity.

Regular use of opioid pain medication can decrease the depth and quality of your breathing, which can lead to impaired oxygenation or even pneumonia.

We will use a special monitor in the hospital to ensure you are getting the oxygen you need to heal.

Remember, shortness of breath can be a sign of a blood clot or other serious complications-seek urgent treatment for this symptom.

If you have the following symptoms, contact the surgeon's office for additional direction BEFORE going to emergency or urgent care.

- Swelling in the thigh, calf, or ankle that doesn't improve with icing and elevation
- New redness, firmness, heat or tenderness, most commonly in the back of your leg, but potentially in the upper leg
- Deep muscle ache in the calf that worsens with flexing/extending the ankle
- Your care provider can help to triage the situation and provide direction on treatment.

Heart attack or stroke can be a life-threatening emergency. Contact 911 for transport to the nearest emergency room without delay.

Symptoms of a PE or heart attack include:

- Sudden onset shortness of breath or chest pain
- Difficulty catching your breath, or rapid shallow breathing

Symptoms of stroke or TIA include (using the "BE-FAST" acronym):

- **B**alance: sudden dizziness or loss of balance or coordination
- **E**yes: sudden trouble seeing out of one or both eyes
- **F**ace: sudden drooping of one side of the face, or an uneven smile
- **A**rm: sudden weakness of one leg or arm
- **S**peech: sudden trouble speaking, or garbled speech
- **T**ime: note the time of onset of symptoms and call 911 immediately

Post Surgery Zone

Every day you should...

- Take your medicine as directed (call with any questions)
- Balance your activity with your need for rest breaks throughout the day
- Follow your home exercise/walking program as instructed

Which zone are you in today?

GREEN ZONE

ALL CLEAR

NO ACTION NEEDED

- Fever below 100.5 degrees
- Swelling and/or bruising is present, but stable and controlled with ice and elevation
- Pain is present, but tolerable with medication and/or activity modification/rest
- Slight decrease in appetite; choose nutrient and fiber-rich foods to support recovery
- Sleep challenges for the first couple of weeks (likely due to medication side effects, difficulty with positioning/comfort); sleep should improve with time

YELLOW ZONE

CAUTION

CALL HEALTH CARE PROVIDER

Provider Name: _____ Phone: _____

Call your surgeon's office, nurse navigator, home health nurse or another provider from your health care team **before** going to urgent care or an emergency room.

- Fever above 101 degrees or alternating chills/temperature spikes
- New rash, redness, bogginess (skin/tissue that feels "spongy") or excessive drainage/bleeding from wound
- Pain that has worsened or isn't manageable with medication and other interventions
- No bowel movement in three days or diarrhea that doesn't subside
- Nausea/vomiting/dizziness that doesn't subside or seems related to medication use
- Trouble passing urine, urinating small amounts often, or pain or burning with urination
- Fall or twist without noticeable or significant injury

RED ZONE

DANGER

CALL 911 (MEDICAL EMERGENCY)

- Sudden shortness of breath/difficulty breathing
- Chest pain
- Coughing/throwing up blood
- Uncontrolled bleeding
- Fall or twist with noticeable or significant injury
- Mental status changes, such as confusion, extreme tiredness, or fainting
- Stroke symptoms (use the BE FAST acronym found in your guidebook: Balance, Eyes, Face, Arm, Speech, Time)

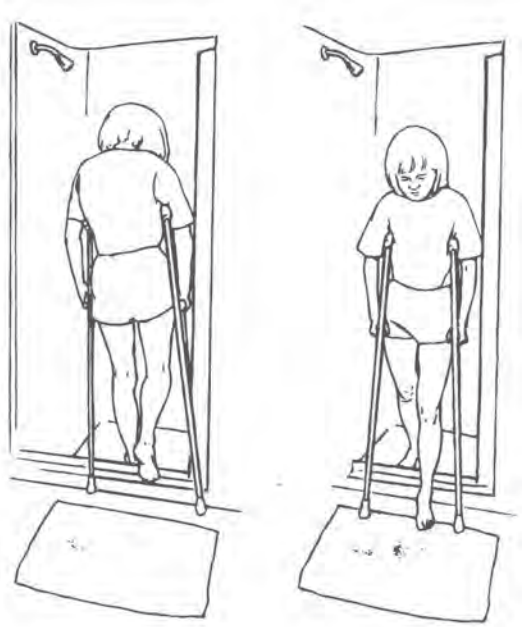
Helpful Hints for Activities of Daily Living (ADL's)

