A Patient's Guide to Outpatient Total Knee Replacement

THE PATIENT'S GUIDE TO OUTPATIENT TOTAL KNEE REPLACEMENT

RECLAIMING YOUR QUALITY OF LIFE

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RECLAIMING YOUR QUALITY OF LIFE

Welcome

Arthritis affects about 40 million Americans, one in eight people. As we age, doing the things we love to do without arthritis pain often becomes challenging. Sometimes, even the simplest of life's tasks, like walking or getting out of a chair, can become difficult and painful.

The physicians and the staff of Prime Surgical Suites and Orthocarolina are working to restore the quality of life of people with arthritis throughout the area... one joint at a time.

For many, great quality of life means spending time with family, enjoying a round of golf, a bicycle ride, or the pleasure of a simple walk. No matter what your definition, being able to walk and move without pain is an important part of living well.

Our physicians and staff have spent their professional lives studying how to combat the effects of arthritis, and have worked tirelessly to develop and master advanced surgical techniques to help you revitalize your life.

The purpose of this brochure is to introduce you to our **comprehensive outpatient partial and total knee replacement program**. Knee replacement, or arthroplasty, is the surgical resurfacing of the damaged surfaces of your knee, and one of the most effective ways to reduce pain and restore mobility. Our outpatient program is designed to optimize your health care experience, without the need for the hospital, and support you at every stage of your recovery.

With our extensive patient education and comprehensive care program, we are confident that you will have the information, care and support to succeed on this journey to restore a more active lifestyle.

Orthocarolina

Partnering for success

You and your surgeon have agreed that you are a candidate for outpatient knee replacement: a unique treatment model that begins at diagnosis continues with surgery and is completed at home, with you as an active participant.

Understanding what is happening will make your time spent with us – and the time spent throughout your entire journey to a better quality of life – smoother and more comfortable.

We ask you to arrange for a responsible adult to be your **JOINT PARTNER**, or "**JP**." This should be someone who can attend pre-surgical visits, take you home after surgery and help you once you've returned home.

We encourage you to share information with your **JP** and all the other important people in your life who will assist you. Your understanding, participation and commitment – and that of your **JP** – are important to the success of your procedure. Both you and your **JP** should read and complete everything given to you. When everyone is on the same page and fully informed, the journey to a successful recovery is smoother and less scary.

OUR GOAL IS TO HELP YOU ACHIEVE A GREAT RESULT.

We are committed to helping you reclaim your quality of life.

IMPORTANT:
As soon as you get this booklet, begin doing the pre-surgical exercises to build strength and stamina. Don't do specific exercises if they cause excessive pain.

RECLAIMING YOUR QUALITY OF LIFE:

OUTPATIENT KNEE REPLACEMENT

What is it? An outpatient knee replacement is an advanced alternative to traditional inpatient care to resurface the damaged compartments of your knee. We replace the damaged areas with an artificial covering in the outpatient setting. This can be done on one-half of the knee, or partial knee replacement if the disease process is limited to one area or compartment. If the disease process is more widespread, which is more common, the entire knee (total knee) will require resurfacing. The surgery can eliminate knee pain and allows for complete recovery at home.

How long will the surgery take? Your surgery will take 60 to 80 minutes on average. Plan to be at the center approximately 5 or 6 hours.

How is the knee resurfaced? An incision is made on the front of the knee utilizing less-invasive techniques. The damaged bone and tissue are removed, and the bone surfaces are prepped and shaped to hold modern titanium implants. Robotic technology with precise computer algorithms is utilized to align and balance the implants, which are secured to the bone utilizing bone cement.

What kind of anesthetic will I have?

- An Adductor Canal Block (ACB) is performed by anesthesia using ultrasound guidance. It numbs the leg from the hip down without altering muscle function. This often eliminates the majority of your pain for 24 hours.
- Light general anesthesia is then administered with IV sedatives and a unique breathing mask called an LMA
- Medications for pain, relaxation, and nausea prevention will be given to promote a smooth recovery experience
- A special "cocktail" of pain-relieving medications will be injected into the soft tissues around the knee during surgery to further reduce immediate postop pain

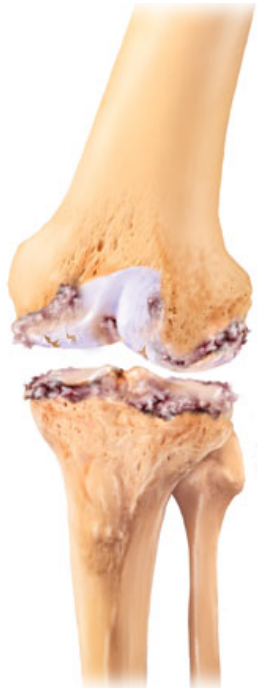
What are the risks of surgery?

Your surgeon has performed many inpatient and outpatient knee procedures safely and successfully. However, there are potential complications associated with any surgery. Below, we have listed some of the possible complications associated with knee replacement surgery, and precautions to help prevent them:

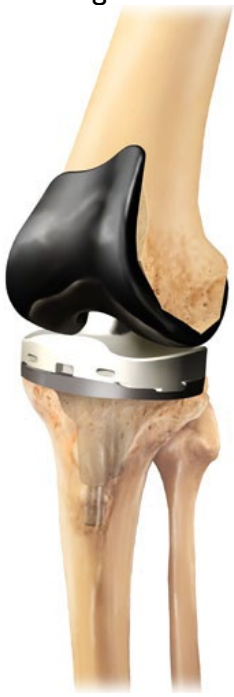
- *Infection* - With all surgery, there is a risk of infection. Your pre-admission evaluation and test results will confirm you have no active infections before surgery. Antibiotics are administered before and after surgery. Many other precautions--before, during, and after your surgery--are taken to further reduce your risk of infection, which occurs less than 1 out of 100 knee surgeries.
- *Blood clots*- To reduce the risk of blood clots and promote circulation, you will be asked to pump your feet and exercise your ankles to increase circulation following surgery and during recovery. After surgery, aspirin is usually taken twice per day to further help prevent blood clots. Compression stockings and a systemic compression device (calf pumps) are typically used to further reduce risk. A short walk every 2 or 3 hours is also helpful. If your medical history suggests higher than average risk for blood clots, additional medications may be required.

