Proliance®
Surgery Center at Valley

Patient Guide

TOTAL KNEE REPLACEMENT

Total Knee Replacement

Dear Proliance Orthopedic Associates Joint Replacement Patient,

Congratulations on making the decision to improve your quality of life. Quality of life means different things to different people: hiking, riding a bike, lifting a grandchild, golf, tennis, or simply enjoying a walk. Being able to move without pain or limited function is an important part of getting back to your life.

The orthopedic surgeons at Proliance Orthopedic Associates (POA) work to restore mobility to those living with pain and loss of function of their arthritic joints. Arthritis affects about 40 million Americans. We have all witnessed the ways joint injury, arthritis, and other degenerative joint diseases rob people of their independence and, in some cases, their happiness.

The skilled orthopedic surgeons, physician assistants, nurse practitioners, and staff at POA have developed a joint replacement program focused on compassionate care, excellent outcomes, and outstanding customer service. It is important to us that you, as the patient, are an active participant in your care. This includes taking responsibility for your diet, sticking to an exercise plan, and participating in our preoperative and postoperative programs to optimize the outcome of your joint replacement surgery.

To maximize success after your surgery, it is important that you:

- Appreciate that each person has their own unique challenges. No two joint replacement experiences will be the same. This educational material serves as a guide for your upcoming joint replacement journey.
- Understand that you will be discharged home from our Ambulatory Surgery Center with your care partner who may be a spouse, family member, significant other, or friend. A care partner is essential for a successful journey through surgery and recovery.
- Realize this information outlines the various steps and processes to get you ready for your upcoming surgery. Please review this and make sure you follow the pathway we have outlined.
- Know that we all worry about the unknown, and understand we are here to guide you successfully through this process and to minimize any discomfort or apprehension.

We are committed to providing the expertise, resources, and service to ensure the best possible outcome following your joint replacement procedure.

Proliance Orthopedic Associates (POA) Contact Information

Proliance Surgery Center at Valley 4009 Talbot Road South, Suite 200 Renton, WA 98055	Phone (425) 226-2041 Fax (425) 226-2405
POA Renton Talbot Professional Center 4011 Talbot Road South, Suite 300 Renton, WA 9805	Phone (425)-656-5060 Fax (425) 656-5047
POA Covington 27005 168th Pl SE, Suite 201 Covington, WA 98042	Phone (253) 630-3660 Fax (253) 631-1591
POA Maple Valley 24060 SE Kent Kangley Road Maple Valley, WA 98038	Phone (425) 358-7708
POA Auburn I Lakeland Hills 1620 Lake Tapps Parkway E, Suite 115 Auburn, WA 98092	Phone (253) 246-2860 Fax (253) 246-2861
POA Bone and Joint Urgent Care 150 Andover Park W. Tukwila, WA 98188	Phone (425) 979-BONE (2663) Fax (425) 524-4447
For surgery scheduling questions: Ambulatory Surgery Center Scheduler	Phone (425) 656-5060 Ext. 3062
For medical questions: Ambulatory Surgery Center Pre-op Nurse	Phone (425) 291-1465
For billing or insurance questions: Proliance Billing/Insurance	Phone (425) 291-1414
For anesthesia questions: Valley Anesthesia Associates	Phone (425) 251-5180
For anesthesia billing questions: Anesthesia Billing	Phone (425) 407-1500 Ext. 1001 or 888-900-3788
For durable medical equipment questions (walker, cane, ice machine, etc.): Proliance Orthopedic Associates	Phone (425) 656-5060 *Ask for the cast room
To page the on-call doctor for urgent medical concerns after-hours: POA Answering Service	Phone (425) 251-1311

TABLE OF CONTENTS

Total Knee Replacement

Preparing For Total Knee Replacement

4-8 Weeks Prior to Surgery

Now is the time to start preparing for your upcoming joint replacement. This period of time is essential to get yourself set up for a successful outcome. In this section, we will discuss assembling your care team, optimizing your health to prepare for joint replacement surgery, and beginning "Pre-Hab" physical therapy.

Preparing your Care Team

Undergoing a total joint replacement is not something you do alone and will require you to assemble a care team to help you. You will depend on family members and/or friends to assist you in the preoperative phase as well as throughout the recovery process. In the preoperative phase, your care team can assist you with ensuring that your house is prepared for your postoperative recovery. This will include minimizing barriers and tripping hazards (cords and loose rugs), meal prepping, stocking up on ice, as well as making arrangements for child and pet care. In the recovery phase, your care team will need to get you to and from your post-op and physical therapy appointments, assist with meals, personal hygiene, and medication management after surgery.

Pre-Surgical Rehabilitation (Pre-Hab)

"Why am I doing physical therapy when I have done this in the past already?" This is a question we commonly are asked during this preoperative process. We recommend "Pre-Hab" because it has been shown to help accelerate your post-operative recovery. This form of therapy focuses primarily on optimizing your strength and range of motion for your upcoming total joint replacement. In addition, we recommend that you maintain your regular daily activities including walking/hiking, biking, and strength training, up until your surgery.

Medical Optimization

When you schedule your total joint replacement surgery, you will meet with our surgery scheduler who will arrange your preoperative visits and any other necessary medical clearance as determined by your orthopedic team in order to safely proceed with surgery. These additional clearances might include sign off from cardiology, pulmonology, neurology and/or your dentist

Identified in many studies as a major risk factor, smoking can lead to serious postoperative complications including infections, delayed wound healing, and the need for further surgeries. Smoking cessation will help decrease the occurrence of these postoperative complications. If you are an active smoker you will need to quit all tobacco products, including nicotine replacement therapy, for a minimum of 6 weeks before surgery. If you are in need of assistance with smoking cessation, we recommend you partner with your primary care provider to discuss options. Urine, blood, and/or breathalyzer tests will be ordered to confirm you have quit

If you are taking any opioid medications, you will need to decrease your daily consumption by 25% before surgery. This will aid in controlling your postoperative pain.

Patient Engagement App

You will be given the opportunity to enroll in an app-based electronic platform with educational information and reminders throughout your surgery process. An email address may be used if preferred.

Preparing For Total Knee Replacement

2-4 Weeks Prior to Surgery

Preoperative Visits

- Your upcoming joint replacement is right around the corner! Now is the time to ensure that you have completed all of the steps mentioned above. At this point in time, you will have two appointments set up with our office.
- One appointment will be your preoperative visit with the orthopedic physician assistant or nurse practitioner, which may be in the office or a telehealth visit. During this visit, we will discuss your upcoming total joint replacement in detail. We will go over what to expect leading up to surgery, the day of surgery, and the postoperative course.
- During the second appointment you will meet with our internal medicine physician assistant who will review your health history, medications, perform a physical exam, and review any other preoperative clearances from other specialists.
- After this visit, you will be sent to the lab for preoperative blood work as well as an EKG if necessary.
- You will also meet with or speak to our Orthopedic Care Coordinator, an advanced registered nurse practitioner who will follow you throughout the preoperative and postoperative process. Your Orthopedic Care Coordinator will be your main point of contact should you have any questions or concerns.
- If you or any member of your care team have any paperwork that needs to be completed by our office, such as a return to work notice or Family Medical Leave Act (FMLA) form, please bring it with you to your preoperative visits so that we may complete and fax it to the appropriate recipient.

When Do I Stop Taking My Medications?

At the conclusion of your visit with our internal medicine physician assistant, you will receive a printed handout of instructions detailing all of your home medications. In this set of instructions, you will find which medications you should continue to take up until the night before or morning of surgery, along with the medications you should discontinue before surgery.

- You will need to **all discontinue vitamins and supplements 2 weeks before surgery.**
- You will need to **discontinue the use of all NSAID medications 1 week prior to surgery.** (i.e. Ibuprofen/Advil, naproxen/Aleve, meloxicam/Mobic)
- At the conclusion of your preoperative visit, if you are taking **any anticoagulation/blood thinning medication,** you will be given specific instructions for when to discontinue these before surgery.
- You are allowed to take **Tylenol/acetaminophen** up until the night before surgery for pain control.

What Devices do I Need?

- At your preoperative appointment you will be fitted for a walker and a cane. These will be used in the immediate postoperative phase. Patients typically use a walker for the first 1 to 2 weeks. Under the guidance of a physical therapist and/or based on your own comfort level, you can transition from the walker to the cane as you feel ready.
- You will also have the option to purchase an **ice machine.** These will be on display in our medical supplies room and can dramatically assist you in reducing your postoperative pain and swelling control. If you are interested, please read "Ice and Compression Machine" on pg. 38 and ask your team for more information.

Preparing For Total Knee Replacement

Four Days Prior to Surgery

You are so close! For the four days leading up to surgery and on the morning of surgery, you will need to take a daily shower and wash with an antiseptic solution to help prevent infection. See below for instructions and details. At this time, we also recommend discontinuing the use of any topical gels, ointments, or creams on the operative leg.

Approximately two business days before your surgery date, you will receive a phone call from our office to inform you of your check-in time for surgery. This check-in time will be roughly 1.5 to 2 hours before the surgery itself. During this time, we will be getting you ready for surgery in our preoperative holding area.

During this period of time, we also recommend you begin hydrating well with water or sports drinks like Gatorade. The night before surgery, it is important to make sure you drink at least one large glass of water or Gatorade.

Preoperative Showers With CHG Antiseptic Solution

Proper skin care plays an important role in preventing infections. Please contact your surgical team if you have any skin issues on or near your surgery site, or open wounds anywhere on your body so we can ensure it is safe to proceed with surgery.

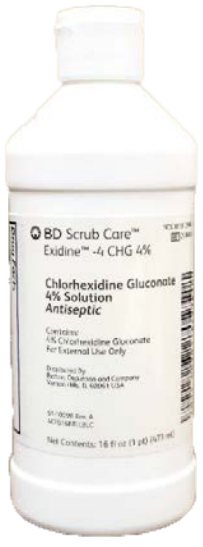
We will provide you with a 16 oz. bottle of BD Scrub Care™ Exidine™ Chlorhexidine Gluconate (CHG) 4% Solution at your preoperative visit. You will need to shower daily for FIVE DAYS with this CHG solution prior to surgery, including the morning of surgery.

REMINDERS:

- Removal of nail polish from fingers and toes preferred.
- After your last shower before surgery, **DO NOT** apply any lotions, make-up, hair products, or perfumes.
- For at least 72 hours prior to surgery, **DO NOT** shave or wax the surgical area. Facial shaving is okay.
- After your surgery, **DO NOT** use CHG solution, as it can cause excessive dryness or other skin issues.

While in the Shower

1. **Measure it out:** using a household measurement cup, measure out 1/3 cup (3 fl oz) of CHG solution prior to your shower to ensure you won't run out by the last shower. Have a clean washcloth ready.
2. **Take a normal shower:** wash your entire body as you normally would with your usual soap and shampoo. Rinse well, and turn off the water or step away from the shower stream.
3. **Apply the CHG solution:** apply it directly onto your skin or using a clean, wet washcloth. Gently wash from the neck down (avoiding the face and genitals). Be sure to wash the surgical site area, armpits, stomach, and front groin folds especially well. If you have abdominal folds, make sure to wash well under the folds.
4. **Wait 60 seconds:** allow the solution to sit on the skin for 60 seconds and then rinse thoroughly with water.
5. **Towel dry:** pat yourself dry with a clean towel and dress in clean, dry clothing. Ensure bed sheets are washed and clean as well.



Preparing For Total Knee Replacement

Day of Surgery

Scrubbing Up

Surgery day may start really early if you are the first case of the day. Please take your fifth shower with the CHG solution as directed.

Fluids

We encourage you to drink clear liquids up until 2 hours before your check-in time. You should drink 8 to 10 ounces of water or clears sports drinks. This helps you stay hydrated before surgery. No food or snacks for 8 hours prior to check-in time.

