



Total Knee Replacement Manual and Therapy/Rehab Protocol



Dr. Edward Kelly, MD, MBA

Burnsville:

1000 W 140th St Suite 201, Burnsville, MN 55337

Ph: 952.808.3000

Fax: 952.456.7804

Edina:

4010 W 65th St, Edina, MN 55435

Ph: 952.456.7000

Fax: 952.456.7804



You have made the decision to have a total knee replacement to decrease your pain, regain function, and increase your quality of life. This type of surgery is a big decision and this manual is intended to help you prepare for your surgery and guide you through the rehabilitation process.

Getting Ready for Surgery – Check List

Get a Pre-operative Physical Exam

Before surgery, a preoperative physical is necessary. This is typically done by your primary care physician and will need to be completed within 30 days of surgery. Bring an up-to-date list of the current medications and supplements you are taking including the doses of each to your physical.

Make a Post-operative Appointment

10-14 days after surgery, you will have a post-operative appointment with Lindsey Anderson, PA-C, Dr. Kelly's physician assistant. This appointment is typically made at the time you schedule surgery, but if it is not, please call to schedule this appointment prior to surgery. At this appointment, your dressings will be changed and x-rays will be taken of your knee.

Make Physical Therapy Appointments

You will need physical therapy after surgery and these appointments can be made prior to your surgery. Your first therapy appointment should be made for the week after surgery. The first couple weeks following surgery you should see the therapist 2-3 times a week. Therapy can be done through Twin Cities Orthopedics or another therapist of your choice. Physical therapy scheduling:

Burnsville: 952-808-3052

Edina: 952-456-7000

Attend Joint Replacement Class

Fairview Ridges Hospital offers a preoperative joint replacement education class. This class gives you tips to prepare for surgery as well as goes through what to expect while you are at the hospital and after surgery. If you will be having a family member or friend help you after surgery we encourage you to invite them to the class as well. These classes are a general overview of joint replacements with patients of many different surgeons attending so the information you receive at the class may be different from what Dr. Kelly has told you. The information you received from Dr. Kelly should always take priority. If you have any questions about conflicting information, please contact the office. Please visit the following website for more information about class times and locations:

<https://www.fairview.org/ServiceLines/OrthopedicsandSportsMedicine/OrthopedicMedSurgery/jointreplacement/Jointreplacementclasses/index.htm>



Gait Aides

After surgery you will likely use a walker, crutches, and/or a cane for an average of 2-4 weeks. These can be acquired in our Physical Therapy department. If you need instruction on the use of these one of our Physical Therapists will be happy to help.

Stationary bike

If you have or can borrow a stationary bike, it is the very best exercise you can do for your knee after surgery. Put the bike in a spot that will be easy for you to access.

Absence from Work

The time frame for returning to work after a total knee replacement varies depending on you and your job. Patients who have a desk job are able to return to work on the average within 2-4 weeks. If you have a more physically demanding job it may be 10-12 weeks before you are back at work. If you need paperwork filled out for your employer, please bring this to the office prior to your surgery and avoid bringing any paperwork to the hospital. You can also mail or fax (952-456-7804) paperwork to the office to the attention of Kaici.

Getting your house ready for your return after surgery

There are a few things you can do before surgery to make your transition home after surgery easier. This includes moving items that you regularly use to a place that is easy to access, having a phone that is nearby, removing any tripping hazards (throw rugs, etc), and preparing meals for after surgery. Many patients find it most comfortable to sleep in a recliner chair and if you don't own one, you may consider borrowing one before surgery. Another helpful tip is to tie a belt or rope around the inside of your car door or other doors of your home to save you from reaching away from body and pulling to close them.

Medications to have at Home

There are a few medications you might want to have available at home to use after surgery if needed. These include:

- **Aspirin 325mg:** This will be necessary to take after surgery to help prevent blood clots. If you do not get it prior to surgery, you will be given a prescription at the hospital when you are discharged. You will take one of these daily for a total of 30 days after surgery.
- **Stool softener** (senokot, Colace, Dulcolax): You may have constipation after surgery due to being sedentary and taking a narcotic pain medication. A stool softener can help with this as can eating a fiber-rich diet (wheat bran, fresh fruits and veggies, oats). Other things that can help include drinking plenty of water and getting up to walk around frequently.
- **Extra-Strength Tylenol 500mg** – this is a great adjunct to the pain medication you will be taking, as long as it does not contain acetaminophen. We recommend avoiding ibuprofen or Aleve until you are done taking the aspirin.



