

Knee Replacement Guidebook



PANORAMA
Orthopedics & Spine Center



Welcome

Using this Guidebook

Communication is essential in the success of your recovery. Preparation, education and *your involvement* are key in our team-based approach. We believe *you* play a key role alongside our team in achieving a successful recovery. Our goal is to involve and support you during each step of this process.

Please read EVERY page thoroughly. Inside this guidebook we will explain what you can expect every step of the way so you feel comfortable, informed and prepared. There are several pre-surgical checklists to ensure you and your support team know what you need to do to be prepared for your upcoming surgery. The “Table of Contents” provides a quick reference to include important contact phone numbers for your care team. Be sure to review “Frequently Asked Questions” for additional insights.

Please remember, this is just a guide. Your care team may modify any of these recommendations based on your unique circumstances. Always use their recommendations first and please ask questions if anything is unclear.

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Knee Replacement: Brief Overview

Significant destruction of the joint cartilage in your knee can result in pain, stiffness and can make it hard for you to do daily activities such as walking or climbing stairs. Most commonly, this is a result of osteoarthritis, but also occurs as a result of other conditions such as rheumatoid arthritis and post-traumatic arthritis.

Your surgeon may recommend knee replacement surgery if other treatment strategies are ineffective. While this problem has seriously impacted your life, a joint replacement can offer significant pain relief, improve function, and enhance your overall quality of life. Each year, more than one million joint replacement surgeries are performed in the United States. Your decision to undergo elective joint replacement surgery is an important step to improve your quality of life and regain mobility.

Because it is called a “knee replacement” some patients believe this surgery results in significant bone loss and changes to the anatomy of the knee. However, the procedure is much more of a “knee resurfacing” than a “replacement”. The goal is to remove a minimal amount of bone, only at the surface of the joint, where arthritis has developed. The arthritic surface is replaced with metal components. A plastic liner (polyethylene) is inserted between these metal components. The components move together to allow normal motion of the knee joint. Your surgeon will determine the size, type and method used to ensure the optimal fit and function of your knee.

To find an animation from the American Academy of Orthopaedic Surgeons:
<https://orthoinfo.aaos.org/en/treatment/total-knee-replacement-animation/>



Components of knee replacement surgery. The femur is cut (A) to fit the femoral component (B); the tibial plate (C) inserts into the hollowed-out tibia (E); the spacer (C) sits between the femoral and tibial implants; the patellar implant (F) fits onto the underside of the knee cap (G).

Panorama Ortho 303.233.1223

Please refer to the front cover insert for your surgery team’s contact information.

Department	Reasons to Call	Contact Information
<p>Triage (7am-5pm M-F) *Excluding Holidays</p>	<p>Medical questions or concerns that require immediate attention</p>	<p>Call: 303-233-1223 Option 2 To be connected to Clinical Care Team</p>
<p>Pharmacy Questions (7am-5pm M-F) *Excluding Holidays</p>	<p>Refills for Prescriptions New Prescriptions Questions about medications</p>	<p>Call: 720-497-6662 (Requests after 3pm are handled the next business day)</p>
<p>Appointment Scheduling (9am-5pm M-F) *Excluding Holidays</p>	<p>Schedule follow up appointments and office visits</p>	<p>Call: 303-233-1223 Option 2, then option 1</p>
<p>Panorama Physical Therapy (8am-6pm M-F)</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Schedule physical therapy appointments <input type="checkbox"/> Questions or concerns for your therapist 	<p>Central Scheduling 303-274-7330</p>
<p>Navigation Central (AFTER HOURS)</p>	<p>24-hour call service Live Emergency Medical Technicians to help with all questions and urgent situations; you will get to talk directly to a person</p>	<p>Call: 303-233-1223 To connect to our after hours Clinical Care Team</p>
<p>Non-medical Questions</p>	<p>Billing Workers Compensation Privacy Office</p>	<p>Call: 303-233-1223 Option 2 then 3 (For Billing)</p>

Facility Locations and Contact Information

OrthoColorado Hospital

11650 W. 2nd Place

Lakewood, CO 80228

720-321-5061 for Pre-operative Testing Questions

www.orthocolorado.org/education to view pre-operative education videos

St. Anthony Hospital

11600 W. 2nd Place

Lakewood, CO 80228

Main Line 720-321-0000

www.centura.org/locations/st-anthony-hospital.org

Littleton Adventist Hospital

7700 S. Broadway

Littleton, CO 80122

303-738-2750 Pre-operative Testing Questions

www.centura.org/locations/littleton-adventist-hospital

St. Anthony North Hospital

14300 Orchard Parkway

Westminster, CO 80023

720-627-3028 Pre-operative Testing Questions

720-627-0211 For pre-operative education information

www.centura.org/locations/st-anthony-north-health-campus.org

Centennial Hospital

14200 E Arapahoe Road

Centennial, CO 80112

303-269-3493 Pre-operative Testing Questions

303-949-1178 Nursing Supervisor (if unable to reach pre-op testing)

www.healthonecares.com/campaigns/centennial-medical-center.org

South Denver Surgery Center

300E. Mineral Ave., Suite 9

Littleton, CO 80122

720-360-3400

www.southdenversc.com

The Orthopedic Surgery Center

14190 Orchard Parkway, Suite 100

Westminster, CO 80033

720-856-0008

<https://www.orthosurgery-colorado.com/>

Surgery Scheduling and Requirements

1. Finalize with your surgeon that you wish to proceed with knee replacement surgery.
2. Make sure your medical history is up to date with your surgeon.
3. You will be contacted by a surgery scheduler to schedule your surgery.
4. If you would like financial guidance or information about what your insurance plan will cover, please refer to detailed financial information on page 30 for answers to questions regarding billing and insurance.
5. Prior to your scheduled surgery, we will **REQUIRE** medical clearance from your primary medical provider. If your procedure is scheduled at Littleton Hospital, it may be completed at their Pre-Admission Testing Clinic. Medical clearance typically includes a physical examination, blood work, EKG, and any other tests deemed necessary by your provider. Surgery cannot proceed without prior clearance! Please schedule this as soon as possible. If you do not have a primary medical provider, please let us know and we will arrange medical clearance for you.
6. Your surgical facility will provide education specific to your upcoming surgery. We ask you to have a family or friend support person review that education with you, take you home from the surgical facility, and assist you while recovering at home. You should prepare support at home for at least 72 hours after surgery while you make your initial recovery.