- *Pneumonia* - Breathing deeply after surgery and frequent coughing are important ways to prevent congestion from building up in your lungs, which can lead to pneumonia.
- *Bladder infections* - Bladder infections may also occur, so it is particularly important to drink plenty of fluids to help prevent this type of infection. A urinary catheter is typically not used, to further reduce this risk. You will be getting up shortly after surgery to use the bathroom and begin walking.
- *Numbness* - You will experience some numbness around your knee incision following surgery. This is normal and expected. During surgery, the microscopic nerves around the joint are disturbed. As these nerves heal, you may experience a tingling sensation. You may experience permanent numbness in a small area around your incision. This will not affect the function of your knee. It is extremely rare to have permanent neurologic damage that alters the function of your leg from the surgery.
- *Scar tissue* – The surgical "injury" inevitably causes some scar tissue formation due to the body's normal healing response. This rarely impacts the ultimate function and performance of the knee. However, some popping and clicking are very common. Scar tissue formation can become problematic when physical therapy progress is unusually slow.
- *Severe complications* - As with all major surgery, there is a possibility that complications from any of the above, or the anesthesia, could be severe enough to result in major events like heart attack, stroke, or even death. If you have specific concerns regarding any major medical issues that could impact the success of the surgery, please notify your surgeon and anesthesiologist.

BEFORE Advanced Knee Arthritis



AFTER Following Total Knee Arthroplasty



Preparing for surgery

Scheduling

Most insurance companies require pre-authorization before scheduling surgery. Our staff will call your insurance company to check eligibility and get pre-authorization as needed. This may take several days, depending on the insurance company. Once we have received approval from your insurance, you will be contacted to discuss available surgery dates and other important appointments.

Medications

Once your surgery is scheduled, please inform our office if you are currently taking any of these medications, as they need to be stopped before your surgery:

☐ Coumadin	**5 days**
☐ Aspirin	**7 days**
☐ Rheumatoid arthritis drugs	**vary (notify your surgeon of these)**
☐ St. John's Wort	**2 weeks**
☐ Prescription diet pills	**2 weeks**
☐ All vitamins and supplements	**7 days**
☐ Anti-inflammatory medications	**7 days**
(Advil, ibuprofen, Aleve, Naprosyn, Relafen, Diclofenac, Meloxicam)	
☐ Hormone replacement therapy	**7 days**

***** **Celebrex** can be taken until the surgery

***** If you take other **BLOOD THINNING MEDICATIONS** (i.e. Eliquis, Xarelto, Plavix, etc), notify your surgeon, as you may not be a candidate for outpatient knee replacement

Preparing for surgery

Medical history and health status

Before your surgery, we will ask questions regarding your medical history and health status, or for insurance verification. These are some of the questions frequently asked:

- Do you have health problems such as diabetes, heart disease, or high blood pressure?
- Are you taking any medications (This includes over-the-counter products such as aspirin, ibuprofen, vitamins, herbs, and teas)? Please have your medication bottles or a complete list available for your physician to review.
- Do you use tobacco, alcohol, or recreational drugs?
- Do you have allergies?
- Do you currently have a fever, cold, rash, or history of recurring infection?
- Have you had previous surgeries or illnesses?
- Are you or could you be pregnant?
- Have you or any blood relatives had previous problems with anesthesia?
- Have you or any blood relatives had a history of blood clots?

Pre-surgical testing

Depending upon your age and medical status, we may ask you to go to a local laboratory or diagnostic center for pre-operative testing. These tests may include:

Chest X-ray	Blood work (CBC, BMP, PT/PTT)
Urine test	Electrocardiogram (EKG)
Nasal MRSA culture	

IMPORTANT: *If you get a fever, cold, serious medical illness, rash, or a* ***CUT/SCRATCH ON YOUR SURGICAL LEG****, call our office regarding your change of health. Your surgery may need to be postponed.*

RECLAIMING YOUR QUALITY OF LIFE:

Preparing for surgery

1. Medical Clearance
    - The surgery coordinator will ensure proper clearance documents and blood work are obtained from your medical providers. This may or may not require a separate visit to your medical provider before surgery.

2. Pre-op Visit
    - Approximately 1 week before the surgery, you will see your surgeon's PA to perform necessary paperwork, review the pre-op and post-op plans, ensure all questions are answered and ensure all details are completed.

3. Anesthesia Pre-op Visit
    - Approximately 1 week before the surgery, you will see anesthesia to review the anesthesia plans, ensure you are an appropriate candidate for knee replacement in the outpatient setting and go over medications.

4. Physical Therapy Joint Class
    - Approximately 1-2 weeks before surgery, you will see our physical therapists for pre-surgical orientation. At this visit, you will learn in great detail about the procedure, including:
        - ✓ How to prepare your home
        - ✓ What to bring to the surgery center
        - ✓ What equipment you'll need
        - ✓ What to expect during and after surgery
        - ✓ Exercises to prepare for surgery

5. DME Visit (durable medical equipment)
    - Usually the same day as the pre-op visit, you will see our DME specialist who will provide some equipment options for purchase or rent to facilitate your recovery at home, including:
        - ➢ Calf compression device (SCD) – for blood clot prevention
        - ➢ Cold-therapy unit – an ice machine for swelling reduction
        - ➢ Walker
        - ➢ Cane
        - ➢ Bedside commode/shower chair

6. Home Health planning
    - Confirm that home health has been approved, including a **nurse visit** the morning after surgery, and **physical therapy** to start the afternoon after surgery. The frequency of home therapy will be determined by your surgeon.

