

Information for Patients and Families

Total Knee Replacement



uchealth

Total knee replacement:



Total knee replacement is a surgery that replaces your knee with an artificial joint. The teams at UCHHealth provide joint replacement services of the highest quality and we want you to be an active member of your care team. This booklet will help you prepare for your surgery, know what happens during the surgery and your hospital stay, and what to expect as you recover.

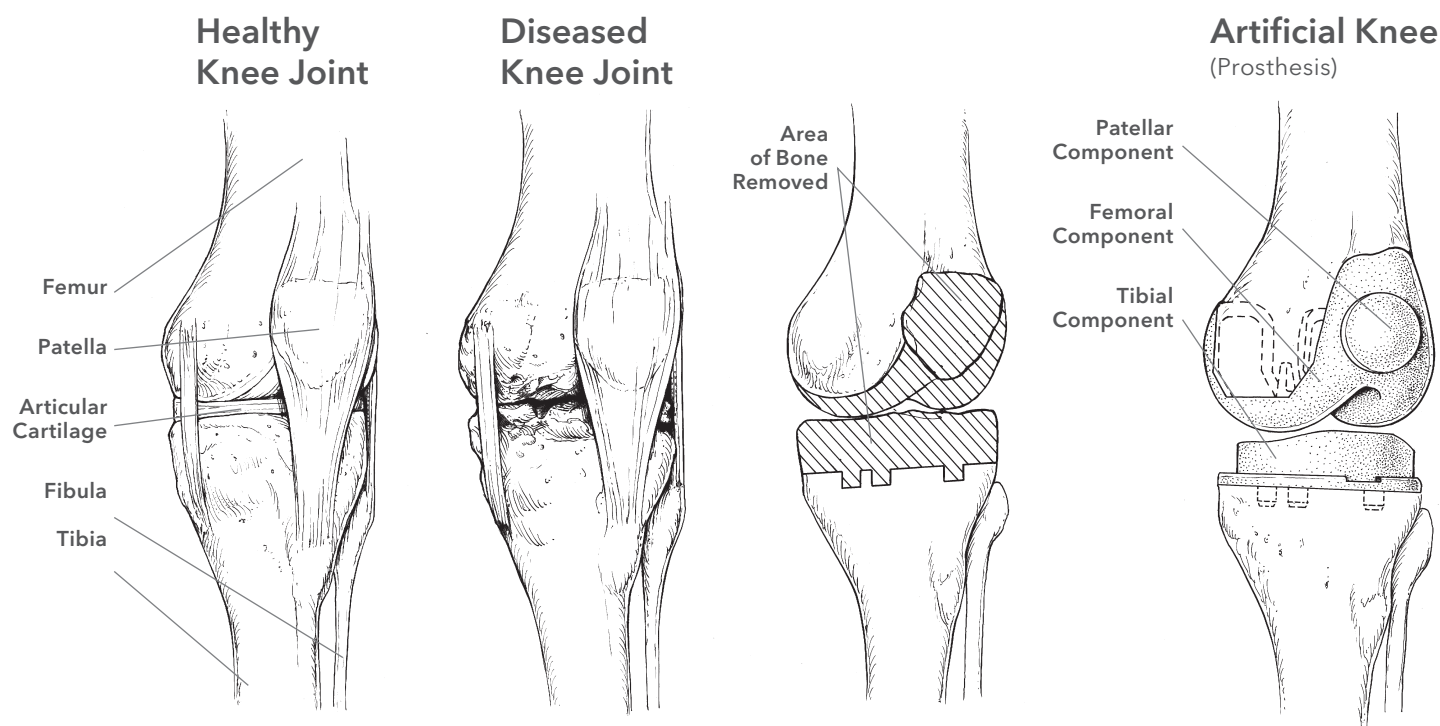
The knee is a complex joint that lets you squat, kneel, sit, bend and straighten your leg. Three bony parts make up the knee: the shinbone (tibia) below the knee, the thighbone (femur) above the knee, and the kneecap (patella). A total knee replacement replaces your knee with an artificial joint. This is called a prosthesis.

When the bones are smooth and cushioned by healthy cartilage, you can walk easily and without pain. Fluid in the joint helps lubricate the cartilage. This helps to minimize friction and allow smooth movement. Strong muscles and ligaments are also needed for joint stability.

Conditions such as arthritis, old fractures, abnormal stress and aging may damage the joint and cause rough areas to develop. This creates pain and stiffness when moving the knee. This could even result in the knee “giving out” during normal activities.