Pre-Operative Checklist

45 Days Before Surgery

- Schedule your medical clearance appointment with your primary care provider **ASAP**. If your procedure is scheduled at Littleton Hospital, you can complete this process at their Pre-Admission Testing Clinic. Failure to complete medical clearance is a common cause for surgery delay and cancellation.
- Please anticipate seeing any specialist who has provided care to you in the past 12 months (i.e. cardiology, pulmonology).
- Make a discharge plan to include a family or friend support person that can attend the class with you, take you home from the surgical facility and assist you while recovering at home.
- Review the pre-surgical educational materials provided by your facility. Please have your support person plan to review educational materials with you.

30 Days Before Surgery

- Begin pre-operative exercises listed on page 16 of this book as this will help with your strength after surgery.
- Arrange work and your social calendar to accommodate recovery time. Your surgeon and care team will let you know when you can return to work and other activities after surgery. Please email any disability or FMLA paperwork to the physician communication email box at least 2 weeks prior to your surgery.
- Please contact your surgical facility about how to obtain adaptive equipment (walker/cane) to assist in your recovery.
- You have the option to meet with a Panorama Physical Therapist prior to your surgery. Contact central scheduling 303-274-7330 to schedule. They will record baseline measurements, discuss your upcoming procedure and goals for you and your new knee. Your surgeon recommends that you have your first formal therapy session with Outpatient physical therapy 4-7 days after your knee replacement surgery and expect to have 2 sessions/week. Please arrange transportation to these biweekly sessions for the first 2 weeks or until cleared by your surgeon to drive.
- Consider purchasing a Cold Therapy Unit. These are available for purchase at our DME stores (303.233.1223 ext 1600). If your surgery is scheduled at St. Anthony North, please contact the hospital for information about obtaining a Cold therapy Unit.

- Dental appointments or major dental work must be completed 30 days prior to your surgery. Non-urgent dental work should be postponed 3 months following surgery.
- Please contact your surgeon or care team if you are having any minor medical procedures or urgent dental procedures 30 days prior to your surgery. Avoid joint injections 3 months prior to joint replacement surgery.
- Review infection prevention instructions, please see page 38. Patients are to wash with an antiseptic solution the night before surgery. This is available for purchase at the Panorama DME store (303-233-1223 ext. 1600).
- If you smoke, you should attempt to stop smoking before surgery. Tobacco containing products can increase your risk of infection and complications after surgery. If you are unable to stop smoking, please ABSTAIN for 24 hours before your surgery and at least 48 hours after surgery. All surgical facilities are non-smoking facilities. If you need help with smoking cessation, please visit www.coquitline.org or call 1-800-QUIT-NOW.

Pre-Operative Checklist

7 Days Before Surgery

- Contact your surgeon if there is a change in your medical condition (cold, infection, fever, cuts/scrapes) as it may be necessary to reschedule your surgery.
- Some commonly used medications need to be stopped 7 days prior to surgery. Please review pages 20-21 for detailed medication recommendations by your surgeon.
- You will receive a call from the surgical facility PATT department (preadmission testing and teaching) prior to your surgery. These nurses will review your medical history, surgical history and your current list of all medications, vitamins and supplements. They will also give you individualized medication instructions. Prior to your call, please have an updated list of all medications, vitamins and supplements ready.
- You will receive a call from the surgical facility surgery scheduler 24-48 hours prior to your surgery with the time of your surgery.
- Please refrain from shaving your legs 7 days prior to your surgery date to avoid cuts or nicks.
- Please review page 14 for instructions to ensure a safe home environment prior to your return home. If you have pets, please arrange for a family or friend to assist in caring for them for a few days after you return home.
- Stay well hydrated by drinking water and maintain a well balanced diet to include fiber rich foods such as fruits and vegetables. This will additionally help to prevent constipation after surgery. Please review page 37 for a reference to improve your nutrition and prepare your body for surgery.
- Confirm your first post-op appointment date and time.

Night Before Surgery

- ❑ **PLEASE** shower using Chlorhexidine (Hibiclens) to help prevent infection. Please see page 38 for detailed instructions. Do not use any lotions, creams or deodorant on your skin prior to surgery.
- ❑ **PLEASE** follow guidelines regarding when to stop food or drink prior to your surgery. This includes gum chewing, mints and all tobacco products. Please be advised that if these guidelines are not followed your surgery will be cancelled.

Day of Surgery

- ❑ Only take the medications you have been instructed to take the day of surgery with a small sip of water.
- ❑ Do not apply lotions, deodorants or perfumes.
- ❑ Please bring with you eyeglasses, hearing aids, dentures or any device needed to aid in your care. If you have a Cold Therapy Unit (ice machine) please bring it with you. Please leave jewelry or valuables at home.
- ❑ Wear loose fitting, comfortable clothes such as shorts, sweats and a top for returning home. Please wear shoes with a non-skid sole or a closed heel for walking after surgery.
- ❑ Please bring your picture ID, insurance card and a current list of medications, vitamins and supplements.
- ❑ Arrive at the surgical facility as instructed to check in and allow for traffic and inclement weather that could delay your arrival time.

Preparing Your Home

To ensure a safe environment, it is important to take specific measures to prepare your home for your post-op return. Use the checklist below as a helpful resource:

- Clean up and declutter your house allowing for walking paths large enough for you to pass with a walker. This is especially important on your path from where you will spend most of your time and the bathroom.
- Apply adhesive strips to bottom of bathtub or shower area. Wet floors are a high fall risk.
- Shop for groceries and stock up with nutritious food for your recovery.
- Prepare and freeze meals in single serving containers.
- Identify any uneven surfaces inside and outside your home. These are trip hazards. If a trip hazard can be removed, like a throw rug, a long bed skirt, or an electrical cord, please do so.
- Install or tighten any loose railings on stairways.
- Install nightlights in bathrooms, bedrooms and hallways and replace light bulbs.
- Arrange items in kitchen, bathroom and bedroom to be easily accessible without having to lift or bend, including your phone and a phone charger.
- Keep pets in another room until you are safely settled in your home. Pets and small children can be trip hazards.
- Tend to any household chores like laundry and yard work.
- Put clean linens on your bed and have another set clean and ready.
- If you have purchased an ice machine, also purchase 8-12 pre-frozen water bottles 16 ounces or smaller to use in your ice machine. Remove the labels from bottles to prevent clogging the filter and store them in the freezer.