ADULTS		
Types of Liquids or Meals	***Examples***	***When to Stop Before Surgery or Procedure***
Clear Liquids	Only water or Gatorade allowed. **(Gatorade Zero for diabetic patients)** **Drinking fluids before surgery has been shown to lead to better outcomes after surgery**	Stop a minimum of 2 hours before check-in time.
Food	Solid foods and full liquids: this includes soups, broths, chewing gum, and cough drops.	Stop a minimum of 8 hours before check-in time.

Medications

Take your usual prescription medications as directed with water as discussed at your pre-op visit (exceptions to this discussed earlier, if any questions please call our Surgery Center and ask to speak with a pre-op nurse.)

What Should I Wear?

- Loose-fitting clothes such as sweat pants, baggy shirt, slip-on shoes. Do not wear yoga pants or tightly fitting stretch pants (as these are hard to put on after surgery).
- Remove all jewelry, piercings and artificial nails.
- Do not shave your surgical site or write messages for your surgeon on your leg.

Preparing For Total Knee Replacement

Day of Surgery

What Should I Bring With Me To The Surgery Center?

- Your insurance card
- Pharmacy card
- Small amount of cash or credit card for pharmacy co-pays
- Photo ID
- List of medications and dosages
- Walker
- Attachment pad for the ice machine (if purchased)
- Your smart phone
- If you wear glasses/contact lenses or removable dentures, bring a case to put these in during surgery

Don't bring large amounts of cash, valuables, watches, etc.

Check-In For Surgery

Proceed to the main floor of the Proliance Surgery Center at Valley for the check-in desk.

After You Check-In

You and your care partner will be taken back to a private room to get ready for surgery. Your care partner(s) will be able to stay with you until you are taken back to the operating room. We ask that you not have small children or family members who are ill accompany you to the Surgery Center. Once in your private room, you will remove your clothes and wipe your entire body down with antiseptic wipes to reduce the bacteria on your skin. You may need assistance to reach your back. This material may make your skin feel a bit sticky. You will then put on a hospital gown and socks and your clothes will be placed in a bag. You can now relax in a recliner with a warm blanket

Next...

A nurse will come in and review your medical history, medications, and allergies. Your blood pressure, pulse, and temperature will be recorded. An IV will be started in one of your arms. You will be given some oral medications to help with pain after surgery. You will be given iodine swabs to clean your nostrils which minimizes bacteria in your nose, and reduces your risk of developing an infection.

Your anesthesiologist will come in and discuss anesthetic options for your surgery. Most patients have a spinal anesthetic with sedation and a peripheral nerve block (see Anesthesia section below for details).

Your surgeon will come in to see you and answer any questions, confirm the procedure you are about to have, and put their initials on your operative site. They will sign your surgical consent, and after you review it, you will be asked to sign as well.

Your operating room circulating nurse will then come to take you back to the operating room, and your care partner/family will wait for you in the waiting room area where they will have access to free Wi-Fi and a TV. Your surgeon will make a plan to let them know when the surgery is done.

Preparing For Total Knee Replacement

The Operating Room

This is a bright, chilly room with lots of equipment. In the room, there will be a surgical scrub technician who will assist with the surgery and hand instruments to your surgeon, the nurse who brought you into the room, and your anesthesiologist. Your nurse will give you a warm blanket and place monitors on your arm and finger to check your blood pressure, pulse, and oxygen level. You will be given antibiotics through your IV to minimize the risk of infection as well as medication to decrease blood loss during surgery. Your anesthesiologist will administer the anesthetic you discussed, after which the nurse and team will get you in the proper position for surgery, prep your leg with an antiseptic solution, and then place sterile drapes on the surgical site. You will have some sedation through your IV and may not remember this activity. All of this takes about 30-40 minutes and then surgery will begin.

Anesthesia

As previously discussed, your anesthesiologist will review your history and make recommendations for your anesthetic. Most patients have a spinal anesthetic with sedation through the IV. Studies have shown decreased complications after surgery with spinal vs. general anesthetics.

Spinal Anesthesia with IV Sedation

Spinal anesthesia with IV sedation is the preferred choice of both your orthopedic and anesthesia doctors. Spinal anesthesia (Fig. 1) is a one-time injection made at the level of your lumbar/low back vertebra. A spinal anesthetic provides excellent numbness from your waist down to your toes. This numbness will last throughout the procedure and will wear off 60 to 90 minutes after the surgery is complete. You will be asleep for the entirety of the procedure with medicine given to you through your IV. You will wake up safely in our recovery area having already received medications to help treat pain and nausea. The advantages of spinal anesthesia versus general anesthesia are significant and include needing little to no IV narcotics for pain control during your procedure, quicker emergence in our recovery room, and avoidance of inhaled anesthetic gases and breathing tubes. When comparing spinal anesthesia to general anesthesia, medical research has shown a lower incidence of nausea and vomiting after surgery, lower amounts of blood loss, lower need for postoperative pain medicine, and a quicker return to cognitive baseline.

The most commonly occurring risks of spinal anesthesia include:

- Less than 1% risk of bleeding and infection at the site of spinal injection.
- Less than 1% risk of headache.

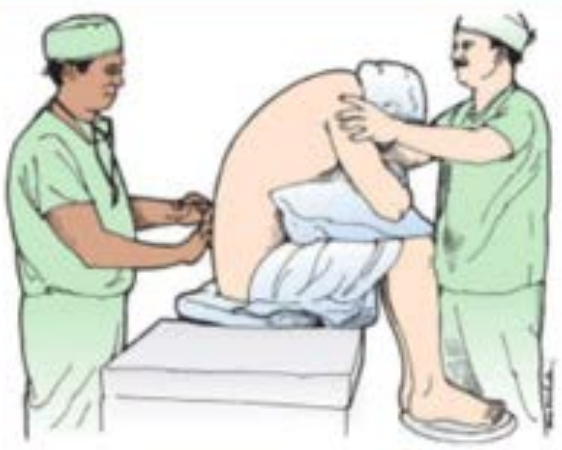


Figure 1

This is the typical position for spinal placement

Preparing For Total Knee Replacement

Anesthesia (Continued)

General Anesthesia

General anesthesia is the delivery of anesthesia medicines, both intravenously and inhaled, in order to keep you safely asleep throughout your procedure. After you are put to sleep with medication given through your IV, your upper airway will be secured by the placement of a breathing tube. During your procedure, you will be given medication to help treat pain and nausea via your IV in order to ensure every measure has been taken to provide for a safe and comfortable awakening from anesthesia.

The most commonly occurring risks of general anesthesia include:

- One in four patients may experience a sore throat
- One in four patients may experience nausea/vomiting.

Long-Acting Peripheral Nerve Blocks

Assuming no medical contraindications exist, all patients undergoing a total knee replacement will be given the option of a peripheral nerve block, regardless of undergoing general anesthesia or spinal anesthesia. Peripheral nerve blocks have been shown to provide significant pain relief over the first 18-24 hours of your procedure. Peripheral nerve blocks are placed under ultrasound guidance. Additional long-acting numbing medicine will also be used by your orthopedic surgeon during the procedure to ensure the back of your knee is numb as well. The combination of these two blocks have been shown to significantly reduce the need for postoperative pain medicines after your surgery. Avoidance of large doses of pain medicine has been shown to significantly reduce their common side effects like nausea, vomiting, increased sedation, and constipation.

A NOTE FROM VALLEY ANESTHESIA ASSOCIATES

We hope this brief summary of your anesthetic choices has helped prepare you for your upcoming surgery. Know that Valley Anesthesia Associates will make every effort to tailor a safe and effective anesthetic to each and every patient, with close attention paid to your specific medical needs. We will be available to answer any and all follow up questions or concerns the day of your surgery. Please also feel free to contact us prior to your surgery as an anesthesia provider will be available during normal surgery center business hours.

Please also note that anesthesia is billed separately.
For any anesthesia billing questions please call (425) 407-1500 Ext 1001 or 888-900-3788.

Preparing For Total Knee Replacement

Recovery Room

- Once your surgery is complete, you will be transferred to the recovery area. (Phase 1)
- Following surgery, your surgeon will talk to family members and your care partner.
- Once in the recovery room you will continue to be monitored closely by your recovery room nurse(s).
- It is common to feel groggy or lightheaded during phase 1 recovery. You may have little or no recollection of phase 1.
- If you have an ice machine, the sleeve will be placed on your knee after the dressing has been placed and it will be connected to an ice machine while you are in phase 1. Otherwise ice packs will be applied to the knee
- You will remain in Phase 1 until you are awake, alert, have regained sensation to your lower extremities, and any symptoms are well-controlled. Typically, you will remain in phase 1 for a relatively short period of time before being transferred to phase 2.
- Once in phase 2, your family will be allowed at your bedside.
- You will be able to drink water and eat a small snack.
- You will be encouraged to walk with staff for the first time.
- The nursing staff will continue to monitor you, and if necessary, treat any remaining postoperative symptoms.

Discharge

You will be ready to go home when the following criteria are met:

- You are tolerating food and liquids.
- Pain is well controlled.
- You demonstrate the ability to safely walk and do stairs (if needed).
- You are cleared by your surgeon and nursing staff for a safe discharge.

Once these requirements, and any individual needs specific to your care are met, then you will be discharged.

Recovering From Total Knee Replacement

Getting Back to Life

Congratulations! Now that the stress and worry of surgery is behind you, we recommend that you spend a few minutes to simply enjoy being home, relaxing with your leg elevated and ice/cold therapy on your knee. Plan on getting started first thing in the morning. We will guide you through the details of your recovery starting with key topics of concern and emphasizing what to expect in the days, weeks, and months to come. We will also point out key "to do's" and pitfalls to avoid.

We have found when patients approach their recovery and rehabilitation in the first week following a knee replacement like a "full time job", they seem to experience a better recovery process.
So, what does that daily job schedule look like?

- Begin the morning with your morning routine. Eat your breakfast, do your knee exercises (emphasizing range of motion), walk at least 300 ft (which is a city block) progressing 100 ft per day, and then lay down flat on your back, icing and elevating your leg for a minimum of 30 minutes (Fig. 2 on the next page).
- Around noon, eat your lunch, do your exercises, walk, and then once again lay down to ice and elevate for a minimum of 30 minutes.
- Around dinner time, eat, do your exercises, walk, and then lay down ice and elevate for a minimum of 30 minutes. You can relax and take the rest of the evening off.
- When it comes time to sleep, feel free to go to sleep with your leg elevated on several pillows. Ultimately, we recommend that you sleep in any position that is comfortable. Sleep and rest are necessary for great healing.

Your first day or two at home you will notice increased pain as the nerve block wears off. The normal response of increased swelling is an increase in pain. Remember to be diligent about icing and elevating your leg as well as taking Tylenol and Meloxicam for pain relief. If needed, you may use the opioid pain medication as prescribed, starting at a low dose and working your way up as needed for pain control. Keep in mind it is normal for your knee discomfort to be in the 1 to 3 range when you're sitting absolutely still, 4 to 6 range when you're up moving around, and greater than 6 – even up to 10 – when doing your therapy exercises. Over the first 5 days, you will experience the peak of the pain and swelling. After that, we anticipate the need for pain medication to begin to lessen.

During weeks 2 to 4, while your knee is still quite sore, the pain and swelling will progressively lessen while your activity level will continue to increase. Around week 4, most patients no longer need a walker or cane. Between week 4 to 6, most patients are considering returning or have already returned to work. In our experience, those who have the ability to sit and stand as they need or want to return to work in 4 weeks, whereas those who have jobs that require mostly standing, walking, and climbing generally head back to work around 6 weeks. Overall, you will notice the biggest improvement in your knee in the first 3 months.