A total knee replacement is an effective way to relieve pain and restore movement in damaged knees. The replacement involves resurfacing the bones of the knee joint. There are 3 bony surfaces that can become rough and painful. These are the femur, tibia and patella (kneecap). Based on your condition, 1, 2 or all 3 of these surfaces may be replaced.

This surgery improves movement and function, but does not guarantee a normal, healthy knee.



Getting ready for surgery:

There are several things you can do to prepare for your surgery. You must attend a presurgical joint replacement class before your surgery. The class will help you prepare for the surgery and your recovery. You can schedule your class on the UCHealth Highlands Ranch Hospital website or call the Highlands Ranch orthopedic nurse navigator at 720.516.2058. Your orthopedic nurse navigator can answer any questions and is there to help you, from the presurgical process through going home after surgery.

Getting ready for surgery, a 3-part process:

- **Preadmission/preregistration**—Before your preoperative testing appointment, a patient service representative from hospital admissions will ask you for basic information. This includes your address, telephone number, emergency contact information, insurance, etc.
- **Preoperative testing**—The surgery scheduler at your surgeon's office will schedule your preoperative testing at Highlands Ranch Hospital with the preprocedure services (PPS) department. At this visit, lab work (blood and urine), an EKG, and a chest X-ray (if ordered by your surgeon) will be done. After your visit with the PPS nurse, you will meet with one of our doctors to complete your surgical history and physical exam (H&P).
- **Preoperative surgeon/PA visit**—This visit will be done in the surgeon's office before your surgery date.

Medications:

Make a list of all medicines you are taking (include prescription, over-the-counter, herbal or natural products, vitamins, and drugs you take as needed, such as Tylenol). Include the name, how much you take (dosage) and when you take each medicine. Cross off any medicines your doctor told you to stop taking. It is best to leave your medicines at home. If you do bring them, we have a safe where we can store them until discharge.

Preoperative bathing:

- Please shower both the night before and the morning of your surgery. Use a new, unscented bar of soap, or the soap you were given by the PPS nurse.
- Wash your hair first with your normal shampoo and conditioner. Rinse well.
- Use 2 clean washcloths and a clean towel each time you shower:
 - 1 washcloth for face (first), then for your private and groin areas.
 - 1 washcloth for the rest of your body.
- Dress in clean clothes. Use clean sheets the night before your surgery. Use clean towels and washcloths for showering the night before and day of surgery.
- Please **do not** shave for 3 days before your surgery.

Controlling risk factors:

- Do not smoke, vape or use tobacco products. These products delay the healing process and decrease the chance of controlling your pain.
- If you are diabetic, control your blood sugar. Sugar delays the healing process and increases your risk for infection.
- Maintain a healthy weight. Being overweight causes excess strain on the joints and the heart.
- Before surgery, limit alcohol to less than 2 glasses a day. Alcohol delays healing and the effects of alcohol can enhance the side effects of anesthesia and pain medicines.
- Avoid taking opioid medicine before surgery. Opioids taken before surgery will decrease the chance of controlling pain after surgery and can increase your risk for opioid-induced side effects.

	Medication:	Dose:	Directions (when and how often you take it):	Doctor name:	Reason for taking:
Correct	Benacar Hct	20/12.5	By mouth daily		
Incorrect	<i>Benacar Hct</i>	<i>20</i>	<i>By mouth daily</i>		
Correct	Albuterol 0.083%	2 puffs	Every 4 to 6 hours as needed		
Incorrect	<i>Albuterol</i>	<i>2 puffs</i>	<i>By mouth daily</i>		

Who provides your care?



The orthopedic team works together to help you during your hospital stay. We will work to make sure you know what to expect as you recover. It is a team effort and your care and maximum recovery is our priority.

Patient and joint coach:

You, your spouse or significant other, and your family are the most essential members on the team. As you start your surgical journey, it is important to have a joint coach. This is someone who can attend preoperative visits with you, help you during your recovery period, give you encouragement, be your advocate, and help listen for important information. The joint coach can be a family member, friend, significant other, or anyone who can be a support to you.

Orthopedic surgeon:

On top of planning and doing your surgery, your surgeon will work with the other team members to assure your complete and rapid recovery. Feel free to discuss any aspect of your care with your surgeon.

Physician assistant/nurse practitioner:

Your PA/NP will help your surgeon in the operating room and will work with you after surgery to track your progress, order and read tests, and help coordinate your discharge.

Nurses:

Your nurse will monitor your condition throughout your stay in the hospital. Your nurse can:

- Provide information and treatments needed for your recovery.
- Organize and coordinate your care.
- Work with you to manage your pain.
- Answer any questions or concerns.
- Help with your discharge.