Get an Antibacterial Soap

Developing an infection after surgery is a serious risk and there are many measures that Dr. Kelly, Lindsey, and the hospital staff take in the operating room to prevent it. One simple thing that you, the patient, can do to prevent infection is use an antibacterial soap called Hibiclens. This can be purchased at any pharmacy or you can go to Ridges Hospital after your surgery is scheduled for a free bottle. You should shower with this antibacterial soap the day before and even the morning of surgery.

Plan to have help at home after Surgery

Most patients are able to go directly home from the hospital 2-3 days after surgery and do not need to stay at a transitional care unit (TCU) after total knee replacement. However, some patients, especially those who live alone and have no one who can stay with them for a few days, those who have significant physical disabilities prior to surgery (i.e. wheelchair or walker dependant), or those who experience post-operative complications, may require a short stay at a transitional care facility after surgery. If you anticipate needing this after your surgery, please let us know prior to surgery so we can get a social worker at the hospital involved with your care early on.

Dental Appointment

Dr. Kelly recommends waiting 3 months after surgery to have any routine dental work done. Please plan ahead and have your dental work up-to-date prior to surgery.

One Week before Surgery

- Stop taking any vitamin supplements, herbal medications, over-the-counter medications, aspirin, or any anti-inflammatory medications (i.e., ibuprofen, Motrin, Advil, naproxen sodium, naproxyn, or Aleve).
- If you take a blood thinning medication such as Coumadin, your primary care physician will direct you when to stop taking this prior to surgery (usually 5-7 days).

Night before Surgery

- Take a shower with the Hibiclens antibacterial soap described above.
- Do not eat or drink anything after midnight the night before your surgery. You can take any necessary prescribed medications with a sip of water the morning of surgery.
- You might find it nice to put freshly laundered sheets on your bed for you to come home to after your hospital stay.



Day of Surgery

Before Surgery

Take another shower with the Hibiclens soap before you head to the hospital. Please arrive at the hospital 2 hours prior to your surgery. Dr. Kelly will see you in the preoperative area before your surgery to answer any last minute questions or concerns you may have. You will also meet with one of the board certified anesthesiologists prior to surgery. He or she will discuss different types of anesthesia, risks, and possible complications of the anesthesia. You will have a general anesthetic and usually a local nerve block, depending on your discussion with the anesthesiologist.

During Surgery

- **Surgery Time** – The surgery will take about 1.5-2 hours. This time includes getting you positioned, the operation itself, and waking you up from the anesthetic after the surgery.
- **Catheter** - Once you have been put to sleep, the operating room nurse will place a catheter in your bladder to aid urination during surgery and immediately post operatively. This will be removed the morning after surgery, once you are able to get up out of bed to use the bathroom. Please let us know ahead of time if you have any bladder or prostate concerns.
- **Drain** - You will have a tube (drain) placed in the knee during surgery that will allow excess fluid to drain from the knee and help keep swelling down. This will also be removed the day after surgery.

After Surgery

Recovery Room - After surgery you will spend about 1 hour in the recovery room and then you will be moved up to your room on the surgery and orthopedic floor. Your leg will be placed in a continuous passive machine (CPM) the day of surgery. This machine helps move your knee and keeps stiffness to a minimum.

In the Hospital

Pain after surgery

We work closely with the hospital staff to control your pain post-operatively. Even with pain medications, you can expect to feel some pain. Please note that the first night you will likely have less pain because the nerve block that was placed by the anesthesiologist prior to surgery will usually still be in place. The day after surgery you will be transitioned to oral pain medications. This usually consists of a narcotic pain medicine such as oxycodone, Percocet, or Dilaudid, and an antihistamine medication called Vistaril, which often relaxes the muscles and is a good adjunct to your narcotic pain medications. Pain medications are opioid derivative medications that can make you sleepy, dizzy, and constipated and doses are closely regulated by your nurse for your safety.