7. Prescription Medications (post-op meds)
    - Post-op medication prescriptions will be provided at the pre-op visit, including a sheet of instructions on how to take them, and a chart to help you keep track of usage. The medications may include:
        - Tramadol (for moderate pain)
        - Oxycodone (for severe pain)
        - Dexamethasone (for inflammation and swelling)
        - Ondansetron (for nausea)
        - Aspirin 325mg (for blood clot prevention)
        - Keflex 500mg (antibiotic for infection prevention)
    - **Tylenol** and **Ibuprofen** are encouraged liberally during the recovery process, to reduce the dependence on stronger narcotics. These should be alternated ***every 4 hours*** for maximum benefit.
        - Tylenol max dose: 1000mg three times per day
        - Ibuprofen max dose: 800mg three times per day

    Notify your surgeon if you are **allergic or **unusually sensitive** to any of the recommended medications, as there are often alternatives.*

8. Cuts and scratches
    - The operative leg cannot have any open or healing wounds at the time of your knee replacement due to infection risk. Notify your surgeon immediately if this occurs, as surgery will need to be postponed.

9. Stop medications and supplements that cause blood thinning
    - See the list covered previously

10. Stop smoking and chewing tobacco
    - Nicotine impairs bone and wound healing, and can directly lead to infection. You must quit 1 month before surgery, and continue avoiding for 2 weeks after surgery, or until the wound is fully healed.

You are almost ready!

RECLAIMING YOUR QUALITY OF LIFE:

Preparing for surgery

Pre-surgical exercises

Perform this list of exercises two times a day. They should take about 15-20 minutes to complete. Don't do any exercises that are too painful. In addition, the use of a ***stationary bike*** for 15-20 minutes per day is highly recommended to begin preconditioning for success after surgery. These are the same exercises used AFTER surgery. See pages 30-32 for pictures of each exercise.

(1) Ankle Pumps -- Flex foot. Point toes. Repeat 20 times.

(2) Quad Sets (knee pushdowns) -- Lie on back, press surgical knee into mat, tightening muscles on front of thigh. Do NOT hold breath. Repeat 20 times.

(3) Gluteal Sets (Bottom Squeezes) -- Squeeze bottom together. Do NOT hold breath. Repeat 20 times.

(4) Knee Abduction and Adduction -- Lie on back, slide legs out to side. Keep toes pointed up and knees straight. Bring legs back to starting point. Repeat 20 times.

(5) Heel Slides (Slide Heels Up and Down) -- Lie on couch or bed. Slide heel toward your bottom. Repeat 50 times.

(6) Short Arc Quads -- Lie on back, place towel roll under thigh. Lift foot, straightening knee. Do not raise thigh off roll. Repeat 20 times.

(7) Arm Chair Push-ups -- This exercise will help strengthen your arms for walking with crutches or a walker. Sit in an armchair. Place hands on armrests. Straighten arms, raising bottom up off chair seat if possible. Feet should be flat on floor. Repeat 20 times.

(8) Seated Hamstring Stretch -- Sit on couch or bed with leg extended. Lean forward and pull ankle up. Stretch until pull is felt. Hold for 20-30 seconds. Keep back straight. Relax. Repeat 5 times.

Preparing for surgery

(9) Straight Leg Raises -- Lie on back, unaffected knee bent, and foot flat. Lift opposite leg up 12 inches. Keep knee straight and toes pointed up. Relax. Repeat 20 times.

(10) Ankle Dorsiflexion (Plantar Flexion) -- Standing, hold onto firm surface. Raise up on toes. Go back on heels.

(11) Hip Flexion -- Standing, march in place.

RECLAIMING YOUR QUALITY OF LIFE:

Preparing your home for your return

Please review and complete the follow list of items prior to surgery. This will ensure a smooth transition from the surgery center to your home on the day of surgery.

- Prepare meals ahead of time and put fresh linens on your bed.
- Make sure you have an armchair with a firm cushion that you can sit on.
- Water beds are not recommended after your surgery. A flat, firm mattress should be in place.
- Have an ample supply of your prescription medications available.
- Pick up throw rugs and make sure long phone and electrical cords are out of the way.
- Put night lights in bathrooms and dark areas.
- Have non-skid surfaces (strips, etc.) in place in tubs and showers.
- Arrange for pet care if needed. Keep pets away from the surgical leg.
- Prepare a comfortable rest area with tissues, phone, TV, remote control, etc. nearby. You don't want to rush for the phone.
- If you are going to be alone part of the day, carry a portable phone and/or personal alarm with you to call for help in case of an emergency.
- Have footwear available with non-skid soles.
- Arrange transportation for follow-up visits.

RECLAIMING YOUR QUALITY OF LIFE:

Preparing for surgery

One day prior to surgery

- Shower with Hibiclens (if available)
- Use antimicrobial wipes over the surgical site.
- Have **nothing to eat after midnight**. This includes gum, candy, and mints. Your surgery may be canceled or delayed if you do.
- You are expected to **drink 16oz of water or an electrolyte drink** between midnight and 2 hours before your arrival time at the surgery center.
- Eat a 'regular-sized' dinner the day before surgery. Do not "feast" on large quantities of heavy or rich foods.
- Take all routine medications except those already stopped. If there is any question about which medications to take, please contact your surgeon.
- Avoid heavy labor. Avoid activities that could result in cuts and scratches. Avoid activities that could result in dehydration.
- Place **SCOPOLAMINE PATCH** behind ear before bed (before midnight).

Day of surgery

At Home

- Use the last set of anti--microbial wipes over the surgical site – DO NOT SHOWER
- Wear comfortable, loose clothing
- Do not use lotions, talcum, perfume, make--up or nail polish
- Take heart and blood pressure medications with sip of water. Do not take insulin or diabetes medications unless instructed to do so.

IMPORTANT REMINDER:
Completely drink 16oz of water OR an electrolyte drink (Propel, Gatorade, etc.) 2 hours before arrival to the surgery center.