Care management:

A member of your care management team will help you plan for your discharge from the hospital. They can help you and answer questions about:

- Insurance coverage.
- Who can help you when you go home from the hospital.
- Discharge options, including home with family help, outpatient rehabilitation, and home health care.
- Equipment needs.
- Referrals to other community resources.

Physical therapists (PT):

Your physical therapist focuses on how well you get around and on helping you recover function in your new joint. Your physical therapist will:

- Check your movement and strength.
- Teach you how to get out of bed, climb stairs and get in and out of the car.
- Teach you how to walk with a walker or other devices.
- Give you exercises to increase your knee strength.
- Teach you how to move while keeping your knee safe.

Occupational therapists (OT):

Your occupational therapist focuses on how well you can do functional activities after surgery. An occupational therapist will:

- Provide training to increase your independence in activities of daily living.
- Check your physical abilities and limits to determine your needs for equipment.
- Teach you how to use equipment such as a raised toilet seat, tub transfer bench, a reacher and/or sock aid effectively.
- Provide guidelines for home safety.

Pharmacist:

The pharmacist will review your medicines and teach you about your new medicines, if any are prescribed.

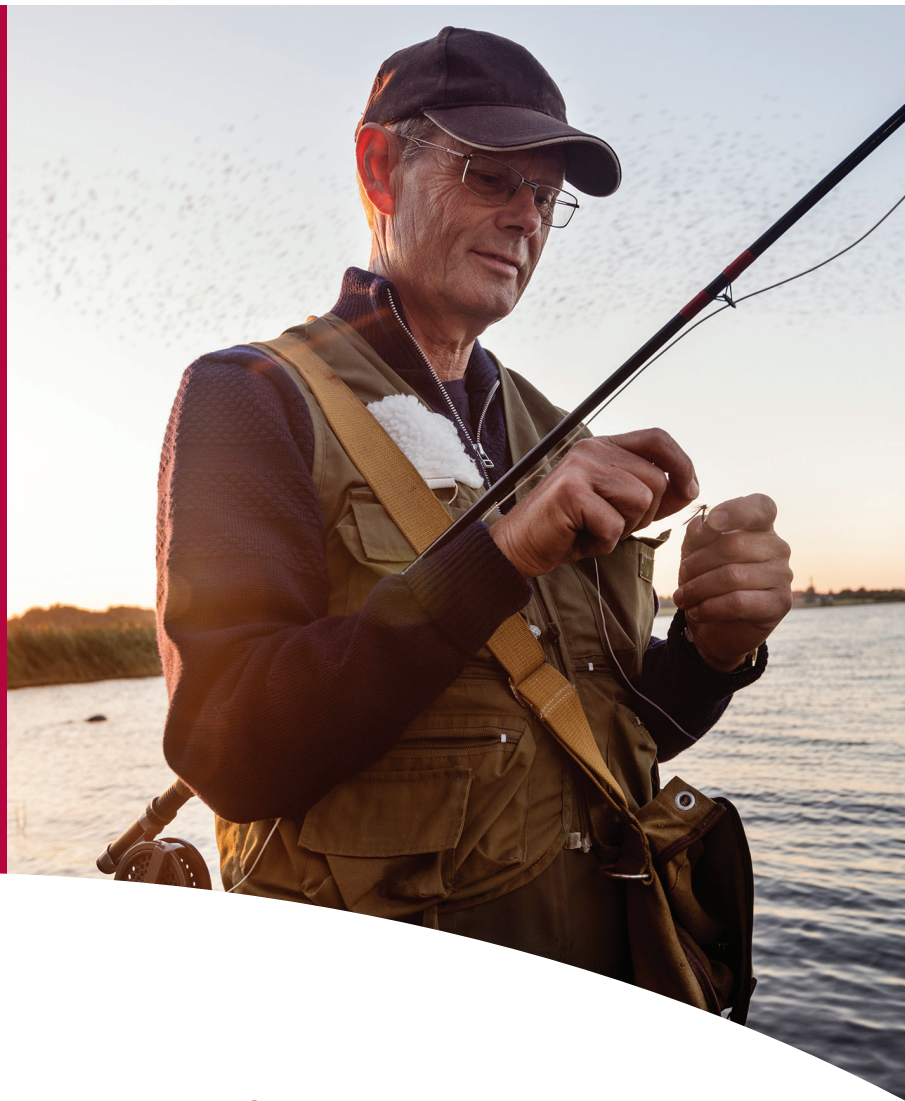
Orthopedic nurse navigator:

Your orthopedic nurse navigator can help you every step of the way of your surgical journey. They will help you understand what to expect before, during and after surgery. Your navigator will check on you daily, answer questions or concerns, and act as your liaison to coordinate care between all members of your health care team.