Bathing

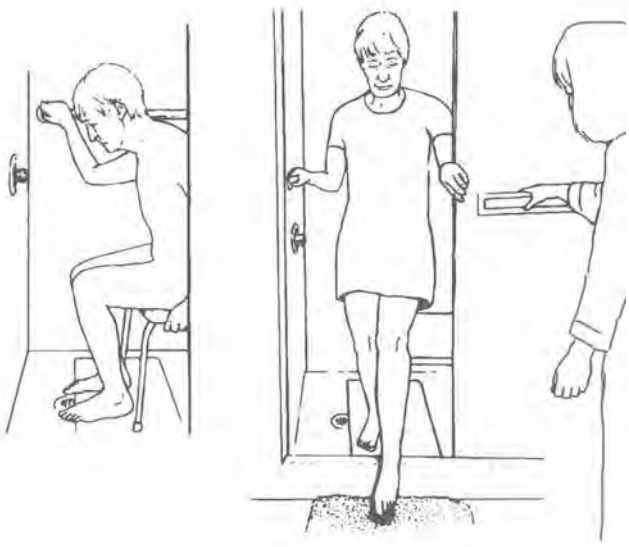
You will be allowed to shower in most cases, as long as the occlusive dressing is intact. Safe access in and out of the shower will be your biggest challenge.

Recommended equipment: non-skid mat on floor, grab bar or person near point of entry/exit,

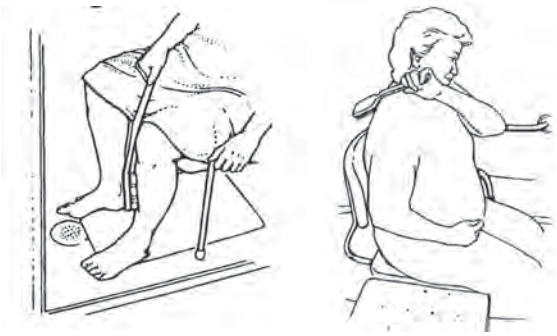
Optional equipment: seat or transfer bench in shower, handheld shower head, necessities within reach without twisting/reaching, long-handled shower sponge.



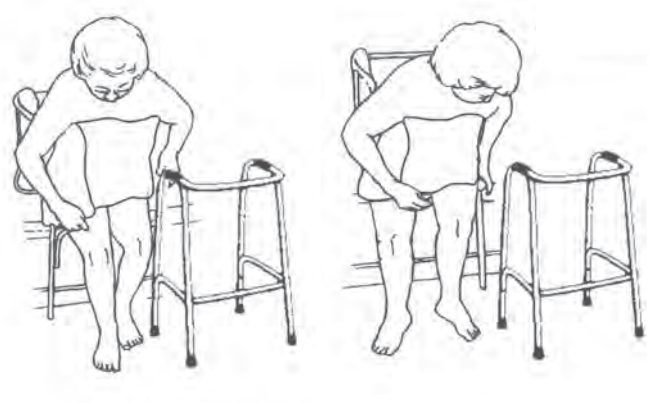
Using crutches to enter/exit



Chair, handrail, stand-by assistant



Using long-handled equipment



Using transfer bench to enter/exit tub

Dressing

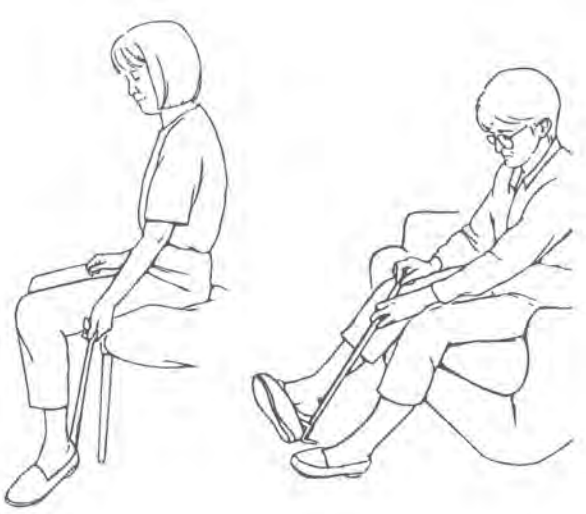
You should be fairly independent with upper body dressing, but lower body dressing may present some challenges until you can bend your knee and raise your leg more comfortably. Ask for help until you are able to accomplish these tasks independently. Optional equipment: dressing stick, sock-aid, reacher, long handled shoehorn.