RECLAIMING YOUR QUALITY OF LIFE:

Day of surgery

Arrival at the Surgery Center

At the Surgery Center

- Bring walker
- Bring photo-ID, bag for dentures, cases for contact lenses or glasses
- Bring a book, IPad, laptop, or headphones for your stay in the recovery suite
- A family member or significant other must accompany you to the surgery center
- Your **Joint Partner** should also accompany you to the surgery center (if the **JP** isn't your family member or significant other)
- In the pre-op area:
    - You will sign the surgical and anesthesia consent forms
    - IV will be started and pre-op medications and antibiotics will be administered
    - A nerve block will be performed by the anesthesiologist
    - The knee will be shaved and prepped with Hibiclens
    - Your surgeon will meet you and your family in the pre-op area, confirm and mark the surgical site, and answer any last questions you may have
    - You will then be transferred to the OR
    - Family members will be brought to the waiting lounge

RECLAIMING YOUR QUALITY OF LIFE:

Day of surgery

Post-op / Recovery

At the end of the surgery, anesthesia will be reversed and you will be brought to your recovery suite. You'll wake up with minimal discomfort. Your leg will be wrapped for compression, elevated on pillows, and a drain in place to minimize pain and swelling.

In the recovery area, the nurses will monitor your vital signs and keep you comfortable. Medications will be administered as necessary for pain or nausea. IV fluids and oral liquids will be utilized for hydration.

You will be monitored in the recovery area for a few hours. You will be discharged home once we are sure that you are stable and comfortable. The medications administered at the surgery center, as well as the nerve block, should provide excellent pain relief at home. It is extremely important, however, to follow the post-operative pain management protocol to ensure ongoing pain relief.

Prior to discharge, physical therapy will have you walk, climb stairs, and confirm that you are stable for discharge. You will be given a brief home instruction sheet – detailed home instructions are on the next several pages of this booklet.

Discharge checklist:

- All home medication prescriptions filled
- Pick up Tylenol, Ibuprofen, and Aspirin 325mg in addition to prescription meds
- Home health agency contacted – visit by nurse and therapist confirmed for day after surgery
- All necessary home equipment has been acquired – walker, cane, cold-therapy device, home SCDs, bedside commode/shower chair
- Post-op appointment scheduled
- OK to shower after the home health nurse removes the dressing and drain
- A second waterproof dressing will be provided for dressing change at 7 days post-op
- **JP** or family member will be with you for 24 hours after discharge and present with you most of the time for the first week at home

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: At Home

GOALS FOR THE FIRST 2 WEEKS:

- Manage swelling
- Manage swelling
- Manage swelling
- Manage your pain (by managing the swelling)
- Take short, brief walks and transition to a cane
- Achieve 90 degrees or more of knee motion as soon as possible

MANAGING SWELLING

The success and degree of pain during the first 2 weeks hinges on swelling control. *YOUR KNEE WILL SWELL. YOUR KNEE WILL HURT AS A RESULT.* A good rule of thumb is to ice the knee for 20-30min every hour when awake. Swelling will typically peak on day 4 or 5 after surgery.

Keep the leg elevated continuously, knee straight, toes at eye level or higher. The only time the leg should not be elevated is during therapy, walking, using the bathroom, or when eating.

Caution: Using a recliner may not elevate your leg high enough or keep your knee straight enough. Toes should be at or near eye level.

ELEVATE HIGH. KNEE STRAIGHT.

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: At Home

MANAGING YOUR PAIN

Our primary goal is to keep you as comfortable as possible following your surgery, and this starts with swelling management. It is equally important to understand our philosophy of multi-modal pain management.

It is important to realize that ***your knee will hurt***, often bad at times, but it is very manageable if you follow our protocols.

The pain is relatively minor for the first 24-48 hours after surgery. It rapidly escalates and peaks somewhere between days 3 - 5, and then begins slowly subsiding.

Our philosophy: use Tylenol, ibuprofen, and tramadol (all non-addictive medications) around the clock for the first 2 weeks, to keep your baseline level of pain lower, so the spikes of increased pain are more easily managed by stronger narcotic medication. If you manage the **swelling** well, you will manage the pain well. And don't forget: ICE is a great pain killer.

Your pain will be assessed from the time you leave the operating room until the time you leave the surgery center. You will frequently be asked to rate your discomfort on a pain scale that will help us determine if your current method of pain control is adequate or if changes need to be made. Oral or injected pain medications may be used to relieve discomfort.

Remember, pain will NOT be an obstacle in the first 2 days. And, you have all the tools to manage your pain when it hits: ice and a 3-level medication strategy:

- Mild pain – Tylenol, Ibuprofen
- Moderate pain – Tramadol
- Severe pain – Oxycodone

***If you are allergic or unusually sensitive (with nausea, itching) to any medications in the protocol, notify your surgeon, as there are often substitutes.**

- Ibuprofen – If you have GI sensitivity, Celebrex can be substituted
- Oxycodone – If you have itching or GI sensitivity, Hydrocodone or Hydromorphone can be substituted

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: At Home

HOME HEALTH CARE

A visiting **nurse** will be scheduled for the morning after surgery to assist you with post-op care and monitor your progress. The nurse will monitor your blood pressure, and evaluate whether it is safe to restart your blood pressure medications. The nurse will also remove your surgical dressing and drain. You will be left with a thin, clear waterproof dressing that will now enable you to shower and ice the knee effectively. The nurse will encourage hydration, review your medications, and evaluate your pain. The nurse will make sure your compression stockings are worn correctly and that the home SCD machine (calf compression device) is being utilized properly.

A **physical therapist** will visit you at home the day after surgery. The therapist will evaluate the safety of your home and ensure proper icing and elevation is performed. The therapist will assist you in your exercise program, and encourage walking with proper technique utilizing your walker or cane. Walking will be encouraged every 2-3 hours, for short distances. ***Excessive standing or walking are discouraged to avoid developing too much swelling.*** The therapist will evaluate your knee range of motion, and assist you in improving your knee motion daily. It is also very important to continue taking your pain medication consistently according to the protocol, to more effectively exercise on your own and achieve your range of motion goal for the 2-week post-op visit: **0 degrees (or fully straight) and OVER 90 degrees of flexion (bending).**

Reminders:
Wear the compression stockings regularly for the first 2 weeks.
Use the home SCD machine most of the time, including sleep, for the first 2 weeks.
Remove the SCDs during ambulation.