"It all happened so fast after we arrived. The prep, the procedure itself. We felt very well-informed. Once I was out of recovery and cleared to discharge, I was ready to go. I wanted to get home and start the healing process."

Rich Trostel, knee replacement patient



Helpful tips:

- Bring your picture ID, insurance card and prescription drug card with you to the hospital.
- If you have an advance directive, please bring a copy with you to the hospital.
- You may wear your eyeglasses (no contact lenses) on the day of surgery. Please bring a case for them. You will be asked to remove your glasses before surgery.
- Bring loose-fitting pants or shorts and walking shoes without a heel.
- You may bring personal hygiene items (hairbrush, toothbrush, toothpaste, etc.).
- If you use a CPAP or BiPAP, please bring it to the hospital with you.
- If you have crutches or a walker, please bring them so we can make sure they fit well.
- Do not bring jewelry, money or other valuables to the hospital.
- Do not wear eye makeup, lipstick, lotion, perfume or cologne the day of surgery.
- Do not bring tobacco, marijuana or CBD products.

Day of surgery– preoperative care:

Check in at the main admission desk. This is located just through the main entrance of the hospital. A patient admission representative will have you sign your admission documents. They will put an ID bracelet on your wrist that has your name, date of birth, and doctor's name on it. You will then be brought to the surgical services department. There, you will be met by your preoperative nurse and will be brought back to the preoperative area. A family member or friend may come with you and stay with you until you are taken to the surgical suite. In the preoperative area, you will have:

- Your height, weight and vital signs taken.
- An IV started in your arm. Fluid and medicines are given through the IV.
- Your surgical knee will be scrubbed with a special soap.
- Your surgeon will visit you and confirm the correct knee by marking their initials on the correct side.
- Medicine given to you to help you relax. You may feel hot, dizzy, and/or drowsy. This is normal.
- Operating rooms are cool. Heated blankets are provided for your comfort.
- Your anesthesiologist will visit you and discuss anesthesia with you. This is medicine to put you to sleep or numb you to block pain during surgery. Types of anesthesia include:
 - **General:** Uses a combination of IV drugs and medicine you breathe in. You do not feel pain because you are completely asleep. A tube is inserted down your throat to help you breathe while you are asleep.
 - **Regional/nerve blocks:** Blocks pain to a large portion of your body at the same time. Regional/nerve blocks are injected close to a group of nerves in the area that is to be numbed. Regional/nerve blocks can last 12 to 24 hours.



Day of your surgery– operating room:

- Your family will be brought to the surgical waiting area. After your surgery, your surgeon will talk to your family in the surgical waiting area and give them an update about your surgery. The surgeon can also answer any questions they may have.
- Your operating room (OR) nurse and anesthesiologist will help you into the operating room.
- You will be placed on an OR table.
- Anesthesia will be started.
- Your blood pressure, breathing and other vital signs will be closely tracked from now until you are in the recovery area.
- Surgery times vary with each person. Average procedures time are:
 - Uni-knee (partial): 1 hour
 - Total knee: 1 to 1½ hours

Day of surgery–post anesthesia care unit (PACU):

- This is the area where you wake up after surgery. You will be in the PACU for about 1 to 1½ hours and while there:
 - Your vital signs will continue to be monitored.
 - If you have any nausea, vomiting or pain, please tell your nurse.
- Your surgeon will update your family on your surgery. You may have:
 - Nasal prongs in your nose to give you oxygen.
 - A blood pressure cuff on your arm to check your blood pressure.
 - A pulse oximeter on your finger measuring your oxygen content.
 - Sequential compression device (SCD): These are inflatable sleeves that fit over your legs and massage them by inflating and deflating. This helps to prevent blood clots.
 - A bandage over your incision.
 - An ice pack over the bandage.

"There was no more pain, and I was very comfortable—I felt like Superwoman."