Building Your Recovery Team

Discharge planning is a very important step of preparing for a same-day knee surgery.

Our goal is to return you to your home environment the day of your surgery. You will be most comfortable and more active in your home setting, which will lead to your optimal recovery.

As a candidate for a same-day knee replacement, we suggest a family or friend to be with you for the first 72 hours after discharge from our surgical facility . This may vary depending on your personalized needs. Although you will be independent, having someone to help with medication administration, meal preparation, and daily chores will ensure your needs will be met.

As your family and friends play a pivotal role in your surgical process, we would like you to involve them throughout the preparation, surgery and recovery from your knee replacement. Your support person is encouraged to participate in all facets of the surgical process to include joint class, surgery day process and therapy/surgeon visits.

Knee Physical Therapy Exercises

Strong, healthy individuals recover significantly faster. You are encouraged to walk at least 20 mins, 3 times per week to increase exercise activity prior to surgery. Every little bit of strength will help during your postsurgical recovery. Start practicing the exercises below twice a day for at least four weeks before your surgery.

LOWER EXTREMITY STRETCHING

These stretches are safe to perform prior to surgery in a pain-free range.



HAMSTRING STRETCH WITH TOWEL/STRAP

While lying down on your back, hook a towel or strap under your foot and draw up your leg until a stretch is felt along the backside of your leg. Ensure opposite knee is bent and that your knee on the leg being stretched is in a straightened position.

3 sets, 30 second hold, 1-2x/day



SINGLE KNEE TO CHEST STRETCH

While lying on your back, hold your knee and gently pull it up towards your chest. Keep opposite knee bent.

3 sets, 30 second hold, 1-2x/day



PIRIFORMIS STRETCH

While lying on your back, cross your leg as shown and pull your leg towards your chest as shown. **Perform as tolerated as pain allows*

3 sets, 30 second hold, 1-2x/day



CALF STRETCH WITH TOWEL – GASTROCNEMIUS

While in a seated position, place a towel around the ball of your foot and pull your ankle back until a stretch is felt on your calf area. Keep your knee in a straightened position during the stretch.

3 sets, 30 second hold, 1-2x/day



ANKLE PUMPS

*To neutral for Achilles repairs x6 weeks

Bend your foot up and down at your ankle joint as shown.

3 sets, 20 repetitions, 1-2x/day



ANKLE CIRCLES

Move your ankle in a circular pattern one direction for several repetitions and then reverse the direction.

3 sets, 20 repetitions, 1-2x/day



HEEL SLIDE

Using a rigid strap, slowly pull your knee towards you until a gentle stretch is felt. Do not stretch into pain on the front of your hip.

1 set, 10 repetitions, hold 10 seconds, 1-2x/day

Knee Physical Therapy Exercises

Core Strengthening

These strengthening exercises are safe to perform prior to your knee surgery in a pain-free range.



ABDOMINAL BRACE

Laying on your back with your knees bent, draw in your belly button as if putting on a tight pair of pants. It should feel like you are flattening or pushing your back into the table/bed.

2 sets, 10 repetitions with 10 second hold, 1-2x/day



STRAIGHT LEG RAISE – SLR

While lying on your back, raise up your leg with a straight knee. Keep the opposite knee bent with the foot planted on the ground. Ensure core muscles are activated.

2 sets, 10 repetitions, 1-2x/day



STRAIGHT LEG RAISE ABDUCTION

While lying on involved side raise top leg up towards ceiling without allowing top hip to roll backwards. Keep body in one straight line from head to toe..

2 sets, 10 repetitions, 1-2x/day



BRIDGING

While lying on your back with knees bent, tighten your lower abdominals, squeeze your buttocks and then raise your buttocks off the floor/bed as creating a “Bridge” with your body. Hold and then lower yourself and repeat.

2 sets, 10 repetitions 3 second hold, 1-2x/day



HIP ADDUCTION SQUEEZE – SUPINE

Place a rolled-up towel, ball or pillow between your knees and press your knees together so that you squeeze the object firmly. Ensure core is activated. Hold and then release and repeat.

2 sets, 10 repetitions 10 second hold, 1-2x/day



SUPINE HIP ABDUCTION – CLAMSHELL

Lie down on your back with your knees bent, tighten your core and then draw your knees apart.

2 sets, 10 repetitions, 1-2x/day



LONG ARC QUAD

While seated with your knee in a bent position, slowly straighten your knee as you raise your foot upwards as shown. Ensure core muscles are activated.

2 sets, 10 repetitions, 1-2x/day

Medications To Stop Before Surgery

Stop at Least 7 Days Prior to Surgery

Stop all Aspirin* containing products such as:

Coated ASA Uncoated ASA Ecotrin BC Powder	Disalcid Salsalate Dolobid Diflunisal Alka-Seltzer	Goody Powder Norgesic Pepto Bismol Percodan
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Stop all Antiplatelet* Medications such as:

Aggrenox (aspirin + dipyridamole)	Plavix(clopidogrel)	Pletal(cilostazol)	Trental(pentoxil)
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***If You Have Heart Stents: DO NOT STOP PLAVIX OR ASPRIN UNTIL SEEN AND DIRECTED BY A CARDIOLOGIST PRIOR TO SURGERY.**

Anticoagulation medications such as Coumadin, Lovenox, Eliquis or Xarelto need special instructions. Please discuss with your primary medical provider prior to surgery.