HAND WASHING HELPS PREVENT INFECTION

A serious form of bacteria known as MRSA frequently inhabits the skin or nose of healthy people. When introduced into the home setting during recovery, it can be harmful to patients. Hand hygiene is the single most important method of controlling the spread of bacteria. We ask all visitors and caregivers to wash their hands before and after contact with patients and their surroundings. This simple act can provide for a safer environment for all.

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: At Home

TOILET

- Do not attempt to use your walker to pull yourself up to stand. Push up from the seat, reaching forward with one hand at a time to your walker.
- When out in the community, use the bathrooms that accommodate people with disabilities. They will have grab bars.

STALL SHOWER

- If your cane fits into the shower stall, step in with the affected leg first. If you are unable to fit the cane into the stall, step in backward with your strong leg first.
- Make sure surfaces inside and outside the shower are non-skid to decrease your risk of slipping
- You can make a soap holder from the cut off legs of pantyhose. Cut them down the center leaving the foot end mostly intact. Put a bar of soap in the foot end. Tie the two top ends together. Hand around your neck.
- Use a long-handled sponge or brush to wash and dry legs.
- Make sure the dressing is fully sealed so the incision stays dry
- Use a shower bench/chair if available as needed

PRECAUTIONS

- Use your walker or cane when walking, and weight-bearing (as tolerated).
- Do not lift or carry things while walking.
- Avoid small pets, remove throw rugs, and secure electrical and phone cords on the floor where you may walk. Do not let pets near your surgical leg.
- Do not drive for two weeks or as instructed.
- Allow for adequate room at the side of your bed to walk. Avoid pivoting on your affected leg.
- Avoid slippery or unstable surfaces.
- Do not allow yourself to get exhausted.
- Use a cart to move items.
- Wear an apron or light jacket with several pockets to keep your hands free.
- Avoid reaching far overhead or down low.
- It's easier to take out the trash if you use small plastic grocery bags and tie them to your walker
- Slide bowls, containers, pots and pans along the counter. Don't carry them.

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: Timeline

Home: **Day 1 - the night of surgery**

- Keep the surgical dressing dry and intact.
- Take Keflex (or alternative antibiotic if allergic to penicillin) 500mg every 6 hours, for 4 doses. Take first dose on arrival home.
- Take one Aspirin 325 mg around 8 PM
- Begin the pain protocol as follows:
    - Tylenol 1000mg every 8hrs
    - Ibuprofen 800mg every 8hrs (try 600mg or 400mg if GI sensitive)
    - Tramadol 50mg 2 tabs every 6hrs

    We recommend staggering the doses of ibuprofen and Tylenol every 4 hours to optimize pain management.
- Begin Oxycodone 10mg 1 or 2 tabs every 4hrs for pain. You will not need to take many oxycodone the first night. Begin taking more regularly the morning of Day 2.

    If oxycodone causes excessive sedation/drowsiness, try taking a half tablet.
- Use Zofran (ondansetron) as needed for nausea
- Take dexamethasone tablet around 8 PM with the Aspirin dose
- Take one dose of an over-the-counter laxative to prevent constipation
- Don't forget to use your medicine tracking chart to help keep track of things
- Take at least 2 short walks, which can be done during bathroom breaks. Don't walk too much.
- Keep leg continuously elevated otherwise, with home SCDs on most of the time
- Record drain output every 4 hours. Flush the blood down the toilet. Call the on-call physician only if drain output exceeds 250cc in 4 hours.

Medication Checklist: Night of Surgery

	Keflex 500mg (take around 8pm)
	Dexamethasone 4mg (take around 8pm)
	Ibuprofen 800mg/Tylenol 1000mg (begin alternating every 4 hours upon arrival home)
	Aspirin 325mg (take around 8 pm)

Note: Clindamycin may be substituted for Keflex if allergic to penicillin
Note: Celebrex may be substituted for ibuprofen if GI sensitive, but can only be taken twice daily

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: Timeline

Day Two Post-op

- Drink lots of fluids today
- **Morning home health nurse visit:** nurse will remove dressing (except a thin waterproof dressing) and drain. Blood pressure and vital signs are monitored, and instructions given on whether to resume blood pressure meds. TED hose applied to surgical leg.
- Begin aggressive **ice and elevation** strategy. Remember: elevate toes to the nose and ice 20-30min every hour
- May shower today if pain controlled and dressing properly sealed
- Take short, brief walks every 2-3 hours. Don't walk or stand too much to avoid swelling.
- Drain site will ooze for a few days. Keep covered with gauze and tape until leakage stops. Leakage on surgical dressing should be minor. A few spots (quarter-size) are expected and normal.
- Bowel management – Take an over-the-counter laxative – pain medications are constipating
- Take aspirin 325 mg twice a day to help prevent blood clots and finish last dose of Keflex (antibiotic)
- **Pain will begin escalating today.** This is because the nerve block is wearing off. Don't panic our pain "recipe" works. Continue the tramadol, Tylenol, and ibuprofen.
- Oxycodone (or alternative, if allergic) should be started every 4 hours. Use one 10mg tab at first. Take 2 tabs as pain ramps up.
- Home SCDs should be worn most of the time, except during walking
- TED hose should be worn most of the time on BOTH legs
- **Afternoon home health physical therapy visit:** PT will start today, reinforcing the exercise program, measuring range of motion, ensuring proper ice and elevation, checking home for safety, and assistance with walking.