Maria Melendez,
knee replacement patient



Care after surgery (patient care unit):

Nurses will check on you and take your vital signs often. Your surgeon, physician assistant or nurse practitioner will visit with you to check your progress. You can also expect that:

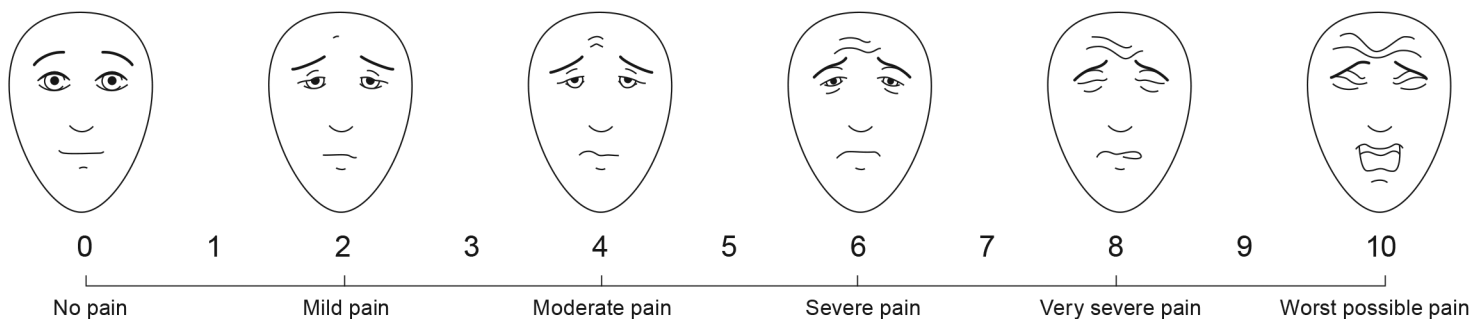
- The physical therapist will see you twice each day. The therapist will:
 - Review exercises.
 - Walk with you down the hall. This is often later on the day of your surgery.
 - Practice climbing stairs.
 - Practice getting in and out of bed.
 - Practice getting in and out of a car.
 - Help with any other barriers that you may have based on your living arrangement.
- The occupational therapist will see you daily to help you with activities of daily living. The therapist also discusses equipment to keep you safe. This may include a cane, walker or crutches.
- You will resume your normal diet the day of your surgery.
- An ice pack is placed on your bandage to relieve pain and reduce swelling and bleeding.
- You may be given oxygen until the morning after surgery. You may need it longer.
- Breathing exercises are important the first few days after surgery. You are asked to cough, breathe deeply, and do other lung exercises to prevent fluid from building in your lungs.
- Gas pain and constipation (trouble passing a bowel movement) are common after surgery. To prevent these problems, increase your physical activity, eat a high-fiber diet, and drink plenty of fluids. Your providers may order stool softeners or laxatives based on your need.
- Your blood will be drawn early in the morning for testing while you are in the hospital.
- Bed baths or showers are given based on your doctor's orders.
- Your family or staff may help with your personal hygiene needs, if desired.

Pain management:

You will have pain after surgery. The level of the pain is different for each patient. We want your pain level to be tolerable. You will set a pain goal between 0 and 10 with your nurse. Please note that a pain goal of zero (0) is not realistic or safe. Pain can be both good and bad. Pain is good when it keeps you from doing too much, too soon. Pain is bad when you cannot take part in your activities of daily living. A pain goal between 2 and 4 out of 10 is more realistic. Helping us manage your pain will ensure you are able to take part in your therapy program, as you move toward getting back to your active lifestyle.

Forms of pain management:

- **Chemical methods:**
 - Oral pain medicines (taken by mouth) are given based on your surgeon's orders.
 - Muscle relaxant medicines are given based on your surgeon's orders.
- **Physical methods:**
 - Repositioning in bed or sitting in a chair for brief periods of time.
 - Use of ice packs.
 - Working with physical therapy at each session.
- **Alternative method:**
 - Relaxation through music, guided imagery, meditation and breathing.



This Faces Pain Scale-Revised has been reproduced with permission of the International Association for the Study of Pain® (IASP).

Opioids:

Opioids, sometimes called narcotics, are medicines prescribed by doctors to treat constant or severe pain. The opioid blocks the pain message that is sent from the body, up through the spinal cord and to the brain. This results in effective pain relief. Opioids carry some risks and can become highly addictive. The risk of addiction is especially high when opioids are used to manage chronic pain over a long period of time.

Opioids can be part of an effective pain management plan, but they need to be taken exactly as prescribed by your doctor. Opioids should be used sparingly and should be discontinued as soon as possible.