The Incision

Your wound will be closed with sutures under the skin that will dissolve on their own, typically after 6-8 weeks. Staples will also be placed over the incision to reinforce the closure when you bend the knee. These will be removed at your first post-op appointment. A bandage called an Aquacel dressing is placed in the operating room with the intention that it will stay on until your first post-operative visit 1-2 weeks after surgery to limit the exposure of bacteria to your incision. Finally, a soft, bulky dressing will wrap your leg from heel to thigh and this can be removed the second day after surgery. There may be some early drainage on the bandage which your nurse can mark with a pen to see if it increases. Either Dr. Kelly or his PA Lindsey will see you in the hospital before you go home and decide if the dressing needs to be changed or not. With this dressing, you may shower over it but do not soak or scrub. The Aquacel will be removed at your first post-op visit in the clinic and clean steri-strip bandages will be applied.

Blood Clots

The risk of a blood clot in the the leg (or a DVT) is one of the greatest risks that we address after surgery. To help prevent blood clots and to reduce swelling in your legs you will be given a pair of white compression socks to wear. You should wear these until your first post-operative appointment. You can remove these socks twice a day for 30 minutes and for showering. You will be prescribed 325mg of aspirin twice daily in the hospital and for 30 days after the surgery.

Leaving the Hospital

Discharge

Please plan to be in the hospital for 2-3 days. You will work with the social worker, physical therapist, and Dr. Kelly's care team to determine if you will be going home from the hospital or if a short stay at a transitional care facility is better for you.

Medications prescribed for you at the time of discharge:

1. **Aspirin 325mg** - You will take a full aspirin (325mg) twice a day for 30 days. If you were taking a baby aspirin (81mg) prior to surgery you do not have to resume this until the 30 days of the full aspirin is completed. If you would prefer to buy this over the counter, please let Lindsey know when she sees you in the hospital or your nurse.
If you were taking Coumadin prior to surgery you will resume this instead of taking the aspirin
2. **Oxycodone 5mg** - You will have a prescription for the pain medication that you were taking in the hospital, this will most likely be oxycodone. Other pain medications may include Norco, Percocet, or Dilaudid.



3. **Vistaril 25mg** – This medication is a good adjunct to the narcotic pain
4. **Senna tabs** – This is a stool softener that we recommend you take while taking narcotics, since the use of narcotics can cause constipation. If you have a different stool softener that you routinely take at home or would rather buy Senna tabs over the counter, just let your nurse know.
5. **Zofran 4mg** – This medication is to treat nausea. Some patients experience nausea after surgery from the anesthesia or the pain medicine.

Postoperative Information

Pain after surgery

You will be taking narcotic pain medication after surgery to help relieve your pain. Pain medications are opioid derivative medications that can make you sleepy, dizzy, and constipated. They are also addictive if used for long periods of time. Please take narcotic pain medications sparingly but stay ahead of your pain. As you get farther and farther from surgery you will be able to take less and less pain medication. Patients typically use pain medication the most to help them sleep at night. Everyone heals differently but most patients are on pain medication for less than 4 weeks. Make sure to take the pain medicine that your nurse will offer you the first 24 or so hours after surgery, even if your pain is low. Chances are, your anesthetic block may still be working, but when the block wears off, you want to have pain medicine on board and working to cover that.

Medication Refills

If you need a refill of your pain medication prior to your first post-operative appointment, please contact your pharmacy and they will contact us. Please allow 24 hours for refills to be processed. Any refills needed before the weekend will need to be submitted on Thursday. Also, narcotic pain medication prescriptions (Norco/Percocet/oxycodone/Dilaudid) cannot be called in to the pharmacy and a hard copy needs to be signed by Lindsey or Dr. Kelly. This is a Federal Law and there are no exceptions. You or a family member will need to allow for time to come to our office to pick this up. As your pain improves we try to help you wean off of the narcotics and transition to NSAIDs with Tylenol.