Stop all birth control pills & any male or female hormone (including creams or patches) such as:

Estrogens Estradiol Estraderm Estratest	Premarin Prempro Estrace	Ogen Emcyt Testosterone
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Stop all herbal & weight loss medications such as:

Alpha lipoic acid Cinnamon Chamomile Creatine Echinacea Acetyl L-carnitine	L- carnosine Ephedra Fish oil Garlic Ginkgo Milk Thistle	Glutamine Goldenseal Licorice Kava Ginseng	Skullcap Saw Palmetto St. John's Wort Tumeric
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Stop all vitamins and joint supplements containing products such as:

Vitamin A Vitamin C Vitamin E Vitamin K	Fish Oil Omega 3,6,9 CoQ10 Juice Plus	Krill Oil Glucosamine Chondroitin MSM
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Stop all non-steroidal anti-inflammatory (NSAID) medications such as:

Ibuprofen Advil Nuprin Ketoprofen Oruvail Orudis Cataflam Clinoril Sulindac Piroxicam Naprelan	Relafen Nabumetone Arthrotec Voltaren Tolectin Tolmetin Lodine Meclomen Meclofenamate Mediprin	Diclofenac Etodolac Mobic Meloxicam Naproxen Naprosyn Indocin Oxaprozin Daypro Indomethacin	Celebrex Celecoxib Aleve Anaprox Ansaid Feldene Naprelan Lodine Meclomen Meclofenamate
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Contact your primary care provider or specialist for instructions if you take any of the following medications:

Humira Remicade Imuran Enbrel Rituxan Actemra	Kineret Cosentyx Stelara Benlysta Xeljanz	Cimzia Orencia Librium Librax Cytoxan Adderall
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Your prescribing physician should help with monitoring these medications

Day of Surgery Medication Recommendations

You may continue taking the following medications:

- Cholesterol medications
- Psychiatric medications
- Gabapentin
- Tylenol (regular, extra strength, arthritis)
- Ultram (Tramadol)
- Thyroid medications
- Ultracet
- Iron supplements
- Blood pressure medications –
Please see additional instructions on next page regarding your blood pressure medication.

Preventing and Treating Narcotic-Induced Constipation:

- For constipation start Senna-S (Senna + Docusate) 2 days before surgery (can substitute with Senna and Docusate as separate medications)
- Take 2 tablets, twice a day starting 2 days before surgery - if you experience loose or watery stools, STOP using the Senna-S and resume it the night of surgery

Day of surgery medication recommendations:

You should NOT take the following blood pressure medications on the day of surgery:

- ACE Inhibitors. Common ACE Inhibitors include:
benazepril (Lotensin), captopril (Capoten), enalapril (Vasotec), lisinopril (Prinivil, Zestril), quinapril (Accupril)
- Angiotensin Receptor Blockers (ARBs). Common ARBs include:
losartan (Cozaar), olmesartan (Benicar), telmisartan (Micardis), valsartan (Diovan)
- Diuretics. Common diuretics include:
hydrochlorothiazide (HCTZ, Microzide), furosemide (Lasix) spironolactone (Aldactone), triamterene (Dyrenium), chlorthalidone, bumetanide
- Pills that contain combinations of ACE Inhibitors, ARBs or diuretics

It is OK to take the following blood pressure medications on the day of surgery (with a small sip of water):

- Beta blockers. Common beta blockers include:
atenolol (Tenormin), metoprolol (Lopressor, Toprol), carvedilol (Coreg), propranolol (Inderal), acebutolol, bisoprolol, nadolol, penbutolol, pindolol
- Calcium channel blockers include: Common calcium channel blockers include:
amlodipine (Norvasc), diltiazem (Cardizem, Tiazac), ifedipine (Procardia), verapamil (Calan, Verelan, Covera-HS, nifedipine (Cardene SR), felodipine
- Vasodilators. Common vasodilators include:
hydralazine, minoxidil, clonidine (Catapres), doxazosin (Cardura)

What To Expect the Day Of Surgery

The surgical facility will inform you of your check in time for your procedure and we appreciate your timely arrival. Once the registration process is completed, a pre-operative nurse will assist you to your pre-operative room.

Pre-operative Area

In the pre-operative room, your nurse will take your vital signs, review your medical and social history, and start your intravenous (IV) access line. You will visit with your surgeon, anesthesiologist, and other members of your care team who will be available to answer any additional questions. During your time in the pre-operative area, you and your support person will receive additional information on what you can expect throughout the day as you progress through the phases of care to prepare for discharge. The phases of care are pre-operative room, operating room, recovery room and discharge phase. Plan to go home the SAME DAY OF YOUR SURGERY when you meet all discharge criteria.

Anesthesia

The surgical facility anesthesia team is made up of Board Certified or Board Eligible Physician Anesthesiologists and Certified Registered Nurse Anesthetists (CRNAs). Your anesthesiologist will speak to you before surgery to discuss any health concerns and types of anesthesia that will be used during surgery. He or she will explain the risks and benefits associated with the different anesthetic options, as well as any complications or side effects that can occur with each type of anesthetic.

What To Expect The Day Of Surgery

Anesthesia

The surgical facility anesthesia team is made up of Board Certified or Board Eligible Physician Anesthesiologists and Certified Registered Nurse Anesthetists (CRNAs). Your anesthesiologist will speak to you before surgery to discuss any health concerns and types of anesthesia that will be used during surgery. He or she will explain the risks and benefits associated with the different anesthetic options, as well as any complications or side effects that can occur with each type of anesthetic.

Comprehensive Anesthesia

General, Spinal and Regional Anesthesia

General anesthesia:

Anesthetic gas is administered, which requires a small breathing tube inserted after you are asleep and removed before you are awake.

You will be fully asleep during your surgery.

Spinal anesthesia:

A single injection of local anesthetic in the lower back which produces no movement or feeling from the waist down during your surgery and recovery period.

It does not require assistance for breathing.

It provides pain control for several hours after surgery.

IV sedation medication will be administered during the procedure to induce “twilight sleep” (you will NOT be awake).

Regional anesthesia: Peripheral nerve blocks (Surgeon specific)

Your anesthesiologist may administer an indwelling nerve catheter(nerve block) with numbing medication to your operative leg. This block will help minimize pain and decrease the amount of narcotic pain medication needed after surgery, while still preserving the strength in your operative leg to allow for walking. The nerve catheter may provide pain relief for up to 5 days after surgery. Anesthesia will provide specific instructions and education prior to your discharge.

Preparing for Discharge

Post-Anesthesia Care Unit (PACU)

Phase One: Recovery Room

After surgery, you will be transferred to the recovery room where you will stay for 1-2 hours as you awaken from surgery. Your nurse and anesthesiologist will closely monitor your vital signs and manage your pain.

Phase Two: Discharge Phase

Once your spinal block has worn off and your vitals are stable, you will walk with your nurse and be instructed on use of an assistive device (walker or cane). Physical Therapy will review mobility, home safety and activities of daily living that can be directly affected by your surgery. Early walking is encouraged and good for your new knee replacement. In addition, walking is the most important thing YOU can do to prevent blood clots!

Your discharge nurse will review your discharge instructions with you AND your support. Your discharge instructions will address medications, pain management, infection PREVENTION and prophylactic measures to avoid blood clots; including surgeon specific instructions..