Helping with blood flow (circulation):

Good circulation is important to promote healing. There are several things that are done to help prevent circulation problems in your legs, such as blood clots or swelling, which may include:

- **Blood-thinning medicine** (anticoagulants) to help prevent blood clots. Follow your surgeon's directions and be sure to take the medicine for the full period of time you are directed to take it for. Stopping this medicine early could lead to a blood clot.
- **Sequential compression device (SCD):** These are inflatable sleeves that fit over your legs and massage them by inflating and deflating. This helps to prevent blood clots.
- **Gentle exercises:** The nurse or physical therapist shows you gentle exercises to help blood flow, strengthen muscles, and improve range of motion.



Recovery and rehabilitation:



As soon as possible after your surgery, a physical therapist will start you on an exercise program. They will help you stand using a walker or other assistive device. You may feel weak or dizzy at first. This is normal. There may be some pain when first starting to move. Let your therapist know if the pain is severe. As your recovery in the hospital progresses, the physical therapist and an occupational therapist will teach you the proper way to sit, walk, bathe and dress with your new joint. They will teach you (and your family) the skills you need to continue your recovery at home.

Some tips to help with recovery:

- If you have movement precautions from your doctor, your rehabilitation team will teach you what these are and how to safely move while following these precautions.
- Your doctor decides how much weight you can put on your operative leg. This varies from “no weight” to “weight-bearing as handled.” It is important to follow these instructions for proper healing of your new joint.
- Your therapist will help you learn to use an assistive device for walking after surgery.
- You will be taught a home exercise program while you are in the hospital. To get the maximum range of motion and reduce pain and stiffness in your new knee, you need to do these exercises at home.
- Your nurse will review your discharge paperwork. This includes your new prescriptions, home medicines, discharge instructions and follow-up appointments. They will answer any questions or concerns you may have about your recovery at home.

Exercises after your surgery:

You will be given an exercise program after surgery. This includes many of your presurgery exercises. Your physical therapist will give you instructions on the exercises your surgeon wants you to do and how often you should do them.

Breathing exercises:

Breathing exercises are important in the first few days after surgery. They help prevent problems such as pneumonia. We will give you an incentive spirometer (IS) to help with breathing exercises. You should use it 10 times an hour while awake, and until you are more mobile and walking consistently.

Deep breathing:

- Breathe in through your nose as deeply as you can.
- Hold your breath for 5 to 10 seconds.
- Breathe out as if you were blowing out a candle. Notice your stomach going in. Breathe out for 10 to 20 seconds.
- Take a break and then repeat the exercise 10 times.

Coughing:

- Take a slow, deep breath. Breathe in through your nose and fill your lungs completely.
- Breathe out through your mouth and focus on your chest emptying.
- Repeat.
- Take another breath but hold your breath and then cough hard. When you cough, focus on emptying your lungs.

Planning your discharge:

Our goal is to make a safe plan for when you go home. A team member from care management, along with other members of your health care team (surgeon, hospitalist, PT, OT, nurse, etc.) will work with you to make a safe discharge plan that meets your needs. Your discharge plan is based on your doctor's recommendations, your personal needs, how well you can handle physical activity and your insurance coverage. The goal for discharge is often home or independent living.

Most patients stay just 1 night in the hospital after knee surgery. Remember, you are not sick. You had a bad joint, we replaced it and discharged you home. Your home is the best place to recover.

Physical therapy:

Physical therapy is a very important part of your recovery after knee replacement. It is required for at least 6 weeks after surgery. Your surgeon will tell you when to start your physical therapy. Your plan will likely be 2 days per week to start but may be changed by your therapist, as needed.





Home equipment:

A member of the care management team and therapists will discuss equipment needs with you and make arrangements to get any items you need. You will be given information on local equipment companies and insurance coverage for medical equipment. Many people borrow equipment from friends or family.

At home you may need the following equipment:

- Walker (most common device after surgery).
- Cane or crutch to get up and down steps.
- You may purchase a sock aid, long-handled reacher or other adaptive devices. These items can be picked up at a local drug store or ordered online.

After your discharge:

Home safety:

Before surgery, you can make your recovery safer by knowing about hazards in the home.

Home safety tips:

- Move electrical cords out of the way.
- Remove throw rugs.
- Add firm pillows to low chairs.
- Store items within easy reach. Do not stand on a stool, chair or stepladder.
- Watch for pets or objects on the floor.
- Install rails along stairs.
- To avoid hurting yourself, always think before you move.
- Arrange for snow removal. Have ice melt on hand for icy spots.
- Your doctor and physical therapist will let you know when you can drive again.
- Try to make meals ahead of time.

Follow-up doctor visits:

Your doctor will follow your progress after discharge. Most times, you will see your surgeon or PA at both 2 weeks and 6 weeks after surgery. These appointments will be made for you before your surgery by the scheduler in your surgeon's office.