Medication Checklist: Day 2

Keflex 500mg (or clindamycin)	6am	12noon	6pm			
Dexamethasone 4mg	8am	8pm				
Ibuprofen 800mg***	6am	2pm	10pm			
Tylenol 1000mg	10am	6pm	2am			
Aspirin 325mg	8am	8pm				
*Oxycodone 5-10mg (every 4hrs)						
**Tramadol 50-100mg (every 6hrs)						

Oxycodone is AS NEEDED. Max 6 doses in a 24hr period. Write in the times taken.
****Tramadol is AS NEEDED. Max 4 doses in a 24hr period. Write in the times taken.***
*****If you substitute Celebrex for ibuprofen, it should be taken only TWICE daily.***

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: Timeline

Day Three Post-op

- Continue drinking fluids and using a laxative to prevent constipation.
- Take aspirin 325 mg twice a day to help prevent blood clots. Use SCDs and TED hose as previously instructed on both legs.
- **Pain will get worse today, and will likely peak if a few more days.** Continue the tramadol, Tylenol, and ibuprofen. Pain is directly linked to the swelling.
- Oxycodone (or alternative, if allergic) can be taken every 4 hours. Use one or two 10mg tabs as needed. If overly sedated, try taking a half tablet (5mg dose).
- Ambulate with walker. Transition to cane if safe and stable.
- Take short, brief walks every 2-3 hours
- Continue aggressive **ice and elevation** strategy. Remember: elevate toes to the nose and ice 20-30min every hour.
- For **nausea or an upset stomach**, take Zofran (ondansetron) as needed. You make require an antacid (Pepcid or Prilosec OTC) for heartburn. If this persists, ibuprofen dose may need to be lessened or switched to an alternative prescription drug (Celebrex). Call your surgeon if this is necessary. If this still doesn't fix the problem, the aspirin dose may need to be lowered to 81mg twice per day.
- Do the exercise program at least twice per day. Focus on extension (straight knee) and flexion (bend as much as pain permits).
- **Antibiotics are NOT necessary starting today**

Day Four Post-op

- Not many changes from here on.
- Pain and swelling should slowly begin improving
- Continue the current medication regimen:
    - Aspirin twice daily for blood clots
    - Tylenol, Ibuprofen, and tramadol to lower baseline pain
    - Oxycodone every 4 hours for moderate pain. Begin spacing oxycodone dose out and weaning slowly, as pain permits
- OK to shower daily if dressing sealed properly. No soaking.
- Continue aggressive **ice and elevation** strategy. Remember: elevate toes to the nose and ice 20-30min every hour.
- Continue taking short walks and do the physical therapy program twice per day
- **Last day of dexamethasone.**

RECLAIMING YOUR QUALITY OF LIFE:

After surgery: Timeline

Day Seven Post-op

- The home health physical therapist will change the waterproof dressing today. The dressing is good for 7 more days, and if sealed properly, will allow normal showering. No soaking. The second dressing was provided in your discharge packet from the surgery center.

Day Fifteen Post-op

- **Post-op office visit** with your surgeon: Xray, incision check, review physical therapy progress, evaluation of functional status, level of discomfort.
- Staples are removed. The incision no longer requires a dressing.
- TED hose are discontinued.
- Home SCDs are only required at night now.
- Outpatient physical therapy should begin. The frequency of visits will depend on your level of progress and access to similar gym equipment.
- Aspirin dose changed to 81mg twice daily.
- Resume driving when off narcotics (oxycodone, or alternative) and reaction time/control of driving leg returns to normal. You may require a driver for physical therapy visits for a few more weeks, depending on your progress. Most people can drive while taking Tramadol, as it usually does NOT cause sedation.
- Continue home exercise program. Range of motion goal: 120 degrees by 6 weeks post-op. Begin using a stationary bike as soon as your pain/motion permits.

Six Weeks Post**-op**

- **Post-op visit** with your surgeon. Xrays are not usually necessary.
- **Target ROM is 0-120 degrees.** Unlikely to require cane at this point.
- If ROM is NOT beyond 90 degrees, an additional procedure (knee manipulation under sedation) may be required.
- Sleep disturbances, swelling, heat, soreness, aching, stiffness, and some pain are all typical for this stage of recovery.
- Formal physical therapy is transitioned to a home gym and home exercise program around this point in the recovery process. The stationary bike is the most useful rehab tool at this stage.
- Expect significant weakness and difficulty with stairs at this stage.
- OK to resume swimming if wound fully healed (includes the ocean, hot tubs, pools, etc)
- Anticipate return to work now (or soon) for sedentary jobs.
- Aspirin 81mg twice daily is stopped, unless recommended by your PCP.
- Vitamins and supplements can now be resumed.
- Scar creams and body lotion can now be applied to the surgical site.

RECLAIMING YOUR QUALITY OF LIFE:

Three Months Post-op

- **Post-op visit** with your surgeon. Xrays are not usually necessary.
- Return to normal level activity is expected at this point in the recovery process. Most hobbies can be resumed, including golf, doubles tennis, hiking, cycling, and exercise.
- Anticipate return to more demanding jobs at this stage, including jobs that require standing, climbing, and lifting.
- Please note that **KNEELING ON THE KNEE REPLACEMENT** is not recommended for long durations. Kneeling may remain permanently uncomfortable due to the scar sensitivity.
- Expect activity-related swelling to still occur. This will typically get a little worse as the day progresses. Occasional icing, Tylenol, and ibuprofen are helpful for these symptoms.
- May now resume routine dental visits. Antibiotics will be required 30 minutes before your visits. Most dentists will prescribe the antibiotic for you.
- Some activities may produce discomfort in the front of your knee, including rising from a chair, getting out of the car, stair-climbing, and walking down a slope.
- Decrease the frequency of exercise at this stage, to allow inflammation to reduce. Recommend using gym equipment and the stationary bike 3-4 days per week.

Six Months Post-op

- **Post-op visit** with your surgeon. Xrays obtained.
- Tendency for activity-related soreness mostly resolved. There will still be a small amount of swelling, heat, inflammation in most knees at this stage.
- Muscle atrophy in the quadriceps will still be present, but improving steadily. This persistent muscle weakness causes a strain and discomfort along the front of the knee during stair-climbing (especially going downstairs), squatting, rising from a chair after sitting for prolonged periods.
- Knee will still feel stiff occasionally, especially after long periods where no movement occurs.
- Recommend continued use of gym equipment and the stationary bike for strengthening 3-4 days per week.