The "hip kit" (pictured below) contains tools that might help with dressing and bathing while you recover. Though not covered by insurance, these items can be purchased as a kit or individually online, in some pharmacies, and in medical supply companies.

Hip Kit

Putting on pants using dressing stick or reacher

Putting on socks using sock aid/reacher



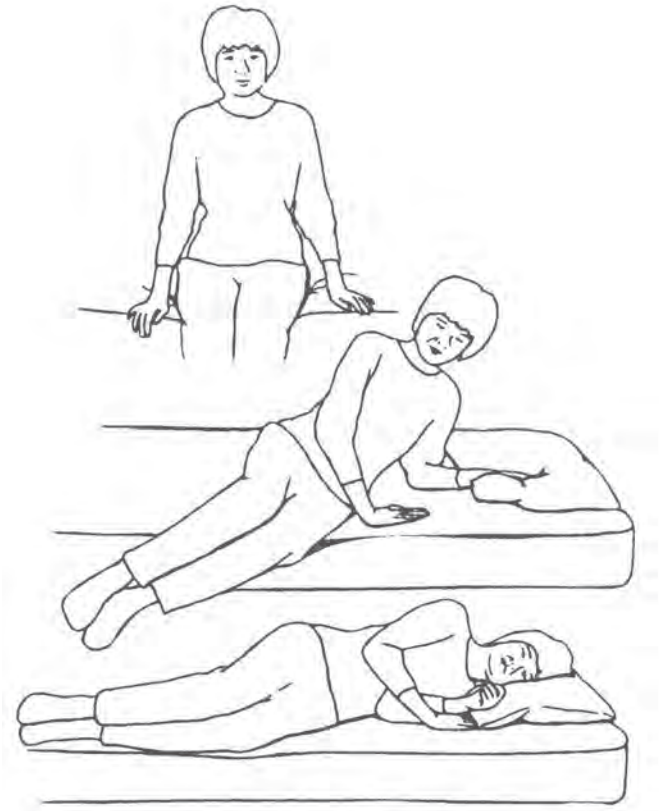
Shoes on/off using dressing stick, long-handled shoehorn

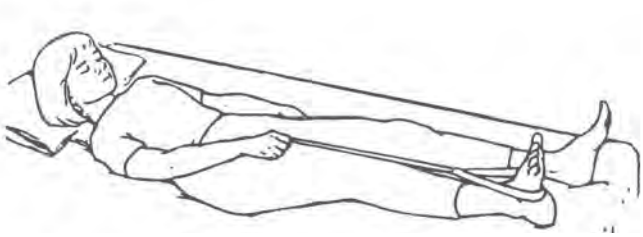
Moving In and Out of Bed

Moving in and out of bed will be easier if you have someone or something to lift your leg in and out of bed until your thigh muscle is stronger. Getting in on the side of the bed that allows you to bring your "good" leg in first is generally easiest

Optional equipment: cane, leg lifter, exercise band

Move to the edge of the bed first, and then begin the process of getting in or out. It is often easier to exit the bed on the side that allows you to start with your "bad" leg first.