In order to be safely discharged, you must meet the following criteria:

- Able to tolerate a regular diet
- Have met Physical Therapy goals
- Pain is at a tolerable level
- Able to urinate

What To Expect After Surgery

- **EXPECT TO HAVE PAIN AFTER SURGERY.** Knee replacement surgery is a major operation and can be very painful. Although we cannot eliminate all your pain, we want it to be tolerable enough so that you are able to perform your therapy and daily activities. This is accomplished with appropriate pain medications in addition to ice, elevation, and positioning. You may have pain that is greater while you are walking and moving your knee in the first several weeks. This is a normal part of the healing process and walking is essential for a successful recovery.
- Bruising and swelling are expected after surgery. Initially, swelling will be mild. Over the first two weeks, expect significant swelling to spread to the entire leg and foot, especially after periods of prolonged walking or standing. Bruising may travel up as high as your groin and may reach down to your toes.
- Ice and elevation are essential strategies to help reduce swelling. Keep ice applied to the knee when at rest. You may use ice packs or the cold therapy unit. Always keep a barrier between the ice pack or cold therapy unit and your skin. Elevate your leg, especially after you have been up walking or standing for prolonged periods. This is accomplished laying on a couch or in bed with one or two pillows positioned lengthwise to elevate your knee above the level of your heart.
- Sleeping may be difficult in the first several weeks. This is due to the physiologic burden of surgery, the new medications you are on, and a change in your activity level. Napping during the day may make sleeping at night difficult. If sleeping becomes an issue please contact your team for further guidance.
- Fatigue also is common following surgery for the same reasons outlined above. Eventually, you WILL get your energy back, but this may take several weeks or even several months for some people.
- Physical Therapy is an essential component of the recovery process. Physical Therapy (PT) typically lasts for 6 weeks, and is the MOST IMPORTANT THING you can do to optimize your outcome. You will get a prescription for outpatient PT from your surgeon. You should begin PT within 4-7 days of your surgical date. A list of recommended physical therapy clinics have been provided on page 41 of this packet for your convenience. It is ideal to call and arrange your therapy appointments prior to your surgery.
- Although you may experience a decrease in appetite, surgery is a stress on your body and increases the need for adequate nutrition. If your appetite has decreased, eat smaller, more frequent well-balanced meals. Remember to drink water and stay hydrated.
- Pain medications can cause constipation. Please be sure to stay hydrated and continue laxatives/stool softeners while on pain medication to decrease constipation risk. Please see page 40 for examples of laxatives that can be purchased over the counter.

Medications After Surgery

You will be on SOME of these medications based on your personalized medication plan. Please see a detailed discharge medication list for your personalized medication plan given to you at the surgical facility.

Blood thinning medications to prevent blood clots

Please review your detailed discharge medications for recommendation of your personalized blood thinner. Either Aspirin or Eliquis will be used based on your medical history. In certain cases, other blood thinners may be used (Lovenox, Coumadin or Xarelto)

Aspirin: 81mg tablet to be taken twice a day for 30 days after surgery to help prevent blood clots.

-AND-

Protonix (Pantoprazole): Stomach protector. Take 1 tablet daily, in the morning to protect your stomach. You should continue to take this medication for 30 days while you take aspirin.

-OR-

Eliquis (Apixaban): 2.5mg tablet to be taken twice a day for 10 days after surgery to help prevent blood clots.

Opioid Pain Medications for pain control

These medications are as needed and will be prescribed at the time of your discharge from the surgical facility based on your history and tolerance.

Oxycodone: Short-acting pain pill to be used as needed for breakthrough pain. You may take 1-2 tablets every 4-6 hours.

-OR-

Hydrocodone/Acetaminophen (Norco): Short-acting pain pill to be used as needed for breakthrough pain. You may take 1-2 tablets every 4-6 hours. This medication contains Acetaminophen (Tylenol) and is NOT to be used with over-the-counter Tylenol.

-OR-

Hydromorphone (Dilaudid): Short-acting pain pill to be used as needed for breakthrough pain. You may take 1-2 tablets every 4-6 hours.

Medications after Surgery

Prescription Muscle Relaxant

This medication may be prescribed and is used as needed to treat muscle spasms after surgery.

Robaxin (Methocarbamol): Muscle relaxant, take prescribed dose every 8 hours as needed for muscle spasms.

Prescription Non-Steroidal Anti-Inflammatory (NSAID)

Meloxicam (Mobic): Anti-inflammatory, take prescribed dose for a total of 4 weeks after surgery. Make sure you take this medication with food. DO NOT use any over the counter NSAIDS (Advil, Motrin, Ibuprofen, Aleve, Naproxen) while taking Meloxicam.

Prescription Nausea Prevention

Ondansetron (Zofran): Nausea medication to be used as needed. You may take one tablet every 4-6 hours.

Over The Counter(OTC) Pain Medication

Acetaminophen (Tylenol): 650mg-1000mg every 6 hours as needed for mild-moderate pain, headache or fever. Please refer to your surgical facility discharge medication list for your appropriate dosing instructions. DO NOT take Acetaminophen(Tylenol) if you are taking Norco for your opioid pain medication.

Over The Counter(OTC) Constipation Prevention

Senokot-S (Senna Plus): Stool softener/laxative for constipation. Take 2 tablets twice a day starting 2 days before surgery until you are off all narcotics after surgery. May additionally utilize over the counter alternatives(if needed) to include: Miralax, Milk of Magnesia, Magnesium Citrate

Post-Surgical Office Visits

We will ask you to return to the office at routine times after your discharge from the surgical facility. You will be seen approximately two weeks and six weeks from the time of surgery for your post-surgical visit with your surgeon or physician assistant.

At two week visit:

- PLEASE bring in ALL of your post-surgical medications that you are currently taking in their original bottles so your surgeon and care team can review and adjust them as needed.
- This appointment will include a physical examination with incision check, medication review and possible xray of your new knee.

At six week visit:

- This appointment will include a physical examination with incision check, medication review and possible xray of your new knee.

Further follow-up visits with your surgeon are recommended around 4-6 months, 1 year, 3 years, 5 years and every 5 years thereafter. Please consult with your surgeon regarding the recommended follow up timeframes. It is important to come in for routine evaluations and xrays of your knee even if you are feeling great. This recommendation is to monitor the implant for any signs of loosening, wear or early failure that should be addressed prior to you becoming symptomatic.