Recovering From Total Knee Replacement

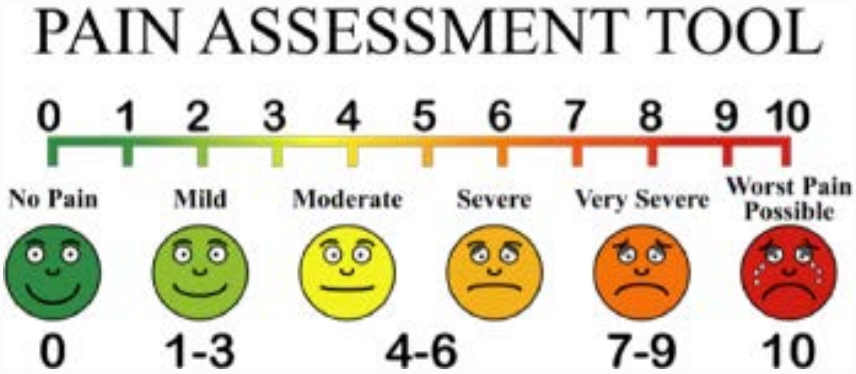
Key Topics of Concern

The normal bodily reaction to any surgical procedure is pain, swelling, weakness, bruising, and on rare occasions, blistering around the incision site. It is important to know and understand how to manage each one of these known responses.

Pain

Pain is one of the expected responses to a knee replacement. We will empower you with ways to help control and minimize your discomfort. You will frequently be asked to rate your pain based off of the Visual Analog Scale below.

Over the first several days to weeks, we anticipate that your pain will be around a 4 or 5. While doing knee range of motion exercises, you may experience pain up to a 9 or 10. **Please be reassured that you are not harming your knee in any way.** Minimizing swelling and using ice and elevation can help control that pain. We will also provide you with specific medications that will be used to control your pain. All of these are mentioned in more detail below.



Swelling

Swelling will be one of the biggest challenges for you over the first 5 days. This is a normal and expected response to surgery. Swelling is best controlled by lying flat on your back, elevating your operative leg on a wedge of pillows or blankets (well above your heart level), allowing gravity to pull swelling out of your leg and get the fluid to your heart (Fig. 2). The heart will get rid of the extra fluid. Lay this way for a **minimum of 30 minutes at a time every 2 hours during the day**. Apply ice or use the ice machine on your knee during that time. This is particularly important during the first 3 to 4 days following surgery.

See Figure 3 below for what NOT to do.

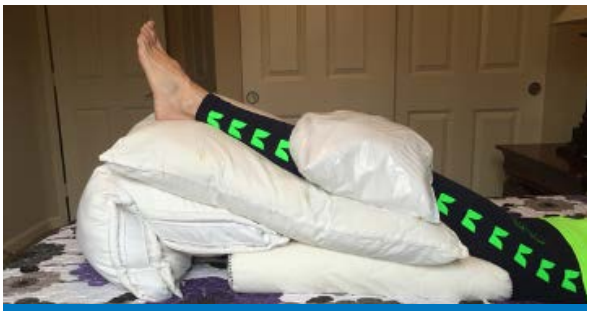


Figure 2

Proper elevation and icing of the knee.

Figure 3

AVOID THIS POSITION! Sitting in a recliner or with pillows only under the knees, while comfortable, does not allow gravity to effectively pull the extra fluid out of your knee and get it to your heart, and will make it more difficult to straighten your knee.

Recovering From Total Knee Replacement

Key Topics of Concern

Swelling (Continued)

Avoid sitting with your operative leg dangling down for more than 30 minutes at a time. Sit in this position only when you are eating meals for the first 3 days. This will prevent the bend (flexion) of your knee from progressing. Sitting with your leg hanging down for too long allows gravity to work against you, pulling fluid back into your knee, calf, ankle and foot This increase of swelling will decrease the ability to bend or straighten your knee and will increase your pain.

Generally speaking, swelling is better in the morning and gets worse as the day progresses. Elevating your leg will help decrease swelling. If you are elevating properly and are not seeing any notable change/relief of swelling, please reach out to our Orthopedic Care Coordinator, ARNP at 425-656-5060.

Ice/Cold Therapy

Ice/cold therapy is your friend!! Cold therapy such as the "Polar Care Wave" and "IceMan" machines (Fig. 4, 5 & 6), gel packs, frozen bags of peas or bags of ice will help control swelling as mentioned above and help to provide relief from pain. You may use cold therapy as frequently as you would like. We recommend that you give your skin a break from icing some portion of every hour, particularly if you are using bags of ice. Also consider using a thin material between your cold therapy and your skin. We would like to emphasize the use of cold therapy as your first go-to method to decrease pain.

See "Ice and Compression Machine" on pg. 38 for more information about maximizing cold and compression therapy, which has been shown to decrease the need for opioid pain medication amongst other benefits.

Figure 4

Figure 5

Figure 6

Recovering From Total Knee Replacement

Key Topics of Concern

Weight Bearing and Use of an Assistive Device

You may place as much weight onto the operative leg as your pain, comfort, common sense, and balance will allow. You will not damage your knee replacement by placing weight on the leg. We would like you to use a walker for the first week to ensure that you do not fall. As you progressively put more weight on the leg, you may progress off of the walker as tolerated. For example, when you no longer feel that the walker is needed for your pain, and you feel safe, confident, balanced, and comfortable, you may progress to a cane. If you are carrying your walker more than using it for balance and safety, you are probably ready to transition to a cane. It is usually best to use the cane in the hand opposite of the knee replacement (Fig. 7). When you no longer feel a cane is necessary for pain, and you feel safe, confident, balanced, and comfortable, you may discard the cane. The length of time it takes to walk without support aids is not important and will not determine the success or failure of your knee replacement. However, you have our permission to walk without support whenever you feel you are safe. Some people do this within 2 weeks of surgery, others take 6 weeks or so.

For a LEFT knee replacement, use the cane in the RIGHT hand. For a RIGHT knee replacement, use the cane in the LEFT hand. The tip of the cane and the operative leg should strike the ground at the same time, followed by swinging your good leg forward.

Figure 7

Medications for Pain

You will be given a prescription for specific medications that will help control your pain. Most people go home with the following medications (unless medical issues limit their use):

- **Tylenol** 500 mg tablets, 2 pills taken by mouth every eight hours. This will be your main medication for pain control.
- **Meloxicam** 7.5 mg tablets, 1 pill taken by mouth twice daily with a meal (breakfast and dinner). This medication will help control swelling and decrease your pain.
- **Oxycodone** 5 mg tablets, ½ of a pill up to 2 pills every 4 hours taken by mouth as needed for pain.

Some patients may not tolerate one or more of the above medications. Please indicate this to your care team so that an alternative medication may be provided. **Refer to the next page for a helpful pain management guide.**

Weaning Off of Opioid Pain Medication

Your goal is to take as little opioid pain medication as necessary to reasonably control your pain, and to continue to decrease the use of this medication as your symptoms improve. Once you establish the amount and frequency of pain medication necessary for pain control right after surgery, plan on using that amount routinely for just a few days until your pain begins to improve. We anticipate that you will need some level of opioid medication to a varying degree for up to 4 weeks. Start weaning off of opioid pain medication by taking fewer pills at a time, or taking pills less frequently.

- **Example 1**: Take 1 tab every 4 hours instead of 2 tabs
- **Example 2**: Take 1 tab every 6 hours instead of every 4 hours

Recovering From Total Knee Replacement

Key Topics of Concern

Mild Pain	Moderate Pain	Severe Pain
Ice and Elevation	Ice and Elevation	Ice and Elevation
ANALGESIC **Tylenol/acetaminophen** 1000 mg every 8 hours (maximum daily dose 3000 mg in 24 hours)	**ANALGESIC** **Tylenol/acetaminophen** 1000 mg every 8 hours (maximum daily dose 3000 mg in 24 hours) DO NOT TAKE IF ALSO TAKING **NORCO**	**ANALGESIC** **Tylenol/acetaminophen** 1000 mg every 8 hours (maximum daily dose 3000 mg in 24 hours) DO NOT TAKE IF ALSO TAKING **NORCO**
ANTI INFLAMMATORY If prescribed **Mobic/meloxicam** take 7.5 mg twice daily.	**ANTI INFLAMMATORY** If prescribed **Mobic/meloxicam** take 7.5 mg twice daily.	**ANTI INFLAMMATORY** If prescribed **Mobic/meloxicam** take 7.5 mg twice daily.
	OPIOID If prescribed **Tramadol:** Take 1 tab (50 mg) every 4 hours as needed (maximum daily dose 300 mg in 24 hours) If prescribed **Norco (hydrocodone/acetaminophen):** take ½-2 tabs every 6-8 hours as needed, or only prior to/after physical therapy. If prescribed **Oxycodone:** take ½-2 tabs every 6-8 hours as needed, or only prior to/after physical therapy.	**OPIOID** If prescribed **Tramadol:** Take 1 tab (50 mg) every 4 hours as needed (maximum daily dose 300 mg in 24 hours) If prescribed **Norco (hydrocodone/acetaminophen):** take ½-2 tabs every 4 hours as needed. If prescribed **Oxycodone:** take ½-2 tabs every 4 hours as needed.

Weaning Off of Opioid Pain Medication (Continued)

Stopping opioids abruptly can lead to symptoms of withdrawal, and many of these symptoms overlap with side effects from taking opioids. Withdrawal symptoms can include the following: restlessness or anxiety, increased pain, insomnia, nausea, vomiting, diarrhea, sweating or fevers, drowsiness, tremors, rapid heart rate, blood pressure changes, confusion, hallucinations, and seizures.

You can avoid these symptoms by taking as little opioid pain medication as necessary and making a change every 1-2 days to your medication regimen as noted above, with the goal of stopping using them as soon as possible.

Other Medications

Most people go home with the following medications in addition to the pain medications mentioned above (unless medical issues limit their use):

- **Aspirin 81 mg tablets** - take 1 tab by mouth twice a day (one with breakfast and one with dinner). This is for blood clot prevention. You will need to take aspirin for a total of four weeks.
- **Omeprazole 40 mg capsules** - take 1 cap by mouth daily. This is to protect your stomach while you're taking aspirin and Meloxicam together.
- **Miralax 17 g/packet** - mix 1 packet with water and drink daily for constipation if needed.

Some patients may not tolerate one or more of the above medications. Please indicate this to your care team so that an alternative medication may be provided.

Recovering From Total Knee Replacement

Key Topics of Concern

Constipation

Constipation is a very common problem following knee replacement surgery. Contributing factors are the use of opioid pain medications, decreased activity, poor diet, and poor hydration. Decreasing the use of opioids, eating a healthy diet high in fiber, staying well hydrated, and increasing activities will help prevent constipation from occurring. We will prescribe Miralax to help reduce the risk of developing constipation.

Until you have regular bowel movements, we encourage you to follow the regimen below. All of these medications can be obtained over-the-counter at any pharmacy.

Day 1 & 2	***Day 3***	***Day 4***
Miralax 17 g/packet mix 1 packet with water and drink daily	Add **Metamucil** (psyllium) daily (take as directed)	If no bowel movement yet, continue the above medications and add either **magnesium citrate OR a rectal suppository OR a Fleet enema (take/use as directed)**

If you develop sudden onset abdominal pain, severe bloating, nausea or vomiting, please contact our office. This may be a sign of a more serious complication.

If you have a history of constipation, or concerns about this being a potential postoperative occurrence, you can start taking Miralax a day prior to surgery.

Blood Clot Prevention: It's Important

Knee replacement surgery increases the risk of developing blood clots in the veins of your legs. This is called deep vein thrombosis (DVT). We use several methods to decrease this risk including the use of blood thinners. If you are **low risk,** meaning no prior history of blood clots (DVT) and no unusual risk factors, then **Aspirin 81 mg tablets 1 tab twice a day (one with breakfast and one with dinner) for 4 weeks** will be used to thin your blood.

If you are at high risk of a blood clot, then an alternative **oral blood thinner will be used for approximately 6 weeks.** We have used this very safe and effective strategy for many years to minimize the risk of blood clots.