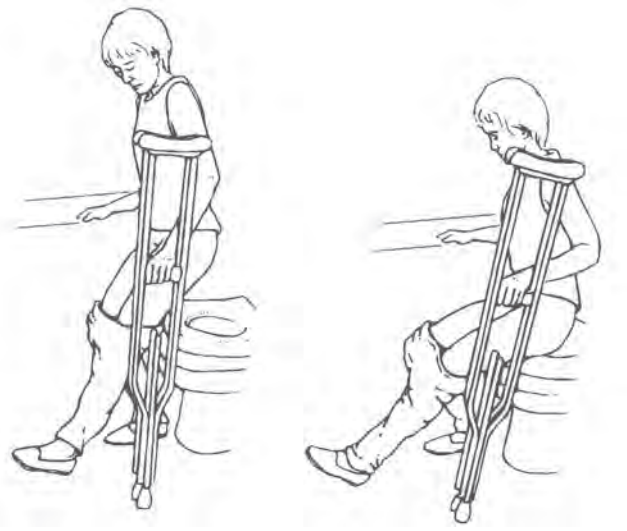




Up and Down From Chair/toilet

Getting up and down from a chair will be more difficult until your thigh muscles are stronger. Use a chair with arm rests to engage your arms in the process. A recliner and/or a chair with a higher, firmer seat makes getting up and down easier.

Arms on chair to stand, then reach for walker

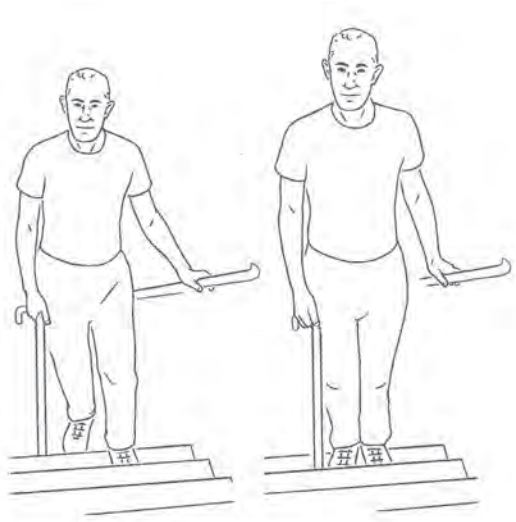


Railing one hand, crutches the other hand

Use caution when pulling up pants

Stairs

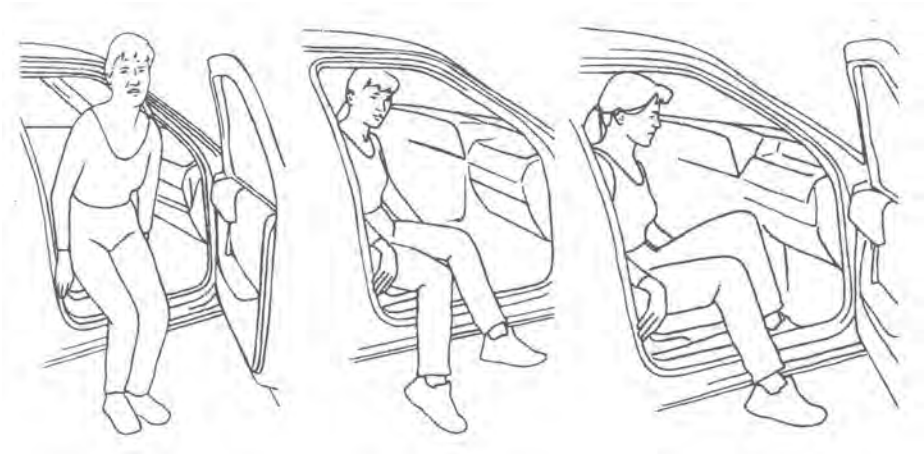
Lead with the "good" leg first going up stairs; lead with the "bad" leg first going down stairs. Use the stronger leg as your "good" leg if you've had both knees replaced or if your other knee is also unsteady.



Begin with one step at a time; advance to foot-over-foot technique

Car Transfers

A vehicle that sits up higher and has an adjustable front seat will be easiest. It is best to sit in the front seat so you can use the seat belt. If fabric seats, a plastic bag on the seat can make it easier to slide or pivot into the seat.



Pre-operative and Post-operative Home Exercise Program (HEP)

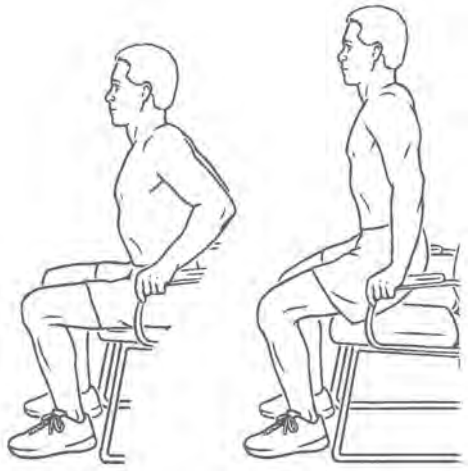
The following exercises can and should be used by anyone to begin the process of stretching tight ligaments/tendons and toning the muscles that will be used in recovery. They can be started anytime, but certainly by 3-4 weeks before surgery.