Should you desire to schedule a visit for any reason you are always welcome to do so.

Financial Information

We understand that financial planning is an important step toward feeling prepared and informed about your upcoming surgery. Please expect Panorama Orthopedics to collect at least 60% of the bill due for surgery in advance of your surgery date. This amount is based on the amount that you are responsible for according to your insurance plan (i.e. deductible, copay, or co-insurance). You may anticipate additional billing from the surgical facility and anesthesia team that is not included in Panorama's bill.

If needed, a payment plan may be created to help manage the cost of surgery. This typically involves monthly payments and requires a credit card on file where monthly charges are made. If you have questions regarding your bill, please contact our Billing Customer Service Team at:

CustomerServiceTeam@panoramaortho.com

720-497-6637 (M-F 7:30 a.m. - 4:00 p.m.)

FAQ's

1. I need a refill of my surgical medications. Who do I call?

If you need a refill of your medication at any point, you need to call Panorama's Prescription line (720-497-6662) and follow the prompts. Please be aware that requests after 3pm are handled the next business day.

2. I went home with oxygen; how long do I need it and how do I get rid of it?

Occasionally, patients are sent home from the surgical facility with oxygen to help improve breathing for the initial 2 weeks. The decision to put you on oxygen is made by the internal medicine providers and respiratory therapists at the surgical facility. Prior to discontinuing home oxygen, contact your primary medical provider for an evaluation. If discontinuation of oxygen is recommended, please contact the oxygen company on the form that was given to you at the time of your discharge. Most often, there is a contact phone number on the oxygen tank or equipment. If you are unable to locate this contact information, please contact the Respiratory Department at the surgical facility for further instruction to set up a date and time to pick up the oxygen tank.

3. What is the healing process like after a knee replacement?

Expect to go home the same day of your surgery. On the day of surgery you should expect to walk and put full weight on your new knee! Initially, you may use a cane or walker to help you walk. You can eliminate these walking aids whenever you feel comfortable doing so. When you first begin to walk on your new knee, you may have pain and this is normal. Pain generally improves dramatically in the first several days to weeks after surgery. Thigh soreness is especially common in the first few weeks. On average, by week 6 most patients are about 75% recovered ("healed") from surgery. By 3 months, most patients are about 90% recovered. Complete recovery, including maximal pain relief and function, takes about 1 year.

4. When can I drive and return to work? How do I get a disability or FMLA paperwork signed?

Patients generally begin driving and returning to work between 2 and 6 weeks after surgery. Please be sure to speak with your surgeon before driving or returning to work as recovery time is individualized based on your specific surgery. Please email any disability or FMLA paperwork to the physician communication email box at least 2 weeks prior to your surgery for timely completion.

5. Will I need physical therapy when I go home?

You are recommended to start going to outpatient physical therapy within 4-7 days of your surgical date. This appointment should be arranged prior to your surgery. Please see a detailed list of physical therapy locations and their contact information provided on page 41 of this packet. Please work with your insurance company to determine "in network" locations and possible co-pays. Physical therapy typically lasts for 6 weeks, so please make sure to arrange transportation for the initial 2 weeks of your recovery period or until cleared to drive by your surgeon.

6. What equipment will I need at home?

Most patients will use a walker or cane after surgery. If you borrow or purchase one of these devices please bring it with you to the surgical facility and the therapist can utilize this device during your session. Otherwise, one can be issued to you by the surgical facility and billed to your insurance. You can eliminate these walking aids when you feel comfortable in doing so.

7. What will my knee feel like when I am completely healed?

Having a realistic expectation about your knee replacement will ultimately lead to your satisfaction with the surgery. The goal of knee replacement is to improve your pain and function. However, even a perfectly performed knee replacement may have residual stiffness or discomfort.

8. How long will my knee last?

This is a difficult question to answer as many factors determine the longevity of a knee replacement. Major orthopedic studies indicate that modern knee replacements last a long time. Several recent studies show that there is a greater than 90% chance that a knee will last 15 years or more. With the new advances in the materials we are now expecting 25-30 years of longevity.

9. Is swelling common after knee replacement?

Yes. In fact, you should anticipate quite a bit of swelling from your thigh to your foot after surgery. Your operative leg may swell to as much as 30% larger than your other leg. The swelling peaks at about 7-10 days after surgery and gradually diminishes. Sometimes the leg can have substantial bruising as well. This bruising is not dangerous. Elevating your leg will help decrease the swelling. It may take months for all the swelling to resolve.

10. Why do I have to take all these medications after my surgery?

Medications after surgery are prescribed to help ensure a safe and comfortable recovery.

Blood thinners are necessary to help prevent blood clots. IF YOU ARE HAVING A SIDE EFFECT FROM THE BLOOD THINNER OR YOUR INSURANCE DOESN'T COVER THIS MEDICATION PLEASE CALL YOUR SURGEON PRIOR TO STOPPING AS THIS IS A NECESSARY MEDICATION.

Pain medications help decrease your discomfort after surgery. Your surgeon uses “multi-modal” pain control, which has been clinically proven to be effective after knee replacement surgery. Multi-modal pain control uses different types of medication, which can improve your pain and mobility, thus decreasing the need for narcotic pain medications.

In general, patients are given an anti-inflammatory medication (Meloxicam) for 4 weeks and a short acting “as needed” pain medication (oxycodone, hydrocodone, or hydromorphone) and in most cases Acetaminophen (Tylenol).

The most common side effects from these pain medications are nausea, constipation, and itching. To help decrease these side effects, you may be given anti-nausea medication (Zofran), stool softeners (Senokot or Docusate), and anti-itching medication if needed (Benadryl, Atarax).

11. When can I travel? Do I need a special card to give to the security agent for screening?

There are no formal travel restrictions following your knee replacement, but we do recommend you walk frequently to avoid blood clots and stiffness. You do NOT need a special card or note from your surgeon for the airport. Simply inform the security agent you have a knee replacement and they will screen you appropriately.

12. Is it normal to feel or hear clicking or clunking in my knee after surgery?

The short answer is yes. The ligaments in a normal (non-replaced) knee allow for subtle motion of the knee in many directions. When a normal (non-replaced) knee moves it has cartilage and other soft tissues that cushion this movement. In a knee replacement, this normal motion still occurs, but instead of soft tissues, there are metal and plastic parts that touch each other. When this happens you may feel (or less commonly hear) a click or clunk in the knee. This is normal, should be expected and can decrease over time.