Swelling/Bruising

You can expect to have some swelling in your knee for about 6 to 12 months. It is normal for your knee to be stiff in the morning and swollen in the evening. It is very important to keep your leg elevated and iced over the course of the first month. Icing and elevation will help to decrease the stiffness and improve your knee motion. The best position to elevate your leg is to have the knee above the level of your heart and your ankle above the knee. You can place a pillow under your calf, not your knee, for comfort. Ice the knee after physical therapy and 4-5 times a day. Keep the ice on your knee for 20-30 minutes at a time.



Incision

Your dressing and staples will be removed in 10 to 14 days from the date of surgery. You should leave the dressing alone until your first post-op visit. Lindsey or Dr. Kelly will check your dressing before you leave the hospital and if it is less than or equal to 50% blood-soaked, we will leave it intact. Keep in mind that this dressing was placed in the operating room under sterile conditions and we would like to keep your incision as clean and protected as possible! Once you leave the hospital, if your dressing starts to come off or you notice a new blood or fluid collection, please call us and let us know. Once that dressing has been removed at your post-op visit, you should not put any ointments or creams on the incision. It is recommended that you refrain from submerging your knee in water (bath/pool/hot tub) until the incision is fully healed to avoid infection. This can take 3-4 weeks. However, you may let clean soapy water run over the incision while showering starting 2-3 days after surgery.

Sleep

Sleep during the first 6 weeks can be difficult due to pain. You should use ice and pain medication to get as much rest as possible. The Vistaril is good for this, because it is an anti-histamine and typically makes patients sleepy. These medications will also tend to make you sleepy throughout the day. Try to get up and move/exercise during the day and avoid “cat napping” to help you sleep at night. If you are having trouble sleeping at night the first thing you should try is taking your bedtime dose of pain medication with Tylenol PM. This has Benadryl in with the Tylenol and can help make you drowsy and make falling asleep easier. Take this medication as directed on the bottle. If you continue to have difficulty sleeping at night discuss this with Dr. Kelly or Lindsey. Your endurance may also be decreased after surgery. The easiest tasks will take longer and you will tend to fatigue very easily. This will get better as healing progresses and your strength returns.

Physical Therapy

You will have physical therapy 1-3 times a day while in the hospital. When you are discharged from the hospital the best exercise you can do to replace the continuous passive machine (CPM) is ride a stationary bike. This will help increase your knee flexibility as well as reduce stiffness. You will start by rocking the pedals back and forth without making a full revolution. You will be able pedal around backwards before you can go around forwards. You should also work on the therapy exercises given to you by your Physical Therapist 1-3 times a day.

Physical Therapy will last anywhere from 6 to 12 weeks depending on the individual. Rehabilitation is very individualized and is tailored to how you feel and progress during your therapy session. Your therapist will document the progress of your knee flexibility, pain control, and swelling. You should also keep track of your range of motion to follow your progression in physical therapy. It is your responsibility to do your exercises daily and make your therapy appointments. Your commitment to your exercise program is the key to a full recovery. Most appointments will be scheduled 2-3 times a week at



first. The goal is to get 0-120 degrees of motion in your knee following surgery. You will not get your motion back overnight, but it takes time, patience, and commitment to your therapy exercises. Leg and knee strengthening will begin at your first therapy appointment and continue throughout therapy.

You will be using an assistive device such as crutches or a walker to help with your weight bearing as you heal. Your therapist will help you progress your walking as you get stronger. Gradually increase how far and how long you walk. You should start with 3-4 short walks every day. After your walk, lie down, elevate and ice your knee to reduce swelling.

Driving

You will not be able to drive right after surgery. You will need to arrange for a ride home from the hospital and any appointments or errands in the first couple of weeks after surgery. You will also want to arrange for rides to your physical therapy appointments at least for the first few weeks after surgery. You can return to driving when you feel you can safely operate the vehicle and you are no longer taking narcotic pain medication during the day.

Life after Total Knee Surgery

Activity

The goal of having your knee replaced is to get you back doing all the activities that you want to do. This includes walking, golfing, tennis, gardening, and even skiing. One activity that Dr. Kelly would like you to avoid is long distance running. Since there is a plastic component to all total knee replacements, distance running increases the risk of wearing down that plastic and wearing out your knee replacement.