If you have a pre-operative therapy session with a physical therapist, they will evaluate your current strength and range of motion and may tailor this exercise program to meet your specific needs.

1) Armchair push-ups (pre-op only)

Sitting in a sturdy armchair with feet flat on the floor, scoot to the front of the seat and place your hands on the armrests. Straighten your arms raising your bottom up from seat as far as possible. Use your legs as needed to help you lift. As you get stronger, progress to using only your arms and the "non-operated" leg to perform the push-up. This will be how you will get up from a chair after surgery. Do not hold your breath or strain too hard.

Perform 2 sets of 10 reps.



2) Ankle pumps

Flex and point your feet.

Perform 20 reps.

3) Quad sets (knee push-downs)

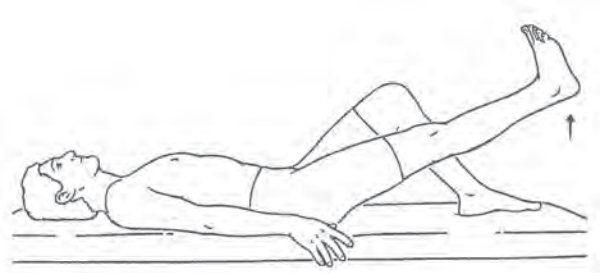
Lying on your back, press knees into the mat by tightening the muscles on the front of the thigh (quadriceps). Hold for a 5 count. Do NOT hold breath. You may perform with both legs if desired.

Perform 20 reps.

4) Straight leg raises

Back lying, with the unaffected knee bent, and foot flat. Tighten the quad on the affected leg and lift the leg 12 inches from the surface. Keep knee straight and toes pointed towards your head.

Perform 2 sets of 10 reps.



5) Short arc quads

Lying on your back, place a 6-8 inch roll under the knee. Lift the foot from the surface, straightening the knee as far as possible. Do not raise thigh off roll. You may perform with both legs if desired.

Perform 2 sets of 10 reps.

6) Heel slides (slide heels up and down)

Back lying; slide your heel up the surface toward your buttocks by bending your knee.

Perform 20 reps.

7) Seated knee flexion

Sitting in straight-back chair, bend the affected leg as far as possible under the chair (you can use the opposite foot to help). When maximum bend is reached, plant the foot and slide your hips forward further bending the knee. Hold for 20-30 seconds.

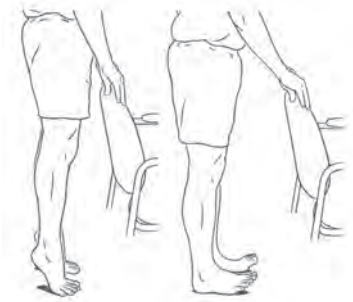
Repeat 10 times.

Post-operative Advanced Exercise Program

Continue with exercises #2-7 from the previous page; #8-10 will be added with guidance from therapy.

8) Standing heel/toe raises

Using support, gently rise up on toes.
Progress to rocking back on heels.



9) Standing marches

Raise and lower surgical limb.

10) Standing 2-way hip

Squeeze glutes. Straighten knee.
Move leg out to the side. **Hold onto a support.**

Straighten knee. Flex surgical limb forward no more than 45°. **Hold onto a support.**

On days that you will be working with the therapist, you should complete the full set of exercises twice daily.

On the days when you don't work with the therapist, do the exercises three times a day. These sessions should be spaced into morning, mid-day, and evening with rest breaks in-between.

Your therapist may recommend different or additional exercise based on your individual progress and goals.

Walking Program

You should be able to walk with one foot in front of the other, striking your heel down first and then rolling off the front of your foot as you advance your other leg. Remember to slightly bend your knee when advancing your surgical leg.