One Year Post-op

- **Post-op visit** with your surgeon. Xrays obtained.
- The average patient achieves **peak performance** of the knee at this stage.
- Inflammation and swelling are typically resolved, and most activities can be done without soreness.
- Strength has returned to near-normal levels, and quadriceps atrophy resolved.
- Rapid pivoting movements and twisting maneuvers can elicit fleeting sharp pain, which usually does not result in problems with routine daily activities.
- Changes in the weather are often associated with minor aching in the knee. This gets better with time.

After surgery: Troubleshooting Problems

IMPORTANT !!
PLEASE CALL OUR OFFICE OR THE ON-CALL PHYSICIAN IF YOU EXPERIENCE ANY OF THE FOLLOWING:

- Fever greater than 101 degrees
- Sudden rapid increase in knee pain
- Increased drainage, redness or swelling to the incision
- Calf pain/tenderness or dramatic changes in leg or knee swelling
- Chest pain
- Chest congestion or tightness
- Problems with breathing or shortness of breath
- Difficulty urinating, burning with urination, or urinary frequency beyond the first 2 or 3 days after surgery.

OFFICE PHONE NUMBER: 828-322-5172
ON-CALL PHYSICIAN: 828-315-5000

Common issues:

- **Waterproof bandage leaks or gets wet**
  - If the waterproof dressing loses the seal, water can saturate the pad and cause problems with the incision, such as infection. If this occurs, do NOT shower. Remove the dressing and cover with sterile gauze/tape. Call your physician and tell your home health therapist. A second waterproof bandage was provided on the day of surgery, and can be applied early.
- **Redness near the incision**
  - This is typically related to bruising, bleeding, and inflammation just below the skin's surface. This usually responds to ice and elevation, and backing off the rehab exercises for 24-48 hours. Your blood thinner may need to be held. If it persists, especially when associated with a FEVER over 101 degrees, call your physician immediately.
- **The knee feels warm**
  - This is NORMAL for months after knee surgery. It is the result of swelling and inflammation in the knee. Ice and elevate to control the swelling and warmth. This slowly improves with time.

After surgery: Troubleshooting Problems

- **Increased pain and swelling after therapy/walking**
  - This is the main "battle" in the first 2 weeks. Ice and elevate for 20-30min every hour while awake. Elevate the leg as high as possible for more effective swelling reduction. Don't overdo it. Doing a lot of walking is NOT the fastest road to recovery. Blood thinning medications may need to be held.
- **Bruising down the back of the thigh, calf, and ankle**
  - This is from normal oozing and bleeding under the skin from the surgery, and will collect in the back of the leg because of gravity. It usually peaks in the first 5-7 days at home, then slowly resolves with ice and elevation. If there is excessive bruising in the front of the knee around the incision, notify your doctor.
- **Difficulty lifting leg or holding it straight**
  - This becomes more difficult as the knee swelling increases. Keep icing and elevating. As the swelling diminishes, this gets easier.
- **Constipation while on narcotics**
  - Extremely common and directly related to narcotic (oxycodone) use. Take an over-the-counter laxative AND stool softener, and consider taking Miralax in addition. Occasionally, suppositories and/or enemas may be required.
- **Decrease in ROM (range of motion)**
  - Progress with ROM is associated with the degree of SWELLING in the leg and knee joint. Swelling peaks in the first 5-7 days at home, and during that period, ROM may diminish. As swelling subsides (ice and elevate), ROM should begin improving again. Goal: achieve **over 90 degrees** of flexion by 2 weeks.
- **Drainage on the surgical bandage**
  - This is common and expected, especially over the navigation pin sites. A quarter-size area that does NOT continue to expand in one or two spots is normal. If the entire dressing pad gets saturated, notify your doctor, as the bandage needs to be changed and the incision needs to be assessed.
- **Drain site leakage**
  - This is a NORMAL problem that will resolve over 3 or 4 days. Reinforce drain site area with gauze and tape. Change as necessary. It is OK to continue to shower if the main waterproof dressing is sealed.
- **Numbness near the incision**
  - The outer (lateral) edge of the incision often becomes numb for months following the surgery. There may even be tingling or burning in the skin. This is unavoidable and slowly improves with time.

RECLAIMING YOUR QUALITY OF LIFE:

Post-op Physical Therapy

REMINDERS FOR ALL PATIENTS

Safe use of your walker

- Keep your hips straight and stand tall when using the walker. Use your arms to alleviate just enough pressure to minimize pain on the surgical leg.
- Do not use the walker as a support when getting in or out of bed, up from a chair, or off a toilet. It is not stable enough in that position. Back up to the chair until you feel the front of the chair on the back of your legs. Reach down for the arms and lower yourself safely into the chair.
- Use the walker until confidence in the surgical leg grows, tolerance to full weight-bearing improves, and tendency for the knee to buckle diminishes.
- Once full control of the surgical leg returns, you are ready to transition to a CANE. This may occur very early in your recovery.
- **DO NOT RISK YOUR KNEE BUCKLING, RESULTING IN A FALL, BY ABANDONING THE WALKER TOO EARLY.**

Safe use of your cane

- Use the cane in the hand opposite the surgical leg. Apply pressure to the cane with a slight lean as you bear weight on the surgical leg. The goal is to alleviate just enough pressure from the surgical leg to lessen discomfort and reduce the risk of falls.
- A single-prong cane with a "no-slip" tip is recommended over a larger, heavier multi-prong cane.
- Once you can walk without a noticeable limp and your quadriceps strength has returned to allow you to manipulate your leg easily, you may start transitioning OFF the cane. Start at home, and use the walls/furniture for balance until your confidence grows.

Getting in and out of bed

- Sit on the edge of the bed in the same manner as you would a chair. Scoot your buttocks back across the bed until hips and thighs are on the bed. Rotate your body until you are straight on the bed.
- **Tip:** use a belt or towel to "lasso" your foot to help manipulate the surgical leg with your arms until pain and muscular control of the surgical leg improves.
- Get into bed with the non-affected leg first, get out of bed with affected leg first.
- Use sheets and pajamas made of a slippery fabric to make scooting easier.