Some patients are on other types of blood thinning medications for other medical reasons. Your care team will give you specific directions on when to resume those particular medications and what dose to take. Almost always, you will be placed on a lower dose than you usually take for five days from the time of your surgery. At the end of this time, you will then resume your normal preoperative dosing of your blood thinning medications.

If you have any questions, please contact the Orthopedic Care Coordinator at 425.656.5060.

Signs And Symptoms Of A Blood Clot (DVT)	***Signs And Symptoms Of A Pulmonary Embolism***
Swelling in your calf or thigh that does not improve within an hour of elevation over heart level. Constant pain, increased warmth, and/or tenderness in your calf, or with motion of your ankle.	Sudden onset of shortness of breath, difficulty breathing or chest pain. This is a true medical emergency. It occurs when a blood clot travels to your lungs. Call 911 immediately. **DO NOT DRIVE.**

Call 911 immediately if you develop any of these symptoms:

- Sudden chest pain
- Difficulty breathing
- Feeling of shortness of breath
- Pain with deep breathing
- Coughing blood

Recovering From Total Knee Replacement

Incision Care

How Do I Take Care of My Wound?

Do not use ointments, creams or lotions around your wound, particularly when the mesh is still in place. After the mesh has been removed, please wait one more additional week before you apply any ointments, creams or lotions to your incisional area.

See "Dermabond Prineo Instructions" in the Appendix for more information about the skin closure system.

Let's Talk About Drainage

It is not uncommon to have slight drainage from your incision site. If it occurs, it is generally very minimal and lasts just a few days after surgery. If at any time you are concerned about wound drainage, please call our office at 425.656.5060 and ask to speak with our Orthopedic Care Coordinator, ARNP.

You Can Shower!

Over your incision, you will see a dressing that is silver in color with clear edges (Fig. 8). This dressing is waterproof. Because of this, you can shower! We would like you to **leave this dressing in place for FIVE DAYS from your surgical date.** On rare occasions, some people have a reaction to the adhesive. If you begin to have itching or redness surrounding the dressing, please remove immediately.

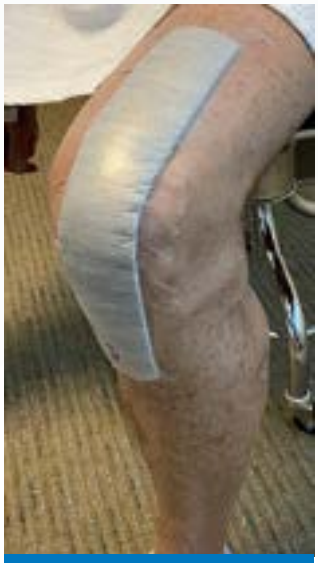


Figure 8

Remove Your Silver Dressing When You Have Been Home 5 Days

Once it has been five days from your joint replacement, you should remove your Mepilex/ silver dressing. Begin by grabbing the top edge of the clear portion of the dressing (Fig. 9, 10). Pull gently in a downward fashion until completely removed. Underneath this dressing, you will see a clear mesh on your incision. This is called **DermaBond Prineo** and is part of your wound closure. This should remain over your incision for up to **THREE WEEKS**. It is normal for it to look "wrinkly" (Fig. 11). You may find that the edges of the mesh start to curl up. In this case you may trim off the curled up edges (Fig. 12). You may continue to shower as the mesh continues to keep your incisional area waterproof.

Figure 9

Figure 10

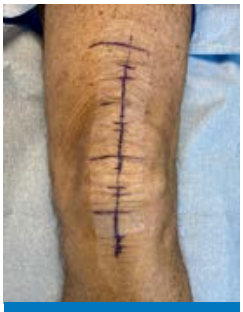


Figure 11

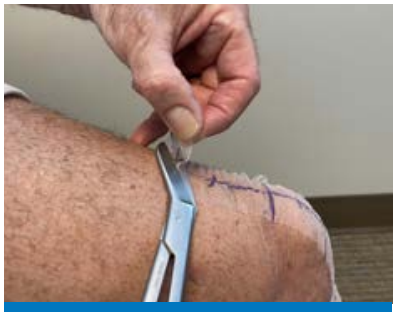


Figure 12

Recovering From Total Knee Replacement

Incision Care

Time to Remove the Dermabond Prineo

It is time to remove the Dermabond Prineo now that you are three weeks from your joint replacement Apply a generous amount of any type of petroleum product such as Vaseline. Work it into the mesh. Allow that to sit on the mesh for three to five minutes. After that time, start with the top edge of the mesh and gently pull in a downward fashion (see Fig. 13, 14 & 15). The mesh should peel off fairly easily. If it is still difficult, apply more petroleum product and/or give more time to soak into the mesh. To forcibly remove the mesh may cause injury to your skin. You may continue to shower as your incision is now well healed. We would like you to hold off for one more week before you soak in a tub or a pool.

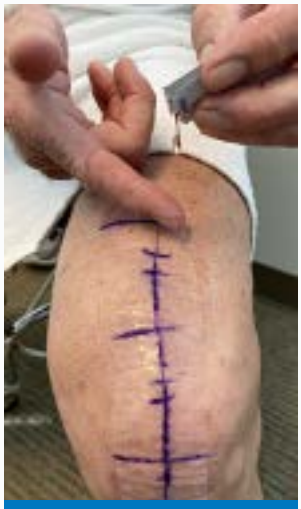


Figure 13

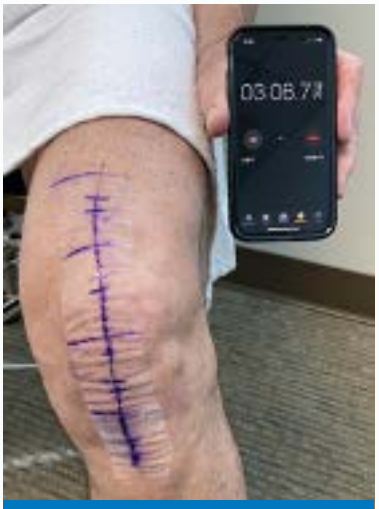


Figure 14

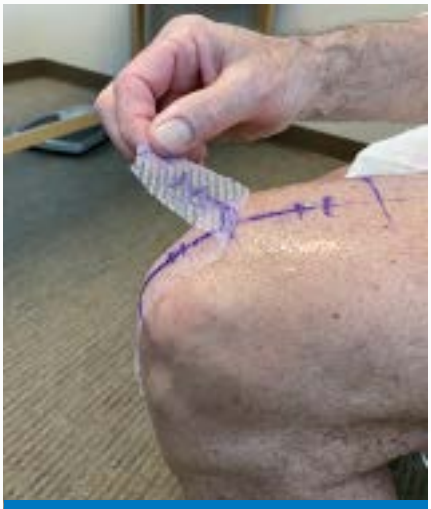


Figure 15

Bruising

It is not unusual to develop bruising following a knee replacement (Fig. 16, 17 & 18). Bleeding normally occurs around the knee and gravity will cause this blood to track along the tissue planes of your leg resulting in bruising of the thigh, calf, and foot/ankle. This is normal and you should not be alarmed. Bruising will develop over time, and ultimately end up in your toes before it's over. As the body absorbs the blood, the bruising will gradually go away on its own.

Figure 16

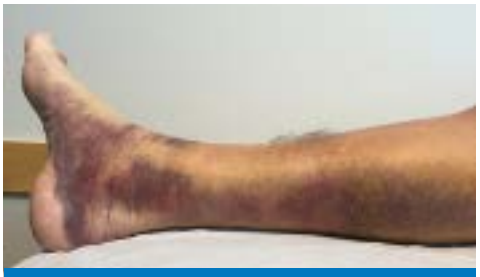


Figure 17

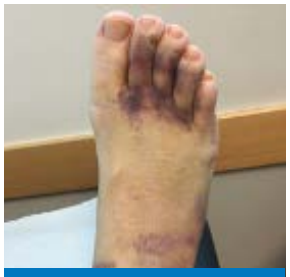


Figure 18

Recovering From Total Knee Replacement

Incision Care

Blisters

Some patients may develop blisters around the knee and/or the incision (Fig. 19 & 20). Although blisters can be alarming in appearance, they pose no significant risk to your knee replacement. They may leak clear fluid for a period of time. If needed, you may cover the blistered area with a non-stick dressing and paper tape until a "scab" forms. These supplies can be obtained at any pharmacy. Otherwise, they should be left open to air and can generally be ignored as they will resolve on their own (Fig 21).

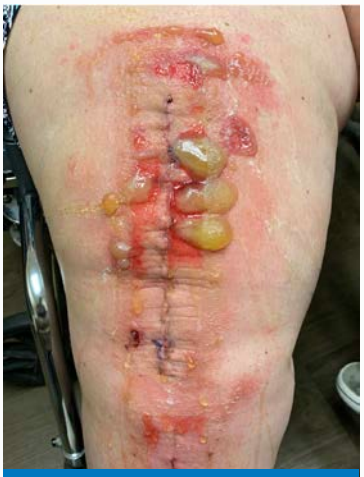


Figure 19

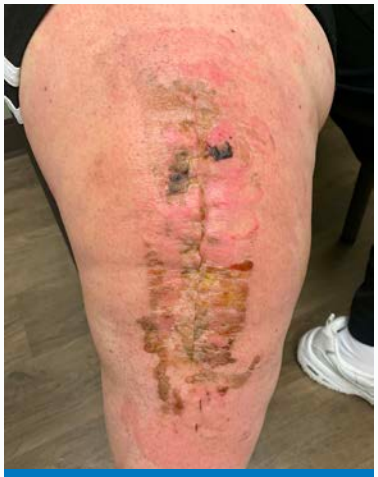


Figure 20

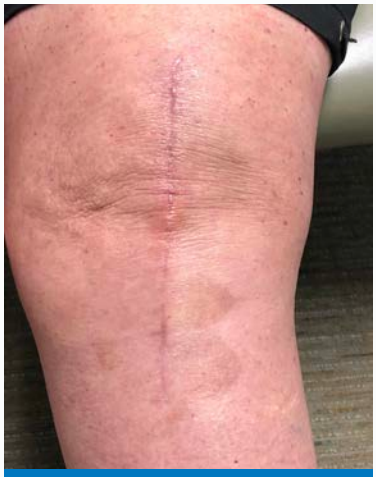


Figure 21

Numbness

Most patients develop an area of decreased sensation (numbness or tingling) on the lateral (outer) aspect of the knee (Fig. 22). This numbness is expected and normal after knee replacement. It is not a sign of any problem. The area of numbness typically decreases in size over the next 6 to 12 months.

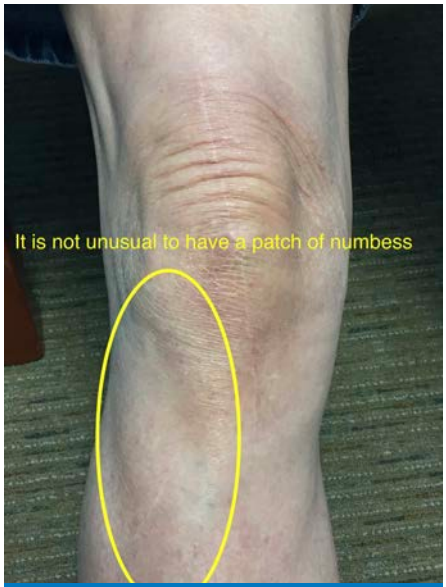


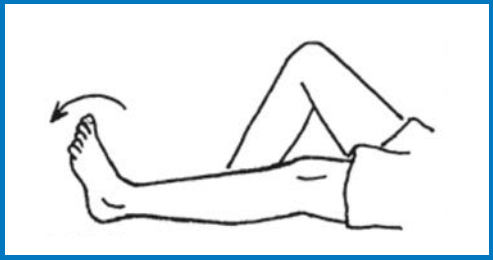
Figure 22

Recovering From Total Knee Replacement

Home Exercises for Your New Knee

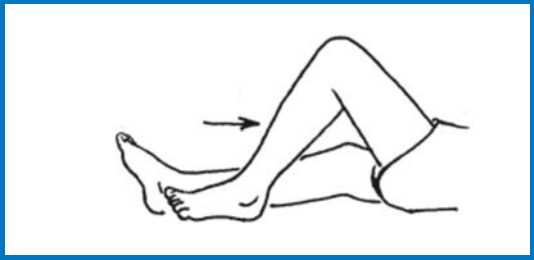
You will be able to walk before you are discharged from the Surgery Center. We expect that you will resume outpatient physical therapy within 2 to 3 days following surgery. Until then, you will need to start your own, self-directed therapy as planned during your pre-hab visit. Begin the following exercises the night of surgery, with 1 set of 10 repetitions of each exercise. Starting the next day, increase this to 3 sets of 10 repetitions for each exercise, and do this 3 to 4 times per day. Ice your knee for a minimum of 30 minutes after each exercise session.