Start with several short walks 4 times per day, in between your sessions of exercise and resting with your leg elevated. This will help with endurance, confidence, and balance as your muscles get stronger and become more coordinated.

Use the activity chart on page 33 to keep track of activity if it is helpful!

If you are asked to limit weight-bearing on your affected leg, your progression will be slower and your gait pattern may vary. Discuss with your therapist at the hospital or contact your surgeon with questions.

Walking Progression Over First 2-4 Weeks

- Begin on solid, flat surfaces with the walker or crutches at the distance you did in hospital.
- Gradually increase distance each 1-2 days.
- If increased pain/difficulty with endurance, stay at or decrease distance for 1-2 days, then try again.
- Transition to single crutch or cane as your strength and balance allow, first at home and then in crowds.
- Try longer distances without devices when confident to do so.
- Begin adding uneven surfaces cautiously as strength and balance allow.

Activity Chart

Date	Morning exercises	Rest, ice & elevation	Mid-day exercises	Rest, ice & elevation	Evening exercises	Rest, Ice & elevation	Walking 4 times/day

Goals During Recovery

Exercise and functional activity are extremely important elements to get the best results from your surgery. You may receive additional exercises and activities from your physical therapist to keep you moving toward the goals listed on the next few pages.

Day of Surgery to 2 Weeks Post-op

- Use assistive device as needed, using a normal heel-toe gait pattern
- Weight-bearing as tolerated unless advised differently
- Rest frequently between activity/therapy
- When you rest, elevate your leg above your heart. Use pillows in a wedge position to keep the leg in full extension
- Use the ice packs as needed, before/after exercise and activity

- Have a knee that is fully straight and bends to 100° by 7 days.
- A pedometer or activity tracker can be a helpful tool to measure your progress.
- Complete four walks daily, using the assistive device as instructed until no limping and full knee extension at heel strike are present.
- Continue gaining muscle strength and motion by performing your HEP 2-3 times daily.
- Gradually resume homemaking tasks.
- Shower and dress yourself with support as needed; you may need some assistance with balance when getting in/out of a tub/shower.
- Consider using a stationary bike or elliptical trainer if tolerated. You may progress to a treadmill with handrails if desired, but only when strength and balance allow.
- Practice 3-4 stairs, taking them one at a time.

Weeks 3-4

- Post-activity soreness should resolve within 24 hours
- Gradually increase activity as tolerated, and back down if pain or swelling is persistent

- Knee can fully straighten and bend to 115-130°.
- Walking can progress to no device as tolerated on flat surfaces. Begin to challenge yourself with distance and different surfaces, with the cane or walker available for support as needed.
- Continue the exercises as instructed by your therapist.
- Progress to climbing and descending a flight of stairs safely, working towards foot-over-foot pattern.
- Return to limited work activities if able. A sit-down job and a limited schedule may be needed until you build your strength, comfort and endurance.
- Resume homemaking tasks as strength and balance allow.
- A road bike may be attempted if progressing on stationary bike.
- Immersion of your leg in water is allowed, once any wound closure is removed and the wound is well healed. Contact your surgeon if any areas of drainage or redness remain

Weeks 5-8

- Post-activity soreness should resolve within 24 hours
- Low impact activities may be resumed
- High impact activities only as permitted by surgeon

- Knee fully straight (0 degrees extension) and knee bends to 120-135 degrees
- Community-based walking to tolerance is encouraged.
- Return to full work activities, unless your job requires heavy lifting, balance or kneeling. Discuss any restrictions with your surgeon, your therapist and your employer before you return.

Weeks 9 and Beyond

- Return to sports or other leisure activities as your pain, strength and confidence allow.
- If you are concerned about your knee function, gait, balance, or readiness for specific activities at any time later in your recovery, speak with your surgeon or your physical therapist about a strengthening program or sport-specific training before you attempt these activities

You will continue to gain strength, mobility, endurance and confidence for 6-12 months after surgery. Celebrate small successes!

Directions & Map

Coming from the North:

From US 31:

Turn right onto E 16th St.

Turn left onto S River Ave./ I-196-BL/US 31-BR. Continue to follow I-196-BL/US 31.

End at the corner of Michigan Ave and 27th St. Turn right onto 27th St to enter the 602 Michigan Ave Campus.