13. Is it normal to have numbness around the incision after surgery?

Yes. Knee replacement requires an incision to be made in the front of your knee. In most people, this incision cuts through the superficial nerve that provides sensation to the front of your knee. Most people will notice an area of numbness on the outside part of their knee. This area of numbness may be as big as several square inches, in some cases covering an area as big as the palm of your hand. In some people this area of numbness will diminish or resolve over time. In other people, the numbness will be permanent. Eventually the numbness becomes less and less noticeable and does not affect your functionality.

14. Can I kneel on my knee after surgery?

Yes. There is a common misconception that you cannot kneel directly on a total knee after surgery or that kneeling will damage a knee replacement. In reality, kneeling on a total knee is completely acceptable. Many patients, however, report that kneeling on their knee feels strange, uncomfortable, or even painful. Please know that kneeling is not bad for the knee. Knee pads or cushions can make kneeling more comfortable.

15. What should my activity level be after surgery?

Every patient is different. Each day you should be increasing your activity level, but let pain and swelling be your guide. The first 2 weeks are associated with the most pain and swelling. On average, you will make 75% of your recovery by week 6 and 90% by 3 months. You may have increased swelling or discomfort after therapy or increased activity. If this occurs, please listen to your body and rest and elevate your knee more to improve pain and swelling over the course of a few days.

16. When can I shower or bathe?

You can shower the day after surgery and let water run over your knee. Your dressing is waterproof. Leave it in place. Please remove your dressing when instructed by your surgeon. Please refer to your dressing for the exact removal date. Please avoid putting lotions/creams/ointments on the incision until cleared by your surgeon or physician assistant. You should avoid soaking in a bath or pool for 4-6 weeks after surgery when your incision is completely healed.

17. I just had a knee replacement. What positions can I sleep in?

You may sleep in any position you are comfortable in. Try to keep your leg as straight as you can. Although you can sometimes put a pillow under your knee for comfort, constantly sleeping with a pillow under the knee may lead to the inability to straighten your knee completely.

18. I am having difficulty sleeping after my knee replacement. Is this normal?

What can I do about it?

Patients often experience difficulty falling or staying asleep in the first few weeks after knee replacement. Some even describe restless leg-like symptoms. Sleep may be disrupted for many reasons. This is likely related to changes in your daily routine, medications you are taking, and changes to your body's metabolism during the healing process. Your sleeping patterns will eventually normalize. To improve sleep at night remain active during the day and avoid excessive napping.

19. Why am I so tired all the time?

It is normal to experience fatigue after knee replacement. This is due to a combination of the effects of pain medication, disrupted sleep patterns, and the physiologic toll that the surgery takes on your body while you are healing. You WILL regain your energy and stamina. In some cases it may take up to 3 months to get past the fatigue.

20. When can I restart the medications I was told to stop prior to surgery?

Prior to your discharge from the surgical facility your care team will discuss your detailed medication list and will go over when you may safely resume your home medications. If you have additional medication questions please check with your surgeon or your primary medical provider prior to restarting any medication in question.

21. Do I need to take antibiotics when seeing the dentist?

Dental prophylaxis is not routinely recommended in patients who have undergone a total joint replacement. Prophylaxis in unique situations, based on sound clinical judgment, may be considered and is not out of the scope of good practice.

22. What are the major risks of knee replacement surgery?

Infection: Infection remains the biggest risk after knee replacement and can occur anywhere from days to years after surgery. An infected total knee replacement requires surgery (sometimes multiple surgeries). Great measures are taken to help avoid infection. The national infection rate after knee replacement is about 1 in 100 (1%)

Blood clots: A blood clot, also known as deep vein thrombosis (DVT), may occur after surgery and can be potentially life threatening if it travels to your lungs. The risk of death from blood clots has been greatly reduced in recent years by the use of anticoagulants (blood thinners) and early mobilization (walking, moving, etc.). The symptoms of DVT are new or extreme swelling or a sudden increase in pain in the leg or calf. Please know that substantial swelling is normal and expected, as is some moderate calf and thigh pain. Most instances of swelling and pain are normal and improve with rest and elevation!

- If you or your physical therapists are concerned with the amount of swelling in your leg, please call your surgeon or Panorama Triage at 303-233-1223.

- Chest pain or shortness of breath are possible signs of a DVT that has moved to the lungs (Pulmonary Embolism or "PE"). If you experience chest pain or shortness of breath, go to the ER immediately.

Continued pain or stiffness: As noted above, in rare cases people will continue to have significant pain after a total knee replacement. Often the cause of this pain can be determined, but rarely it may be difficult to tell why a knee still hurts. Fortunately, this is uncommon. Some people's knees may become stiff after surgery. It is important to diligently perform your physical therapy exercises after surgery in order to prevent stiffness.

Need for more operations: Most knee replacements last many years. Early reoperation may be required in rare cases.

Nerve or blood vessel injury: Major nerve or blood vessel injury is exceedingly uncommon after knee replacement surgery.

Appendix

Nutritional Guidelines

Surgery can stress your body, but if you prepare for it, you can reduce the stress. Improving your nutrition can have a significant impact on the speed and quality of your recovery. If able, increasing your activity will help prepare your body for surgery. Please note, if you use tobacco products, quitting is essential.

Good nutrition is important before and after surgery as part of your treatment and recovery plan. Eating healthy foods and a variety of foods will help you heal faster.

A balanced diet that includes a variety of fruits and vegetables offers many health benefits. Fruits and vegetables have antioxidant and anti-inflammatory properties that are essential for good health. To follow a balanced and healthy eating pattern:

- Fruits and vegetables: Select a variety of five or more servings a day. These plant foods have phytochemicals (plant chemicals) that provide health benefits for the body.

Vegetables high in phytochemicals include broccoli, cauliflower, kale, cabbage and brussels sprouts.

Eat the rainbow – choose fruits and vegetables of every color to increase your variety.

- Lean protein: Include a source of protein at each meal. Protein is an important nutrient needed to make and repair cells in the body and an increase in protein is required after surgery.

Healthy sources of proteins include poultry, lean cuts of pork, fish, dried beans, low fat cheese and milk, Greek yogurt, legumes, and nuts.