Ankle Pump



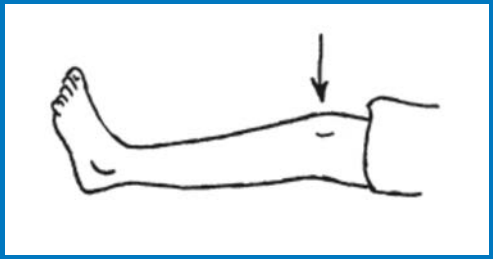
Move your foot back and forth as if pressing on a gas pedal. Make sure to move all the way up and down through the full motion.

Heel Slide



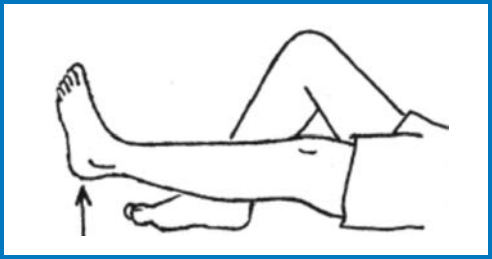
Slide heel up toward bottom. Hold for 3 seconds, then slide your heel down. You can also do this in a seated position by sitting upright with both feet on the floor, sliding your heel back, slowly bending the knee.

Quad Set



Tighten muscles at the top of the thigh by pushing the knee down. Hold for 5 seconds and release.

Straight Leg Raise



Lift leg 12 inches with the knee straight and toes pointed up. Your other knee may be bent if needed.

Recovering From Total Knee Replacement

Home Exercises for Your New Knee

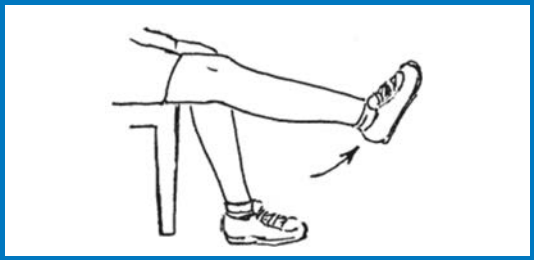
Help, I Can't Raise My Leg!

For the first week or two after total knee replacement, many people cannot independently lift their leg and require assistance. This is normal. After 1 to 2 weeks, you will regain the ability to raise your leg and will no longer require much, if any, assistance to lift it. When you can raise your leg on your own, it is generally much easier for you to get in and out of bed independently. If you cannot raise your leg on your own, it does not mean you are behind, not working hard enough, or that something has gone wrong. It just takes time.

Knee Flexion

While standing and holding a kitchen counter or dresser, bend knee and hold for 5 seconds.

Long Arc Quad

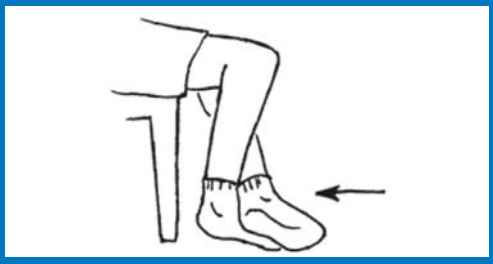


While sitting, straighten your knee and hold for 5 seconds. Return knee to bent position.

Stretching Exercises

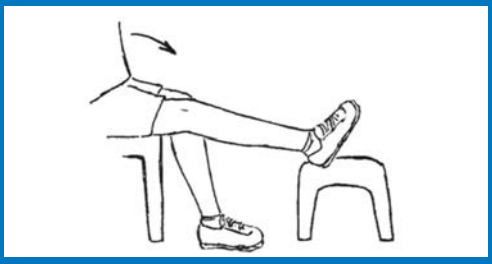
Do each of the following stretches three times per day for up to 20 minutes at a time, holding each stretch for 30 seconds. Perform each stretch five times.

Quad Stretch



Cross legs with your surgery leg on the bottom. Slide feet under the chair, keeping hips on the chair.

Hamstring Stretch



Sit with your foot resting on a stool or chair seat, keeping back straight. Gently lean forward, to stretch the back of the thigh.

Recovering From Total Knee Replacement

Knee Flexibility: It's Really Important!

Most of your improvement after a knee replacement will take time. However, you must feel urgency in accomplishing a good range of motion for your knee (flexibility). Within 7 days after your knee replacement, you should be able to get your knee entirely straight/full extension (Fig. 23) with no space between the back of your knee and the table. You should also be able to bend/flex your knee to at least 90 degrees (Fig. 24). Ninety degrees is the same thing as a right angle. If you achieve 90 degrees within 1 week and continue to push forward after this, you will end up with excellent range of motion for your knee replacement. Most of our patients end up with 120 – 130 degrees of flexion (Fig. 25).

Make sure you know how much flexibility you have in your knee. At each visit, ask your therapist how much bend your knee has and how much extension (straightening) you have. This will help you know if you are progressing appropriately.

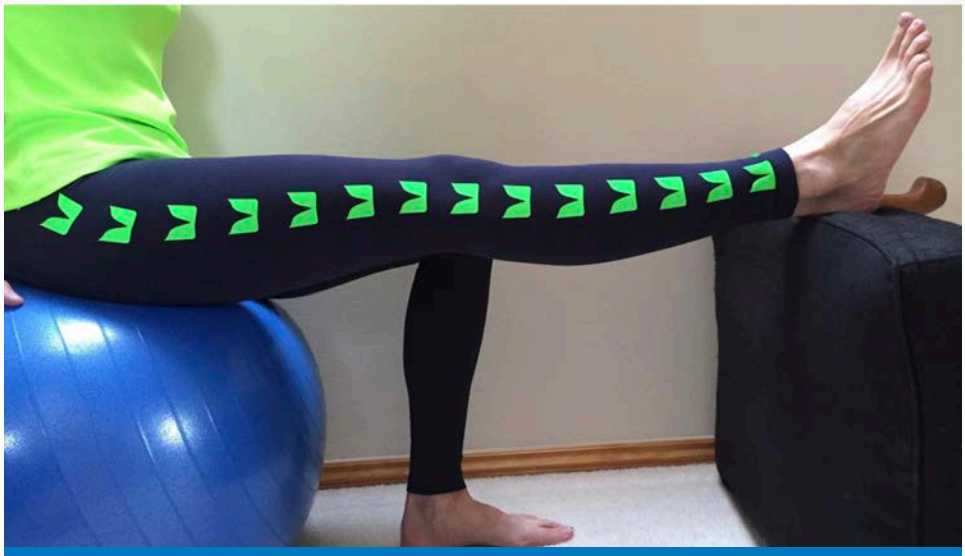


Figure 23: 0 degrees Full Extension

Figure 24
90 degrees of flexion

Figure 25:
130 degrees of flexion

OWN YOUR NUMBERS!!

Recovering From Total Knee Replacement

To-Do

Although many of you will have a physical therapist monitoring your progress, it is your responsibility to obtain good range of motion. The therapist and your family can encourage you, but you must do the work. **It is not the job of the therapist, your family, or your doctor to bend and extend your knee... it is yours.**

These tips will help you accomplish full flexibility of your knee(s) in the appropriate time frame:

Use commercial breaks (if you're a TV watcher) or the end of a chapter (if you're a book reader) to help increase the bend in your knee. Sit in a chair that allows you to slide forward while keeping your feet firmly planted on the floor. Bend your knee as far as you can on your own. Then, with your feet firmly planted in place, slide forward on your chair, which will force your knee into a more bent position. Hold this position during the commercial time or for 2 minutes or as long as you are able. Then relax until the next commercial or chapter break. **Make sure your chair is against a wall while doing these exercises** (Fig. 26, 27 & 28).

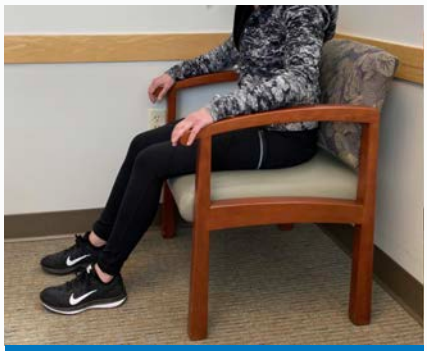


Figure 26

Figure 27

Figure 28

In the same manner, use a coffee table or a footrest to help gain the ability to fully straighten your knee. At each commercial or chapter break, rest your heel on the coffee table or footrest, allowing gravity to pull the knee out straight. You may also push down on your knee for additional pressure in the downward direction. Hold this until the commercial is over or for 2 minutes or as long as you are able (Fig. 29, 30, 31).

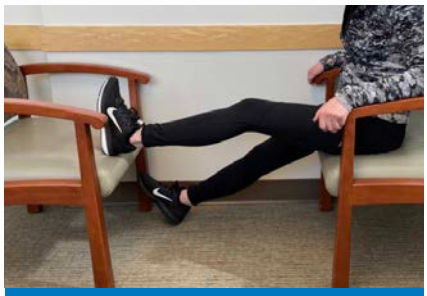


Figure 29

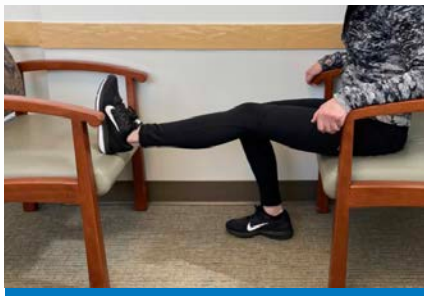


Figure 30

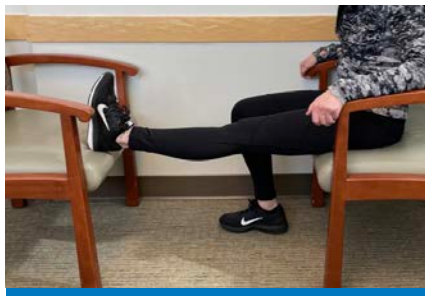


Figure 31

Recovering From Total Knee Replacement

To-Do

Extension/Straightening

Gaining the last ten degrees of extension is always a challenge. This sequence will help.

Directions: Place your hands on a counter, table, or the back of a sofa for balance purposes. Starting with your feet together, get your operative leg as straight as you can (Fig. 32). Take your opposite leg and cross it in front of the leg with the newly replaced knee (Fig. 33). Line up your toes side-by-side (Fig. 34). Once you have positioned your foot appropriately, press down with your heel. This will cause your opposite leg to straighten and assist you in straightening your replaced knee (Fig. 35). For further stretching/straightening, bend at the waist as if you are trying to touch your toes (Fig. 36). Hold the stretch for 60 seconds, and repeat five times. Do this sequence three times per day. While this stretch can be uncomfortable and perhaps even painful, keep in mind, you are not harming your knee in any way. (In the example below, the right knee has been replaced.)

