



Joint Surgery Guide

Robert Wood Johnson | RWJBarnabas
University Hospital HEALTH

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rwjbh.org/newbrunswick

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Preparing for your surgery

Welcome!

Thank you for choosing the Joint Surgery Program at Robert Wood Johnson University Hospital (RWJUH) in New Brunswick, a RWJBarnabas Health facility.

Having your joint replacement surgery is the first step towards your new, healthy lifestyle.

Each year, more than 700,000 people make the decision to have joint replacement surgery. The surgery is to relieve pain, and return you to a normal and active daily routine.

Great changes have been made in the healing process following your joint surgery procedure(s), and you can expect to be up and walking the very same day, with the target goal of returning you to regular activity in six to twelve weeks.

The Joint Surgery Program at RWJUH follows a comprehensive, preplanned plan of care and treatment and you will be a part of your treatment every step of the way, because you play a large role in having a speedy and optimal recovery.

Your care team will include physicians, nurses, physical and occupational therapists, and patient care technicians specially trained in total joint care.

You will receive complete and continuous education to best prepare you for what to expect before, during and after surgery. A pre-planned course of treatment and discharge are important for the best results in joint surgery.

Please use the following information to help guide you with your total joint experience leading up to, during and after your procedure at RWJUH. Your physicians, nurses and therapists may change these guidelines to best fit the care and treatment most fitting for you.

Keep this reference guide around for at least the first year after your surgery. Although this guide reviews many details and may look overwhelming, it will help you with your surgery. We recommend reading the guide at a pace that suits you.

Program overview

Robert Wood Johnson University Hospital and RWJBarnabas Health offers a complete approach to total joint replacement and care.

Each step is made to encourage the best results, with the goal being discharge from the hospital in one or two days after surgery.

Features of the program include:

- Dedicated nurses and therapists trained to work with joint patients.
- Family and friends participating as “coaches” in the recovery process.
- A Joint Care Coordinator who assists with coordination of all pre-operative care and discharge planning.
- A patient guide for you to follow from before surgery until three months after surgery and beyond.

Scheduling your procedure

Your surgeon's office will schedule the date and time of your procedure at RWJUH. You can schedule your preoperative testing appointment by calling **732-418-8204**.

- Make sure that you have made an appointment with your medical doctor and get the pre-surgery tests your doctor has ordered.

You may call the Joint Care Coordinator at any time before or after surgery with questions, comments, or concerns.

Laboratory testing

If you are going to a laboratory other than RWJUH Lab for pre-admission testing, you must sign a release form allowing the release of your records to the doctor's office and hospital.

Medication questions

You should stop all anti-inflammatory medications such as aspirin, Motrin®, Naproxen, Vitamin E, etc.

These medications may make you bleed more. If you are taking a blood thinner, you will need special instructions for stopping the medication. Your physicians will tell you about what medications to stop before your surgery.

There are herbal medicines that do not mix with your other medicines. Check with your doctor to understand if you need to stop taking any of your herbal medicines before surgery. (Examples of herbal medicines include, but are not limited to: Echinacea, ginkgo, ginseng, ginger, licorice, garlic, valerian, St. John's wort, ephedra, goldenseal, feverfew, saw palmetto and kava-kava.)

Advanced directives

An Advance Directive is a way of telling all caregivers the patient's wishes regarding health care. If a patient has a Living Will or has appointed a Health Care Agent and is not able to speak his or her wishes to the physician, family, or hospital staff, the hospital is committed to honoring the wishes of the patient as they are documented at the time the patient was able to make those decisions.

There are different types of Advance Directives and you may wish to talk to your attorney about the legal implications of each.

- **LIVING WILLS** are written instructions that tell your wishes for health care if you have a terminal condition or coma and are not able to communicate.
- **APPOINTMENT OF A HEALTH CARE AGENT** (sometimes called a Medical Power of Attorney) is a document that lets you name a person (your agent) to make medical decisions for you, if you become unable to do so.
- **HEALTH CARE INSTRUCTIONS** are your choices about use of life sustaining equipment, hydration and nutrition, and use of pain medications.

When you get to the hospital, you will be asked if you have an Advance Directive. If you do, please bring copies of the documents to the hospital with you so they can become a part of your Medical Record. Advance Directives are not a requirement for hospital admission.

Stop smoking

It is very important to stop smoking before surgery. Smoking slows your healing and raises your risk of infection. Smoking can make the size of your blood vessels smaller and lowers the amount of oxygen in your blood. Smoking can also make your blood clot which can cause problems with your heart. Smoking raises your blood pressure and heart rate. If you quit smoking before you have surgery, you will raise your ability to heal. If you need help quitting, contact the New Jersey Quit Line at **1-866-657-8677**. This toll-free hotline, supported by the New Jersey Department of Health, connects callers to counselors. Counselors can also be reached at <http://njquitline.org>

If you need help quitting, contact our Tobacco Quit Center at **732-235-8222** for assistance.