Kneeling

You are able to kneel on a padded surface after your total knee surgery. Try to avoid any prolonged kneeling on a hard surface such as a wood or concrete floor.

Dental Antibiotic

After total joint surgery it is best to wait 3 months before having any dental work or cleaning done. Once you do go back to the dentist after surgery you will need to take an antibiotic. You should take this prior to any dental cleaning for 2 years minimum after surgery, or in some cases, for the rest of your life. The length of time required to take antibiotics before dental procedures varies based on your overall health. The antibiotic is to prevent the bacteria from your mouth getting into your blood stream and causing an infection in your joint. You can call our office before your dental appointment and we will be happy to fill that.



Traveling

You can travel as soon as you feel comfortable after your joint replacement surgery. We typically recommend waiting one month after surgery before flying due to an increase risk of blood clots. If you are traveling within the first three months after surgery you should take one 325mg aspirin daily starting the day before you travel and continue this one day after you travel. This includes both long road trips or if you are flying. It is also recommended that you wear compression socks for both long road trips or while flying.

Please note your joint replacement will make the security alarms go off at the airport. You simply need to inform the checkpoint worker that you have a replacement and they will screen you accordingly. You should allow for extra time to get through security at the airport. TSA is not interested in a security card, however, if you would like to have a card stating you have a total joint replacement we have them available at the office.

Questions?

If you have any further questions, before or after surgery, please contact us at:
Kaici – Dr. Kelly’s care coordinator: 612-455-2023
Lindsey – Dr. Kelly’s physician assistant: lindseyanderson@tcomn.com

Also, Dr. Kelly’s website has more information on it that can help to answer any questions or concerns you may have: www.edwardkellymd.com

Below are some of the physical therapy exercises you will be doing after surgery. They will be easier to perform after surgery if you practice prior to surgery.

Stretch knee flex sit w/towel (Sitting towel Quad stretch)



- Sit.
- Bend involved knee and place foot flat as shown.
- Loop towel around ankle.
- Pull heel towards buttocks and hold.
- Relax and repeat.

Perform 1 set of 4 Repetitions, twice a day.

Use Towel.

Hold exercise for 20 Seconds.

Stretch knee flex longsit (Sitting knee bend)



- Sit.
- Bend involved knee and place foot flat as shown.
- Gently slide hips and buttocks toward ankle.
- Do not let foot move.
- Relax and repeat.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch knee ext supine (Knee extend stretch)



- Lie face up, ankle supported on towel roll.
- Relax leg and allow gravity to straighten leg.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

AROM hip flex stand bent knee (Chair march)



- Stand with hand on table or chair for support.
- Lift right leg up as high as possible, bending knee.
- Lower leg.
- Lift left leg up as high as possible, bending knee.
- Lower leg.
- Repeat.

Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM hip abd uni stand (Side leg kickout)



- Stand.
- Place weight on uninvolved leg.
- Keep knee straight, moving involved leg outward.
- Return to start position.

Special Instructions:

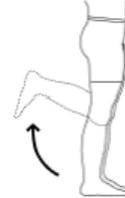
Keep trunk upright.

Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM knee flex uni standing (Standing one leg knee bend)



- Stand, bend involved leg toward hip through full range.
- Return to starting position.
- Do not bend leg at hips.

Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM ankle PF bil stand (Double heel raise)



- Stand, using chair for balance.
- Raise up on toes, through full range.
- Return to start position and repeat.

Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

Stretch knee flx sit w/towel (Sitting towel Quad stretch)



Perform 1 set of 4 Repetitions, twice a day.

Use Towel.

Hold exercise for 20 Seconds.

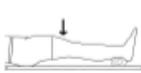
Stretch knee flx longsit (Sitting knee bend)



Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch knee ext supine (Knee extend stretch)



Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

AROM hip flx stand bent knee (Chair march)



Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM hip abd uni stand (Side leg kickout)



Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM knee flx uni standing (Standing one leg knee bend)



Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

AROM ankle PF bil stand (Double heel raise)



Perform 3 sets of 20 Repetitions, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.