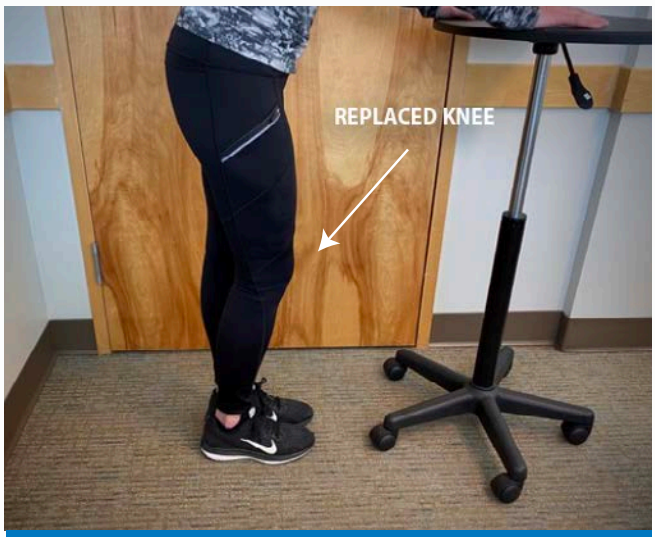


Figure 32

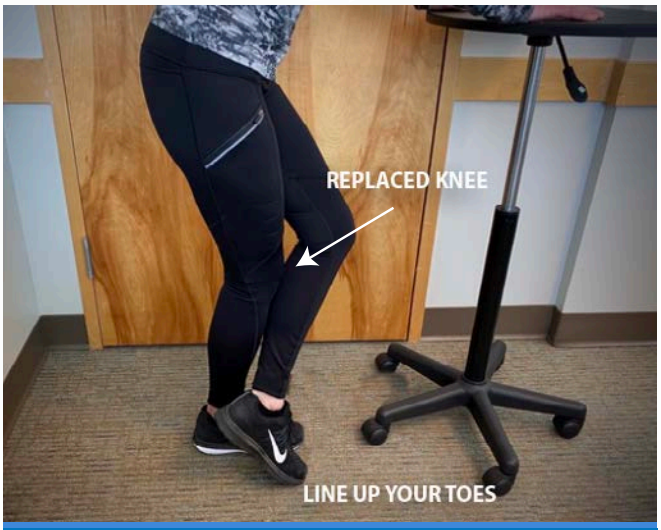


Figure 33

Recovering From Total Knee Replacement

To-Do

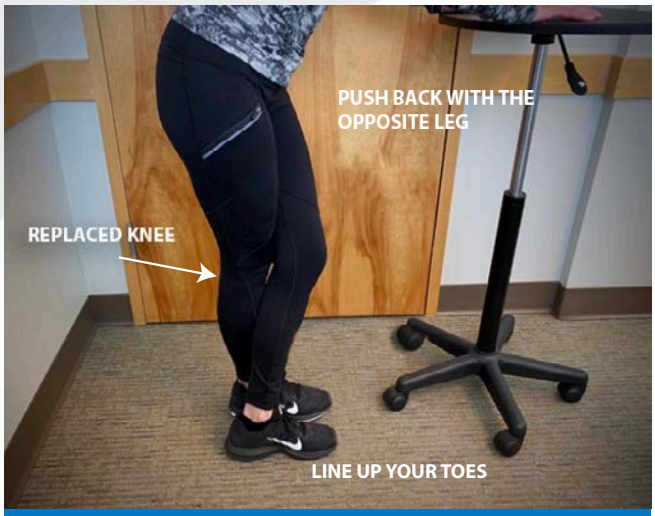


Figure 34

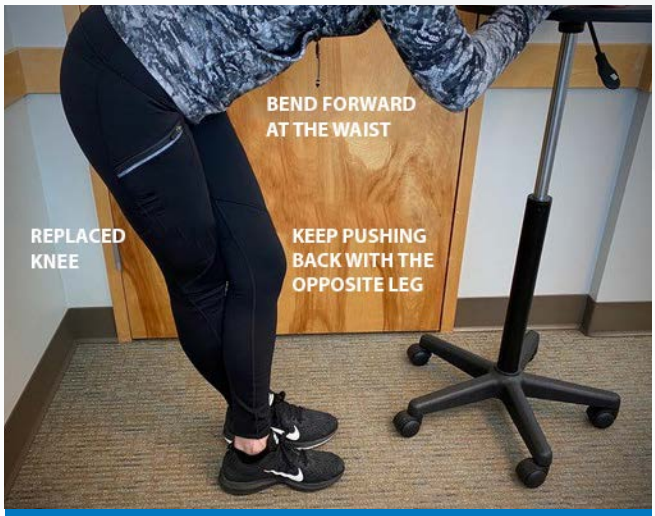


Figure 35

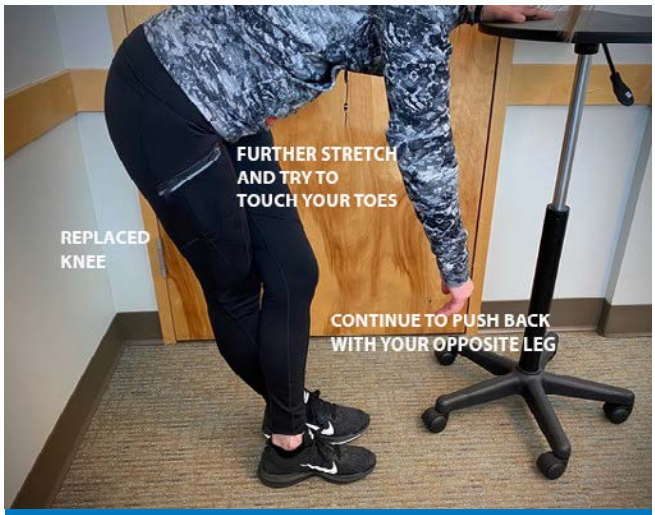


Figure 36

Recovering From Total Knee Replacement

Frequently Asked Questions

I have a low-grade temperature, is that normal?

Yes, it is normal to have a low-grade temperature for the first few days after surgery, and is your body's response to the stress of surgery. A temperature of 101.5°F or greater should be reported to your surgeon.

Is it normal to have continued pain in the knee?

Yes, it is normal to have fairly significant pain, particularly with physical therapy. Rest assured that even though it is painful, you are not harming your knee. It is important to continue to work hard on increasing your motion.

Is it normal to have swelling and warmth of my knee?

Yes, it is normal for the knee to become quite swollen, and you will need to continue to ice and elevate your leg above your heart level for a minimum of 3 times a day for 30 minutes at a time to control the swelling. The swelling and inflammation associated with healing will continue to some degree for 4 to 6 months after surgery, and it is normal for the knee to look bigger and feel slightly warmer than your other knee.

Why is my leg bruised?

It is normal to develop bruising on your knee/leg and down to your foot Your body will absorb the blood and the bruising will go away on its own.

How long do I need to use my walker/crutches/cane?

A walker/crutches are used to help you ease back into a normal walking pattern. Whenever you feel safe, comfortable and confident to transition from your walker to a cane, you may do so. The same goes for transitioning off of a cane to walking without any assistive device.

When can I stop taking the medication you sent home with me?

Aspirin: remain on Aspirin 81 mg one tab in the morning with breakfast and one tab in the evening with dinner for a total of 4 weeks after surgery. This medication helps prevent blood clots.

Opioid pain medication (Oxycodone, Dilaudid, Norco, Tramadol): the majority of patients are able to wean themselves from opioid pain medication within 3 to 4 weeks of surgery.

Acetaminophen/Tylenol: Tylenol should be the last pain reliever that you stop taking. It is most effective when taken on the schedule of 1000 mg every 8 hours around-the-clock.

Stool softener/Stimulant: continue with this until you have weaned yourself off of opioids or have had the return of normal bowel movements.

Meloxicam/Mobic: this is an anti-inflammatory medication and should be taken for up to 4 weeks.

Omeprazole: continue to take this as long as you are taking both Aspirin and Meloxicam.

Recovering From Total Knee Replacement

Frequently Asked Questions

Why Can't I Sleep?

We get that sleeping for several weeks or months after joint replacement will be a challenge. For most patients, time will solve the insomnia. This can be difficult to treat and only time will fully eliminate the problem. Working hard, being active during the day, and avoiding daytime naps are helpful tools to get you to sleep at bedtime. Unless you are accustomed to sleeping pills prior to your surgery, we do not recommend them as they often do not help and can cause other significant side effects. Use of opioid pain medications are also known to **negatively** impact sleep patterns. You may try antihistamine medications such as Benadryl, or supplements such as Melatonin at bedtime. 'Tylenol PM' includes the active ingredient in Benadryl and is an option as well, just be sure not to exceed 3000 mg of Acetaminophen (Tylenol) in 24 hours from all sources.

Why Does Nothing Look or Taste Good?

Loss of appetite is normal and is not cause for alarm. Many patients lose their appetite for several weeks, and sometimes up to two months. Your appetite will return to normal with time. Many find it helpful to eat several small meals or snacks rather than large meals until one's appetite returns to normal.

When Can I Drive?

Safety first! Generally speaking, it takes 3 to 4 weeks to regain full control over your right leg to operate your car safely. A good indication you are ready to drive again is when you are comfortably walking with the use of your cane or have stopped using any assistive device all together. If the joint replacement was done on the left leg, ensure that you are able to get in and out of the car safely. Most importantly please use your common sense. Consider a couple of practice drives in a low traffic area or an empty parking lot. If you do not feel that you are safe to drive a car, wait until you feel you are ready. **Do not drive if you are still taking opioid pain medications.**

Why is my knee clicking and making noise?

This occurs in most all total knee replacement patients due to the metal and plastic (polyethylene) components making contact during movement of the knee. This is not a sign of a loose knee replacement or any other significant problem.

What is the best way to manage my pain moving forward?

We would like you to wean off of opioid pain medication by 3 to 6 weeks after surgery at the very latest. You may want to use acetaminophen (Tylenol) and/or over-the-counter NSAIDs such as ibuprofen (Advil, Motrin) or naproxen (Aleve). Take as directed on the bottle. These should help with any residual pain after you are off of the opioid pain medication.

How long should I do my exercises?

Once you have reached full range of motion (0 to 120 degrees), you should continue to stretch regularly to maintain your range of motion. You should continue with daily strengthening and conditioning exercises to make you stronger and support your new knee.

Recovering From Total Knee Replacement

Frequently Asked Questions

What is the normal follow up after surgery?

You will have a telehealth or clinic visit 10-14 days after surgery with a Physician Assistant or Nurse Practitioner, a clinic visit 6-8 weeks after surgery with your surgeon, and a clinic visit around the one-year anniversary of your knee replacement

When Can I Safely Travel?

Ideally, we would like for you to stay in the area for at least 4 to 6 weeks following surgery due to the risk of a negative impact on your recovery. If you are planning on traveling within this time frame, please discuss this with your surgeon so that necessary precautions can be taken.

What About Airport Security?

Your knee replacement is made of metal and will set off metal detectors. It is most efficient to use the body scanner, but if that option is not available, tell the TSA agent you have a knee replacement to facilitate additional screening. Cards indicating you have a total joint replacement are no longer accepted by TSA. Here is a link to a video from the American Hip and Knee Surgeons with further information: **https://youtu.be/7hagY2S9l3k**.

What About Sexual Activity?

You may resume sexual activity as comfort and common sense allows. If you have specific questions, please discuss them with your physical therapist or your surgery care team.

Recovering From Total Knee Replacement

Follow-Up Appointments

Both your first and second postoperative visits are scheduled at the time you scheduled surgery. If you are not sure when, what time, or which office, please call us. We will be happy to direct you. Every postoperative course is different so please feel free to ask questions, discuss your surgery and/or recovery, or any other concerns you may have.

First Postoperative Visit: 10 – 14 Days After Surgery

Your first visit will be 10-14 days after surgery via telehealth. You will be invited to join that appointment using your computer or smartphone. The appointment will be with a Physician Assistant or Advanced Registered Nurse Practitioner who is familiar with you and your surgery. In general, the following will happen at this appointment:

- Your incision will be assessed and incision care will be reviewed.
- Medications will be reviewed and refilled if needed.
- Any additional questions you have will be answered for you.