Coming from the South:

From US 31:

Take the Washington Ave North/I-196-BL/US 31-BR exit - Exit 47B.

Turn right onto Washington Ave/ I-196-BL/US 31-BR.

Continue to follow I-196-BL/ US 31-BR.

End at the corner of Michigan Ave and 27th St. Turn left onto 27th St to enter the 602 Michigan Ave Campus.

Coming from the East:

From I-196 W:

Take I-196 W - Exit 52 toward Holland, turn right onto Adams/ 16th St.

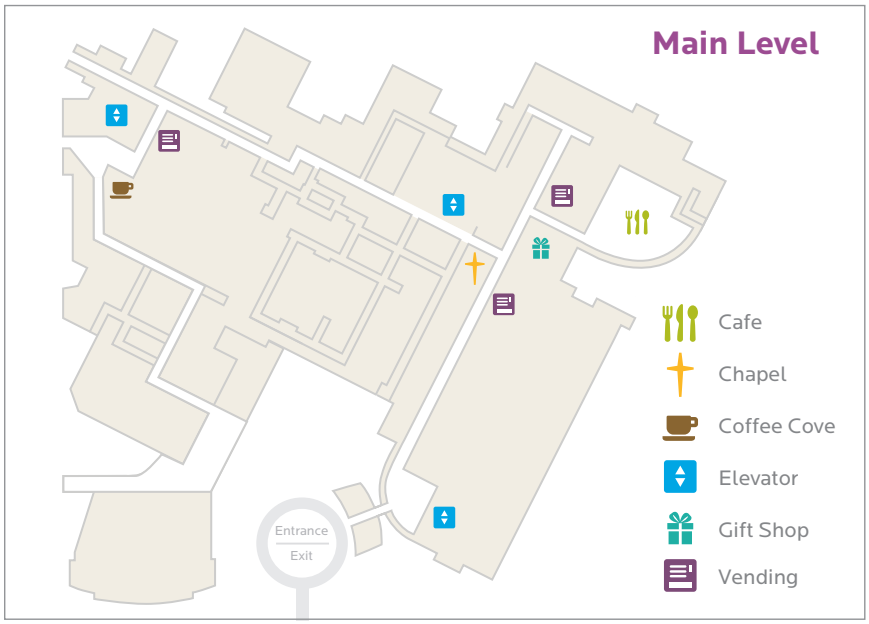
Stay straight to go onto E 16th St.

Turn left onto S. River Ave./ I-196-BL/US 31-BR.

Continue to follow S River Ave./ I-196-BL/US 31-BR.

End at the corner of Michigan Ave and 27th St. Turn right onto 27th St to enter the 602 Michigan Ave Campus.

Hospital Map



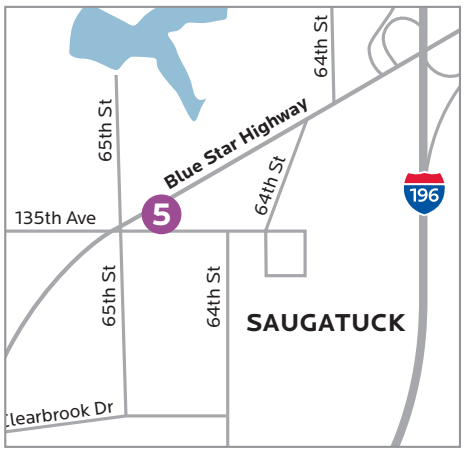
Holland Hospital Physical Therapy & Rehab Services

Scheduling: Phone (616) 355-3930; Fax (616) 395-2820

HOLLAND HOSPITAL PHYSICAL THERAPY & REHAB SERVICES

1. 844 Washington Ave
   Entrance B, Suite 1600
   Holland MI 49423
2. 480 State Street
   Holland MI 49423
3. 370 N 120th Ave
   Holland MI 49464
4. 3299 N Wellness Drive
   Building C, Suite 220
   Holland MI 49424
5. 6490 Blue Star Highway
   Saugatuck MI 49453
6. 8251 Westpark Way
   Suite 100
   Zeeland MI 49464

   (616) 355-3930
   hollandhospital.org



Holland Hospital | JOINT REPLACEMENT CENTER

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