When at home, be sure to remember:

- The first 2 weeks after surgery are difficult.
- The knee will feel warm to the touch all the time. Swelling and bruising is common and can occur anywhere from the thigh to the foot.
- Follow your exercise program as directed.
- Walk daily for as long as you can handle.
- Listen to your body. Rest when you are tired.
- Always use a walker or other recommended assistive device until you are told they are not needed.
- When going up stairs, step up with your non-operated leg first. When going down stairs, step with your operated leg first. Remember, "Up with the good, down with the bad."
- Stand tall and use good posture.
- Talk with your doctor about when you can safely return to driving, sports and sexual activity.
- Before having a dental procedure, talk with your surgeon.
- **Do not** rest a pillow under your knee. Practice extension, which means to keep it straight as long as possible.

After discharge, contact your doctor if you:

- Have a fever over 101 F. A low-grade fever is common the first few days after surgery and is rarely a surgical infection.
- Have signs of infection, such as drainage that soaks your whole surgical dressing. Small spots on the dressing are normal.
- Have severe pain even while taking pain medicines.
- Have burning while urinating (peeing).
- If your hand or foot becomes cold, blue in color or numb.
- Have signs of a blood clot. This includes **new** calf pain; redness, swelling or heat in your calf or groin; or new swelling in the arm or leg. Note that some swelling is normal in the legs and feet with every joint replacement so swelling alone is not a sign of blood clot.
- Your incision opens up.
- Have severe side effects, such as nausea, itching or a bad rash from the pain medicines.
- Have severe vomiting or cannot keep liquids down.
- Have trouble passing urine or have not urinated for 8 to 12 hours after getting home.
- Have trouble passing a bowel movement (constipation) lasting more than 3 days after surgery.

If you think you are having a medical emergency, call 911 right away or go to the nearest ER.

Examples of symptoms that may be an emergency include:

- Passing out.
- Chest pain.
- Shortness of breath.
- Heartbeat that does not feel normal.
- Signs of a stroke: arms or legs suddenly feel weak or numb, facial drooping, slurred speech, confusion.
- Seizure.

Wound and bandage care:

- Leave your bandage in place until your first post-op visit, 10 to 14 days after surgery.
- Do not soak your surgical site under water. No baths, hot tubs, or swimming pools for 6 weeks after surgery.
- You may shower with your dressing on. It is OK to get the dressing wet in the shower but do not soak the dressing under water. Let the dressing air-dry after showering.
- Do not lift the dressing up to look at the incision. Doing this will ruin the water-resistant quality of the dressing.
- If the edges of the dressing lift up, you may tape them back down with medical tape.
- You do not have stitches or staples to remove—they dissolve on their own.



Putting weight on your knee (weight-bearing):

You should bear weight as you are able. Use a walker, cane or crutches for balance as shown by physical therapy. The purpose of these devices is to help with balance and protect against falls.

Ice and elevation:

Both are important for pain control and swelling:

- Remember that swelling and bruising anywhere from the thigh to the foot is normal. Bruising resolves with time, and swelling resolves with time and raising your leg higher (elevation).
- Elevation-Remember, “toes above the nose” will help decrease swelling (use 3 pillows under your heel in bed).
- Ice-Helps with pain control and swelling. Ice should be used several times each day for at least 30 minutes at a time. “30 minutes on, 30 minutes off” is a good rule to start with. Do not put ice bags right on the skin. This can burn and irritate the skin.

Diet:

Resume your regular diet after you go home. A diet with a lot of fish, white meats, vegetables, nuts, seeds and fruits will help you heal. Avoid foods with saturated fats (like red meat), sugars, and simple carbohydrates (like soda and candy).

Activity:

- Walk around your home, then outside, several times each day. Take it easy and do not do anything that would cause you to sweat, as you are healing from a major surgery.
- No kneeling, squatting or bending of the operative knee more than 120 degrees. This is a small bend, your leg is still almost all the way straight.
- Work on range of motion to the operative knee several times each day with exercises from your therapists.
- One week after your surgery, you may slowly start low-impact activities. You may start walking more than 2 blocks or use an elliptical trainer or a stationary bike with the seat raised. Start slowly and increase over time. Do not overdo it!
- Stop activity if you have increased pain and/or swelling.

Driving:

- Do not drive while on opioid pain medicines (including tramadol).
- When you can begin driving safely is different for every patient and is ultimately your responsibility.
- If you have had a right knee surgery, you should not drive for 2 to 4 weeks.
- If you have had a left knee surgery, you should not drive for 1 week or more. Your surgeon will help you decide when you can drive again.