Who needs to be seen in the office for this appointment?

- Those who do not have access to a computer or a smartphone.
- Those who have staples or sutures that will need removal.
- **You need to arrange for a ride to this appointment as you will not be ready to drive.**

Second Postoperative Visit: 6 – 8 Weeks From Surgery

Your second scheduled follow-up visit will be with your surgeon, typically 6 to 8 weeks after surgery. Most patients are able to drive themselves at this point and have stopped taking opioid pain medication. In general, the following will happen at this appointment:

- X-rays will be taken at this visit and reviewed with you.
- Your surgeon will review your mobility and return to activity.
- Discuss your concerns and make additional recommendations.
- Follow-up visits: As long as all things are going well, your next follow up will be your one-year anniversary for an x-ray check.

Recovering From Total Knee Replacement

What Is So Important About Antibiotics And Dental Work?

Bacteria that are not present anywhere else in the body are present in your mouth. When you have dental work including routine teeth cleaning, these bacteria are scattered into the bloodstream. They can collect around your knee replacement, causing it to become infected. Antibiotics kill the bacteria that cause this type of infection. It is imperative you notify your dentist that you have had joint replacement surgery.

The American Association of Orthopedic Surgeons (AAOS) believes it is worthwhile for all patients to take preventive oral antibiotics prior to dental work for one year after surgery (lifelong if you are at higher risk for infections). These underlying conditions may include, but are not limited to, autoimmune disease, diabetes, recent or active cancer treatment, etc. We will prescribe antibiotics for you if your dentist does not.

Patients not allergic to Penicillin:	Patients allergic to Penicillin:
Amoxicillin Take 2 grams orally, 1 hour prior to dental procedure to include routine dental cleaning.	Clindamycin Take 600mg orally, 1 hour prior to the dental procedure to include routine dental cleaning.

After one year, your dentist is ultimately responsible for making the decision for or against taking antibiotics based on his/her knowledge of the dental work to be done. If you have any questions regarding antibiotics and dental work, have your dentist contact your orthopedic surgeon.

Ongoing Recovery & Care For Your Total Knee Replacement

Protecting Your New Knee

Your new knee is the result of many years of research. However, like any device, its life span depends on how well you care for it. You should exercise proper care of your new knee the rest of your life.

Making It Last

Let's compare the surgical-grade plastic bearing surface of your knee replacement to car tires. A race car driver requires 4 or 5 sets of tires in a 200-mile race, while tires for the average driver can go 30,000 miles. You are the one that will determine how quickly you will burn through your tires.

Sports And Other Activities

Remember, your new joint is designed for the activities of daily living and low- to medium-impact sports, not high-impact sports. Once your surgeon approves you to participate in more activity, walking, hiking, swimming, cycling, and tennis are recommended. Aggressive sports, such as running or jumping off high platforms (i.e. cross-fit), may impair or compromise the function and long-term success of your joint and should be avoided.

Patient Education

The Knee Joint And Osteoarthritis

The knee is a complex hinge joint (Fig. 37) in which the end of the femur (thigh bone) and the top of the tibia (shin bone) are covered with articular cartilage. Ligaments connect bones to other bones and are found inside and outside the knee joint and provide stability as the knee moves. Tendons connect muscles to bones and provide power for these motions.

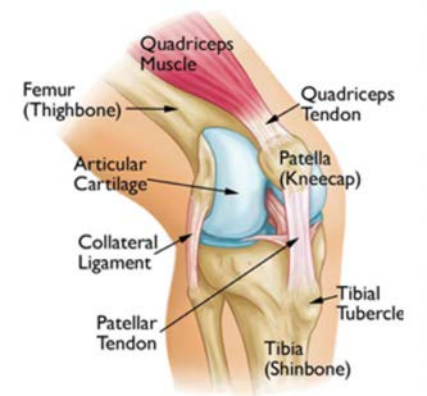


Figure 37

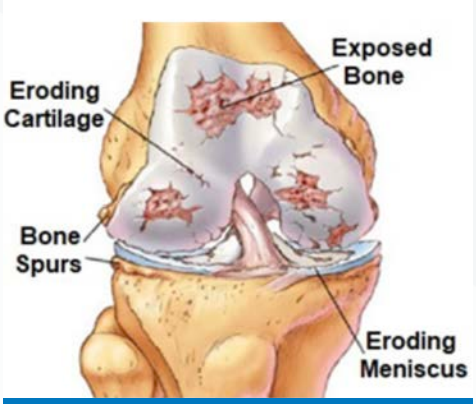


Figure 38

Osteoarthritis (OA) is the wearing away or loss of the cartilage layer, just like the tread on a car tire wears away. A knee joint can do the same and become "bone-on-bone". These rough surfaces cause friction, resulting in swelling, pain, loss of motion and function. Osteoarthritis is the most common, but other less common causes of arthritis do exist (rheumatoid arthritis, post-traumatic arthritis, avascular necrosis). Regardless of the type of arthritis, they all lead to loss of articular cartilage and pain (Fig. 38).

Treatment Options

Conservative treatment options can help patients with early arthritis maintain their quality of life and minimize pain. These include the use of anti-inflammatories (i.e. Ibuprofen, Aleve, Advil, Motrin, etc.), Tylenol, activity modification, injections into the knee joint (cortisone, viscosupplementation, platelet rich plasma), and physical therapy.

Once conservative measures are no longer effective, knee replacement surgery can be considered. A total knee replacement is where the diseased cartilage on the end of the femur (thigh) bone and the top of the tibia (shin) bone are removed and the joint is replaced with metal and plastic (Figs 39 & 40). Many of the ligaments and tendons of the knee joint are preserved and are crucial to the knee replacement functioning properly.

Patient Education

Total Knee Replacement: The Basics

Your recovery from total knee replacement will continue for more than one year, but a large proportion of your recovery happens in the first 3 months. Most people who have total knee replacement surgery experience a dramatic reduction of knee pain and a significant improvement in quality of life. The components are artificial and can wear out with time and use. Excessive activity or body weight may speed up this normal wear process and may cause the knee replacement to become painful. Therefore, most surgeons advise against high-impact activities such as running or jumping, for the rest of your life after surgery. Realistic activities following total knee replacement include unlimited walking, swimming, golf, tennis, hiking, biking, and other low- to medium-impact sports.

As with all major surgeries, there are risks. Your surgical team will do everything in their power to decrease these risks and get you the best possible outcome. Sometimes surgery is postponed while known risk factors are addressed before surgery. Body weight must be under control as measured by body mass index (BMI). Diabetes must be well-controlled as measured by HbA1c. If you use tobacco or nicotine products, you will need to quit before surgery. All these measures are performed to decrease your risks and improve your outcome.

Figure 39

Total knee replacement implants with ingrowth surfaces.

Figure 40

Mobile bearing and fixed bearing total knee replacement components.

Patient Education

Total Knee Replacement: The Surgery

Your surgeon and team reviewed your X-rays (Fig. 41) prior to surgery and a plan was developed. You are carefully positioned on the operating table lying on your back. After the anesthesiologist has administered your anesthetic, surgery begins with a time out where everyone pauses and confirms the patient, procedure, correct leg and confirms antibiotics and other preop medicines have been given. A yellow iodine-based adhesive drape is placed on the skin, and a straight incision is made over the front of your knee (Fig. 42). The length varies depending on your height and weight. Your kneecap is slid to the side exposing the knee (Fig. 43). There are several options for guiding the surgeon regarding the bone cuts on the end of your femur (thigh bone) and top of your tibia (shin bone), these include: traditional instruments, patient specific cutting guides, computer assisted guidance and use of robotics (Fig. 44, 45, 46). There is no "best way" of performing a knee replacement. After collectively performing over 15,000 TKAs we use the option that works best for you. The procedure is a combination of bone cuts and soft tissue releases that create a well-balanced knee that allows you to return to activity without pain. We routinely resurface your kneecap, which means you will have your own bone but with a new plastic bearing surface attached to it. Typically, the surgery takes 60-90 minutes to perform. Your skin will be closed one of two ways: buried sutures with waterproof mesh and skin glue, or stainless-steel skin staples. The thickness and integrity of your skin and subcutaneous tissue determines which method is used. A silver-impregnated waterproof large band-aid will be placed over the incision. After the dressings are on your knee, you will be transported to the recovery area. If you plan to use a postoperative ice machine, the knee sleeve will be placed over your dressing.

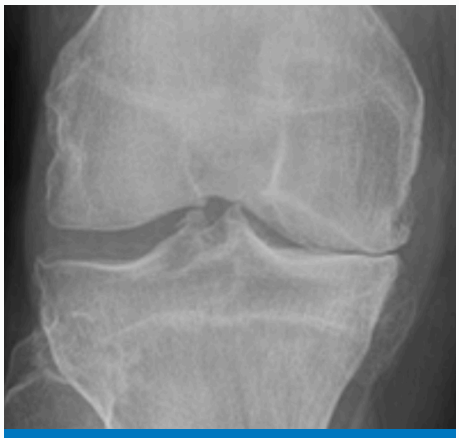


Figure 41

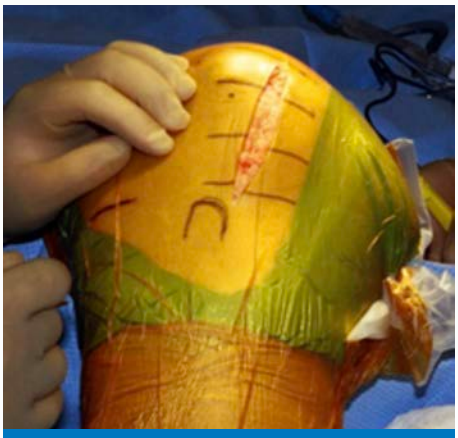


Figure 42

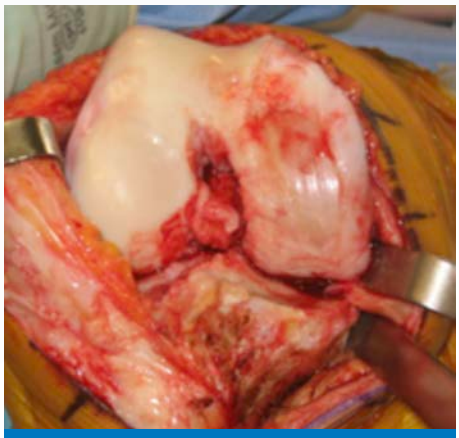


Figure 43

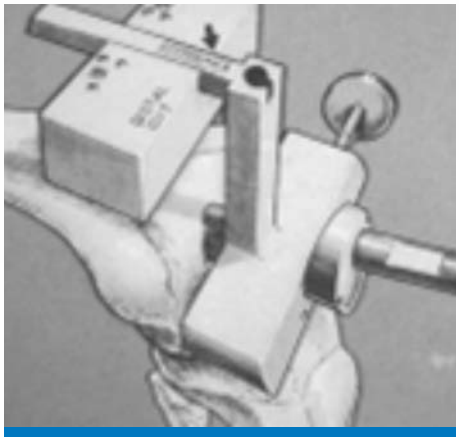


Figure 44

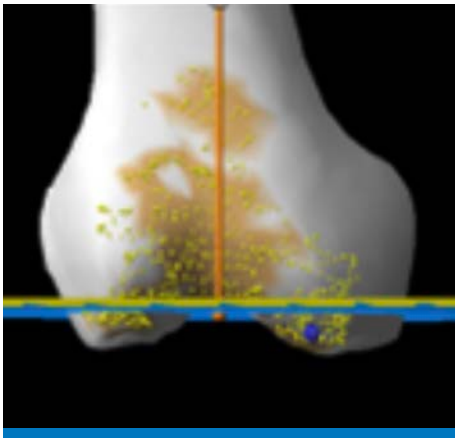


Figure 45

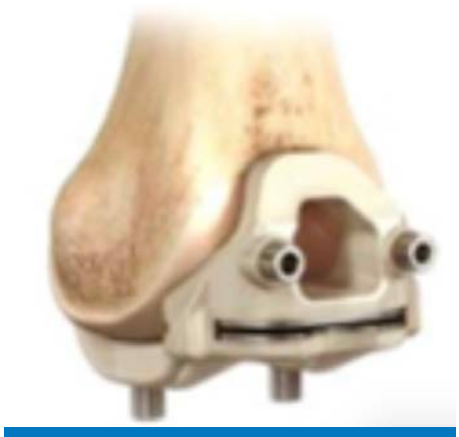


Figure 46

Appendix

Incision Instructions

Dermabond™ Prineo™ Skin Closure System (DBP)

Your incision was closed with a water-tight, sterile, and strong wound closure system called **DERMABOND™ PRINEO™ (DBP).** There are multiple layers of dissolvable sutures under the top layer of your skin. There are no sutures or staples to be removed, however, the mesh will eventually fall off or be removed. See instructions and answers to common questions about this wound closure system below.