RECLAIMING YOUR QUALITY OF LIFE:

Post-op Physical Therapy

Getting into the car – front seat

- With the passenger seat pushed back, back up to the seat using your walker. Lower yourself into the seat. Tip: a plastic trash bag can help you rotate side to front.
- Gently swing both legs into the vehicle using your hands to assist you. Don't be afraid to bend the surgical leg to do this.
- Do not spend too much time in the passenger front seat with your leg down. Remember, elevate the surgical leg as much as possible to control swelling in the first 2 weeks.

Getting into the car – back seat

- If surgery was on your right leg, enter on the passenger side. If surgery was on the left leg, enter on the driver's side. Back up to the open rear car door with your walker or cane. Lower yourself carefully into the seat. Scoot across the back seat and have pillows stacked so you can semi-recline.
- The surgical leg will be straight on the car seat. Feel free to put the non-surgical leg on the floor for balance, repositioning, and comfort. Use pillows to make a backrest and make sure the door against your back is locked.

EXERCISE PROGRAM: PERFORM AT LEAST TWICE PER DAY

The following exercises will help you make a complete recovery from your outpatient knee replacement surgery. The exercises are designed to improve your range of motion (ROM) and flexibility, as well as to restore your strength.

1. Ankle Pumps – flex foot and point toes. Repeat 20 times.

2. Quad Sets (Knee Push-Downs) – sit with your surgical leg straight, other knee bent, and press the backside of the surgical knee into the floor, tightening muscles on front of thigh. Do NOT hold breath. Repeat 20 times.

3. Gluteal Sets - squeeze bottom together. Do NOT hold breath. Repeat 20 times.

4. Knee Abduction and Adduction - lie on back, slide legs out to side. Keep toes pointed up and knees straight. Bring legs back to starting point. Repeat 20 times.

5. Heel Slides - lie on couch or bed. Slide heel toward your bottom. Repeat 30 times.

6. Short Arc Quads - lie on back, place towel roll under thigh. Lift foot, straightening knee. Do not raise thigh off roll. Repeat 20 times.

7. Straight Leg Raise - lie on back, unaffected knee bent, and foot flat. Lift opposite leg up 12 inches. Keep knee straight and toes pointed up. Relax. Repeat 20 times.

8. Seated Knee Flexion - sitting on straight-back chair with affected leg outstretched, gently slide the affected leg underneath chair. Keep hips on chair. Try to gently stretch and bend knee as far as possible. Plant foot and move bottom forward on chair. Repeat 20 times.

9. Extension Stretch - prop foot of operated leg up on chair. Place towel roll under ankle and ice pack over knee. You may apply gentle pressure on the front of the knee with your hand to stretch the back of the knee periodically. Do for 10 minutes.

10. Prone Knee Flexion Stretch - bring heel toward buttocks as far as possible. If this bothers your back, keep a pillow under your stomach. Repeat 20 times.

11. Seated Hamstring Stretch - sit on couch or bed with leg extended. Lean forward and pull ankle up. Stretch until pull is felt. Hold for 20-30 seconds. Keep back straight. Relax. Repeat 5 times.

12. Knee Extension (Long Arc) - sit slightly forward in a chair. Straighten knee. Repeat 20 times.

13. Armchair Squat - with your feet shoulder-width apart and flat on floor, squat as low as is comfortable. Use support as necessary. CAUTION: YOU SHOULD NOT BEND KNEES ENOUGH TO CAUSE PAIN. Repeat 20 times.

14. Calf raises - standing, hold onto firm surface. Raise up on toes. Use chair for balance. Repeat 20 times.

15. Hip Flexion - standing, march in place. Use a chair or countertop for balance. March for 5 minutes.

16. Single Leg Step-Up - with foot of surgical leg on a step, straighten that leg. Return. Use step or book. Height of step will depend on your strength. Start low. You may also exercise good leg. Repeat 20 times.

RECLAIMING YOUR QUALITY OF LIFE:

Living with your resurfaced knee

Your new joint components have resulted from many years of research, but like any device, its life span depends on how well you care for it. To ensure the health of your new knee you must take care of it for the rest of your life.

SPORTS AND ACTIVITIES

Your new joint is designed for activities of daily living and lower-impact sports. Walking, swimming and cycling are recommended once you feel comfortable. Aggressive sports, such as jogging or running, jumping, repeated climbing and heavy lifting may impair or compromise the function and long-term success of your joint, and therefore should be avoided.

INFECTION

Your joint components are made of metal, and the body considers them a foreign object. If you get a serious infection bacteria can gather around your components and your knee joint can become infected. If you become ill with an infection or high fever, you should be treated immediately, to avoid spread to your knee replacement.

SURGICAL PROCEDURES

If you're scheduled for any kind of surgery, no matter how minor, you must take antibiotics before the incision. Make sure your surgeon is aware that you have a joint replacement so the appropriate precautions can be taken. These antibiotics are typically given in your IV if performed in the operating room, and may include Ancef or Clindamycin. If your procedure is being done in the office, your dental prophylaxis antibiotic will suffice (usually either amoxicillin or clindamycin by mouth).

DENTAL WORK

You should take antibiotics before having any dental work completed, including routine cleanings. Bacteria present in the mouth can scatter throughout the bloodstream and accumulate around your knee. You must let your dentist know about your knee replacement. Most dentists will prescribe amoxicillin to take 1 hour before your appointment. Clindamycin is a substitute if you are allergic to amoxicillin. If your dentist fails to prescribe an antibiotic, please call our office at 828-322-5172 to obtain a prescription for antibiotics before scheduled dental appointments.

The American Academy of Orthopaedic Surgeons states that you should take antibiotics before seeing your dentist for the rest of your life.

Personalized Solutions. Proven Results

The Outpatient Total Joint Replacement Program
At
Prime Surgical Suites