Return to work:

You are allowed to return to work when you are able to do so comfortably and safely. The timing of this is different for every patient and is up to you to decide. Your surgeon will provide you with the required paperwork to support your time off work, as needed.

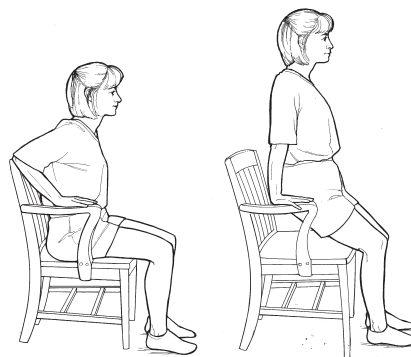


Exercises before your surgery:

These exercises will help prepare you for a successful surgery. We recommend you do 10 repetitions of each exercise, 3 times each day before surgery. Doing exercises with both legs will help with recovery. Avoid any exercise that causes an increase in pain.

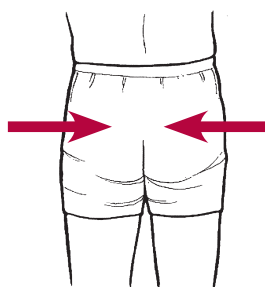
Chair push-ups:

Sit straight in a chair with your hands on the armrests. Straighten your arms and raise your bottom off the chair. (Don't use your legs to help.) Slowly lower yourself back to the chair.



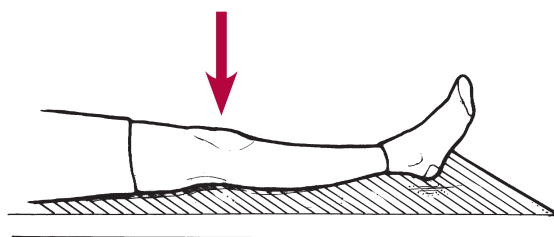
Gluteal sets:

Squeeze your buttock muscles together. Hold for a count of 5. Relax.



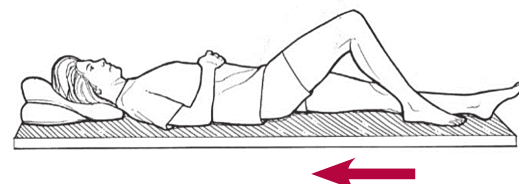
Quad sets:

Lie flat on your back. Tighten the quad muscles above your knee by pushing the back of your knee down toward the bed. Hold for a count of 5. Relax. Repeat.



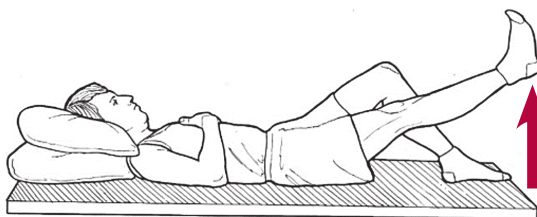
Heel slides:

Lie flat on your back with legs straight out. Slowly slide your foot toward your buttocks so you bend your knee. Then slide your foot back toward the foot of the bed, straightening the leg out again.



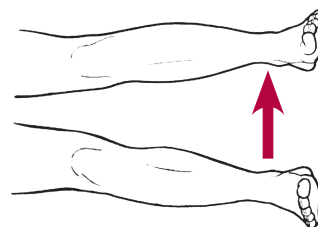
Straight leg raises:

Lie on your back. Keeping your knee straight, lift the leg toward the ceiling about 12 inches. Slowly lower your leg back to the bed. (Keep your opposite leg bent up with your foot flat on the bed to protect your back).



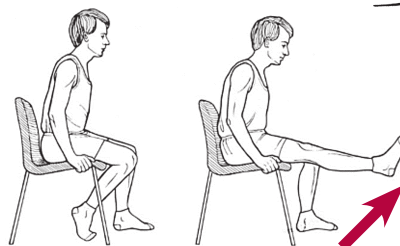
Hip abduction/adduction:

Lie flat on your back with legs straight out. Slowly slide your leg out to the side with your knee straight and your toes pointing to the ceiling. Then slide your leg back to the starting position.



Long arc quads:

Sitting in a chair, tighten thigh muscles to straighten knee. Hold for 2 seconds and then slowly lower back down.





University of Colorado Hospital
1635 Aurora Court
Aurora, CO 80045
720.848.1900

uchealth.org