Instructions:

1. **Five days after surgery, you should remove ONLY the top bandage that is silver with clear edges (Mepilex)** as seen in Figure 47 on the next page. You will see a mesh-like material covering your incision underneath. This is the DBP. It is normal to appear wrinkly, to have some dried blood spots on the mesh, and purple pen marks (Fig. 48 wrinkly DBP). **The DBP is to be left in place for up to 3 weeks.**
2. **The corners may peel up.** Trim the peeled up edge(s) with clean scissors (Fig. 49 trimming DBP).
3. **You may shower with the DBP.** Do not scrub it or submerge it in water. Pat dry with a clean towel.
4. **After 3 weeks, if the DBP is still in place, please remove it.** Apply a generous amount of any type of petroleum product such as Vaseline. Then wait 3 to 5 minutes. Then, start by peeling up the top edge of the mesh, and gently pull in a downward fashion and in-line with the incision. The mesh should come off easily. If it is difficult, apply more petroleum product or allow more time for it to soak into the mesh (Fig. 4, 5, 6, and 7 taking the mesh off). Forcibly removing the mesh may cause damage to your skin. Once removed, you may continue to shower.
5. **Refrain from soaking in a hot tub, swimming, or applying any lotions, creams, or ointments on the incision for a minimum 4 weeks from surgery.**

Frequently Asked Questions

There is blood on the DERMABOND™ PRINEO™, is that normal?

Yes, the incision does bleed a little while it is being closed during surgery. We do not anticipate a large volume of blood draining or pooling under the DBP. If this occurs, please call the clinic and ask for our Orthopedic Care Coordinator, ARNP at 425-656-5060.

Why can't I just remove the dressing after surgery?

The DBP is a part of your wound closure system and is a substitute for staples. It helps the skin heal and helps prevent infection. It should remain on your incision for two to three weeks.

How do I remove the mesh after three weeks?

See #4 above and see Fig. 50, 51, 52, and 53.

Appendix

Incision Instructions

Figure 47
Removing Mepilex on day 5

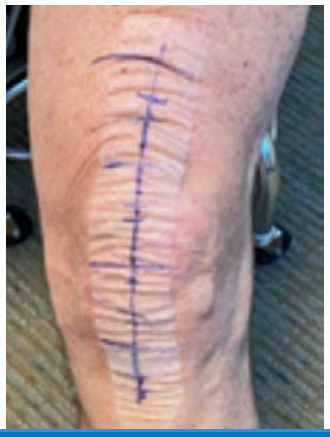


Figure 48
Dermabond Prineo - leave in place for up to 3 weeks

Figure 49
Trimming DBP

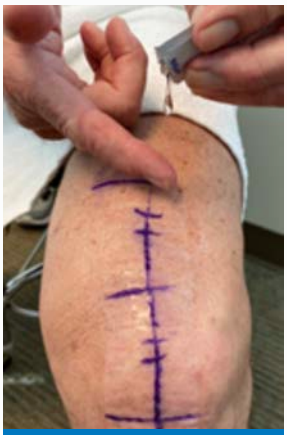


Figure 50
Vaseline (3 weeks after surgery)

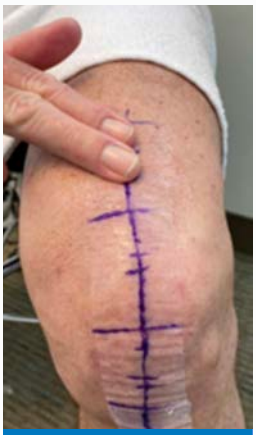


Figure 51
Applying Vaseline

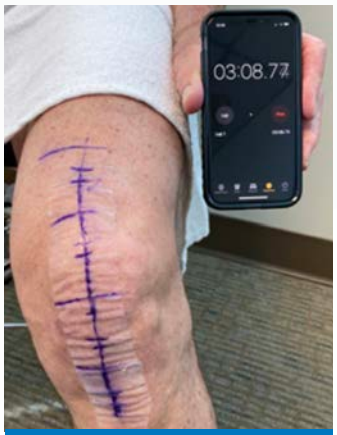


Figure 52
Wait 3-5 minutes

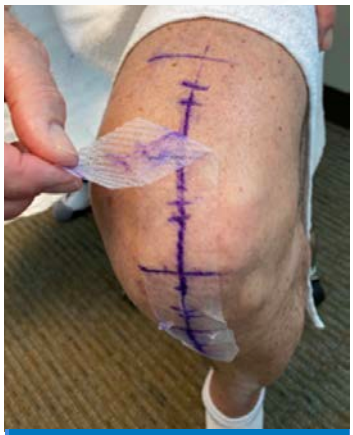


Figure 53
Removing DBP

ICE & COMPRESSION MACHINE

Optimize Your Recovery & Minimize Pain and Swelling

- Reduced pain
- Faster return to activities and work
- Less physical therapy required during recovery
- Improved sleep
- Reduced swelling
- Decreased use of opioid pain medication post-op

We carry **two options**, both designed for use on the Shoulder, Knee and Hip

Cold Therapy & Compression

Polar Care Wave by Breg: $250

Varied Levels of Cold and Compression settings.

10 seconds to reach maximum compression and 10 seconds to release compression.

Cold Therapy

Iceman Clear 3 by DonJoy: $145

Easy-to-use! Just plug it in to start!

Semi-closed loop circulation system which maintains consistent and accurate temperature.

Ice and Compression machines are cash pay and not covered by insurance.

Proliance Surgery Center at Valley

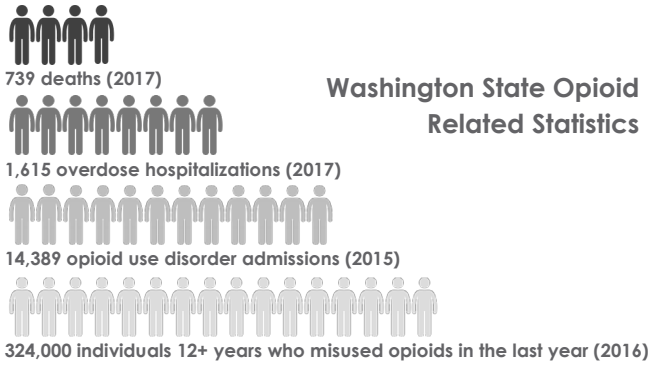
Renton | Covington | Maple Valley | Auburn | Tukwila

Prescription Opioids for Surgical Pain

October 2019 | DOH Pub 631-079

2018 Opioid Prescribing Requirements

Between the years 1999 to 2016, over 200,000 people in the United States died from a prescription opioid related overdose (CDC, 2017). A Washington State law passed in 2017 requiring opioid prescribing rules be written in response to the statewide opioid crisis.



Washington State Opioid Related Statistics

Opioid medications can be addictive and anyone is at risk for developing an opioid use disorder. Keep yourself and others safe by limiting usage, disposing of all unused medications, and knowing how to recognize the signs of opioid use disorder.

What do you need to know as a patient

Prior to prescribing opioids, your health care provider may:

- Ask you to complete a risk assessment.
- Ask more questions for your patient record.
- Check the Prescription Monitoring Program to identify other medications or drugs of concern.

Individual health care providers, practices, systems, pharmacies, and insurance companies may have more strict policies regarding opioids.

Ask your health care provider questions about alternative treatment options for pain.

Know your prescription, always follow Instructions, and never take more than Prescribed.

You can refuse an opioid medication at any time. Your provider must honor this request unless you revoke it.

Common types of opioids are oxycodone, hydrocodone, codeine, tramadol, fentanyl, morphine, and methadone. Opioid medications may be prescribed by health care providers to treat moderate to severe pain, but can have side effects and serious health risks, such as tolerance, physical dependence, opioid use disorder, and overdose.

It is important to follow medication instructions when taking opioids and always be honest with your health care provider regarding other medications you may be taking. You should avoid consuming alcohol or operating heavy machinery when taking opioid medications.

Be informed. Be aware. Never share.

What are the risks?

- Opioid use disorder
- Physical dependence
- Falls and accidents
- Increased sensitivity to pain
- Overdose

Risks may be greater with:

- Pregnancy
- History of substance use
- Over the age of 65
- Mental health conditions
- Combining with other medications (example: sleep or anxiety)

Possible side effects

- Nausea, vomiting, and dry mouth
- Constipation
- Sleepiness and dizziness
- Confusion
- Withdrawal

Proper disposal

You are not required to use all of your opioid medication. To find your nearest take-back location for proper disposal of unused medications, please visit:

- med-project.org
- doh.wa.gov/safemedreturn

Safe storage

- Never share or sell your prescription opioids
- Keep opioid medications locked or in a safe location
- Keep out of reach of children and out of sight from others
- Leave in the original bottle with the label attached

Naloxone

Naloxone is a prescription medicine that briefly helps a person wake up and start breathing again after an opioid overdose. Your healthcare provider may choose to give you a prescription for this drug. For more information see stopoverdose.org

Proliance®

BONE & JOINT URGENT CARE

Thank you for choosing Proliance Orthopedic Associates as your care team, we are pleased to partner with you throughout your orthopedic surgery experience. Our care team also includes providers at our very own **Proliance Bone and Joint Urgent Care,** available for any post-operative care needs such as medication management, wound care including dressing changes, cast and splint care, x-rays, and more.

Proliance Bone and Joint Urgent Care proudly offers these benefits to our patients:

- Open seven days a week with extended hours
- Walk-in or scheduled appointments available
- A shorter and more cost-effective visit than the ER
- Billed as a routine office visit
- Direct access to orthopedic specialists

Proliance
Surgery Center at Valley

SPECIALIZING IN WHAT MOVES YOU

425.979.BONE (2663)

150 Andover Park W
Tukwila, Washington 98188

WALK-IN OR SCHEDULE AN APPOINTMENT

Tuesday - Friday: 12pm - 7pm
Saturday - Monday: 10am - 7pm

Type of Injury/Condition	Bone & Joint Urgent Care	POA Office Visit	ER
Acute/Sudden Back Pain	X	X	
Acute Sports Injuries	X	X	
Concussion Management	X	X	
Chronic/Reoccurring/Long-term Bone, Joint, or Muscle Injury		X	
Cold, Flu, Respiratory or Stomach Issues			X
Superficial/Small Lacerations	X		X
Deep Lacerations - Cuts and Bleeding			X
Fractures and Dislocations	X	X	
Hip Dislocations			X
Knee and Hip Injuries	X	X	
Motor Vehicle Accident with Strain or Sprain of Muscles, Joints, or Bones	X	X	
Post-Operative Care - Surgical site evaluation, dressing change, cast/splint care, x-ray, and more.	X	X	
Shoulder Dislocations	X	X	
Shoulder, Elbow, Hand Injuries	X	X	
Simple Fracture of the Hand/Foot with Bone Visible	X	X	
Sports Physicals	X	X	
Sprains and Strains	X	X	
Visible Fractures of Any Bone (Except Hand/Foot)			X

Notes