Avoid fried foods, and fatty meats.

- Limit refined sugar intake (sugar-sweetened beverages, desserts, etc.).

- Stay hydrated with plenty of water.

- If you have diabetes, make sure your blood glucose is under control prior to surgery.

Use the ChooseMyPlate.gov guidelines from the USDA as a model of a healthy diet. For more nutrition and meal planning resources, please visit Academy of Nutrition and Dietetics: www.eatright.org

Appendix

Chlorhexidine Gluconate (CHG) Pre-Op Bathing Instructions

Panorama follows a standardized process for the prevention of surgical site infections. Below is a summary of the things you can do to help.

PLEASE READ ALL INSTRUCTIONS COMPLETELY PRIOR TO BATHING

All Surgical Procedures

- Most drug stores will carry small bottles(8oz) of chlorhexidine gluconate (4% CHG) that you may purchase for about \$5.00. Look for Hibiclens® or Dyna-Hex®, or ask the pharmacist. These are also available for purchase at Panoramas DME Store.

NOTE: this product will not be covered by insurance

- The night before surgery, place a fifty-cent piece size of CHG solution onto a clean washcloth and apply to all body surface areas (excluding face, hair and genitals). Wash thoroughly with special attention on the area where your surgery will be. Use additional soap when needed to cover all areas.
- At the end of your shower, wait 2 minutes before rinsing the soap-like material off of your skin surfaces. Use a clean towel to pat dry.
- Do not apply lotion, creams, or deodorant after your shower.
- If possible, sleep in clean pajamas and on clean sheets the night before surgery.
- Do not shave the area of surgery. Do not shave legs before knee surgery.
- DO NOT use this product on your body or incision after surgery.

CAUTION: Do not use it on the face, eyes, ears, or mouth and avoid use in genital area. If you accidentally get some of the soap in those areas, rinse immediately. If you experience burning or irritation on the skin, rinse immediately and do NOT reapply.

DONJOY Iceman Classic 3 Cold Therapy Unit

Cold therapy unit helps patients and medical practitioners easily manage post-operative pain and swelling, speeding up patient recovery and rehabilitation. The cold therapy unit can be purchased at the locations listed below. No appointment or reservation is needed to pick up. Please call to confirm availability (303-233-1223 ext.1600).

Item Price: \$195.00 plus tax (this item is not billable to insurance).



Westminster	Golden	Highlands Ranch
14190 Orchard Parkway Suite 200 Westminster, CO 80023	660 Golden Ridge Rd. Suite 250 Golden, CO 80401	1060 Plaza Drive Suite 200 Highlands Ranch, CO 80129

User Tips:

- ❑ If you are planning on bringing your cold therapy unit to recovery after surgery please leave it **sealed** in the box.
- ❑ Frozen disposable plastic water bottles can be used as a “reusable” ice cube. You can fit 3-4 standard size (16.9 oz.) water bottles inside the unit. Keep an additional 3-4 in the freezer to swap back and forth. **Be sure to take the labels off of the disposable plastic water bottles in order to prevent the paper from coming off in the water and clogging the motor.** Refresh the water daily to help keep the unit sanitary.
- ❑ Patients should ice 20 minutes on and 40 minutes off unless instructed otherwise by your physician. The easiest way to remember this is to ice for 20 minutes every hour on the hour.
- ❑ To clean, circulate warm water and 1-2 Tablespoons of white vinegar. Be sure to clean prior to storing.
- ❑ All units are non-refundable once they have been used. The unit has a 6 month manufacturer’ warranty. If any manufacturer issues arise with the unit please bring it to the point of purchase with the receipt in order to repair or replace the unit. **We are not able to honor warranty replacements without a receipt present.**

For questions **please call: 303-233-1223 ext. 1600.** If we are unable to answer please leave a voicemail. We aim to respond within 24 hours.

Appendix

CONSTIPATION PROTOCOL

Let's talk "SMAC": Surgery, Medication - Associated Constipation

- Narcotic pain medications taken after surgery can cause the bowels to temporarily slow or stop, resulting in constipation.
- While taking narcotic pain pills at home, it is recommended that extra fluids, fiber, and laxatives be taken daily.

Extra Fluids:

6-8 cups of water per day

(Avoid caffeine and alcohol, which may make constipation worse)

Extra Fiber

Foods with high "insoluble" fiber (best for constipation per serving):

Wheat bran cereals (Fiber One, All-Bran, Raisin Bran), beans (all types), sweet potato (with skin), whole wheat pasta, peas, and raspberries.

Stimulant Laxative- *Activates intestines by contracting muscle lining and causing bowels to move:*

Senokot (Senna)

Ex-Lax (Senna)

Dulcolox (Bisacodyl)

Correctol (Bisacodyl)

Osmotic Laxative - *Activates intestines by pulling in water and causing bowels to move:*

Milk of Magnesia

Miralax

Magnesium Citrate

Stool Softeners (Colase, Docusate, etc.) may be taken for hard stools in combination with Laxatives.

"Soluble" fiber laxatives (Metamucil, Fibercon, etc.) are less effective for constipation related to pain pills. Take all medications as directed. Notify your provider if constipation persists.

Panorama Physical Therapy Locations

Central Scheduling | 303-274-7330 | panoramaortho.com

Panorama Physical Therapy

Golden 660 Golden Ridge Road
Suite 130
Golden, CO 80401

Panorama Physical Therapy at Town Center

1265 Sergeant Jon Stiles Drive
Suite D
Highlands Ranch CO 80129

Panorama Physical Therapy at Bradburn

14190 Orchard Parkway
Westminster, Co 80023

Panorama Physical Therapy in Littleton

5005 S Kipling Parkway
Unit A-4
Littleton CO 80127

Panorama Physical Therapy Westminster

8510 N Bryant St
Suite 130
Westminster CO 80031

Panorama Physical Therapy Lakewood

437 S Wadsworth Blvd
Unit G
Lakewood CO 80226

Panorama Physical Therapy at Candelas

18068 W 92nd Lane
Suite 200
Arvada, CO 80007

Panorama Summit Orthopedics Frisco

68 School Road
Suite 150
Frisco CO 80443

Panorama Physical Therapy The Institute

1060 Plaza Drive
Suite 110
Highlands Ranch CO 80129

Panorama Physical Therapy at Centennial

14000 E Arapahoe Rd
#110
Centennial, CO 80112



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