Drinking alcohol

It is also important to lower or stop your alcohol consumption before and after surgery. It also can slow down healing and raise your chances of problems after surgery.

Start preoperative exercises

Many patients with arthritis favor the painful leg. As a result, the muscles can become weaker making recovery slower and more difficult. For this reason, it is very important to begin an exercise program before surgery as you will learn the exercises at the optimal time and start the work towards better strength and flexibility. This can make recovery faster and easier. If you need professional guidance or assistance in these pre-surgery exercises, a referral to Physical Therapy may be needed. Always consult your physician before starting a pre-surgery exercise plan.

Remember that you need your whole entire body strong, not just your leg. It is very important that you make your arms stronger by doing armchair push-ups because after surgery you will be using your arms to get up and when walking with the walker or crutches.

You will also use your arms to help you get in and out of bed and chairs, and on and off the toilet. You should also exercise your heart and lungs by performing light exercises – for example, walking for 10-15 minutes each day.

Do NOT do any exercise that is too painful.



Outpatient Physical Therapy locations near you

RWJ Fitness and Wellness Center New Brunswick

(Physical and Occupational Therapy)
100 Kirkpatrick Street
New Brunswick, NJ 08901
732-545-0494

RWJ Fitness and Wellness Center Old Bridge

1044 US Highway 9
Parlin, NJ 08859
732-727-2220

RWJ Physical Therapy, Balance and Cardiac Rehab

593 Cranbury Road
East Brunswick, NJ 08816
732-238-3202

J Physical Therapy and Cardiac Rehab Monroe

111 Union Valley Road, Suite 201-A
Monroe Township, NJ 08831
732-561-8031

RWJ Physical Therapy Marlboro

475 County Road 520
Marlboro, NJ
732-705-9666



Preparing your home for after surgery

It is important to have your house ready for after surgery. You can use this checklist as you get your house ready.

- Put things within easy reach; take essential items down from high shelves.
- Check hand railings to make sure they are not loose.
- Clean your house and vacuum carpets, rugs, and the floor. A clean house reduces bacteria and chance of infection.
- Clean, do the laundry, and put it away.
- Put clean sheets and blankets on the bed.
- Make sure you have chairs with arms and a firm seat.
- Make meals and freeze them in single serving containers.
- Cut the grass, tend to the garden, and finish any other yard work.
- Pick up throw rugs and tack down loose carpeting.
- Remove electrical cords and other obstructions from walkways.
- Install night-lights in bathrooms, bedrooms, and hallways.
- Arrange to have someone collect your mail, remove garbage.
- Arrange for pet care, if needed.
- Install grab bars in the shower/bathtub. Put adhesive slip strips in the bottom of the tub.

You can contact your local Office on Aging and Disability for any resources you might need after surgery. Each county in New Jersey has community-based services for older adults.



What to bring to the hospital

Bring personal hygiene items (toothbrush, powder, deodorant, electric razor, etc.); underwear, shorts, tops; well-fitted shoes with non-slip soles, such as flat shoes or tennis shoes. You may bring battery-operated items. If you have equipment such as a walker or reacher, you may have them brought to you after you surgery. Please make sure that all personal equipment is labeled clearly.

You must bring the following to the hospital:

- Your Patient Guidebook
- A copy of your advance directives, if you have one
- Your insurance card, driver's license or photo I.D., and any co-payment required by your insurance company
- Loose fitting clothes

The day before surgery

- You will receive a call **after 3:00 pm** informing you of the arrival time to hospital. If we are unable to reach you, we will be calling you back again after 6:00 pm. If by 8:00 pm you have not received a call please call **732-828-3000 extension 5680**. After 9:30 pm, please call extension 5783.
- Remember to do your Hibiclens shower the night before and morning of surgery.
- Sleep in fresh pajamas and fresh sheets.

The hospital will call you the day before surgery (or on Friday if your surgery is on Monday) to find out what time your procedure is scheduled. You will be asked to come to the hospital about two to three hours before the scheduled surgery time to give the nursing staff time to start IV's, prepare, and answer questions. It is very important that you show up on time to the hospital as some times the surgical time is moved up at the last minute and your surgery could start earlier. If you are late, it can make a significant problem with starting your surgery on time. In some cases, lateness could result in moving your surgery to a much later time. Feel free to bring items to help you pass the time such as books, newspaper, needle work, etc.

DO NOT eat or drink fluids you cannot see through after midnight on the night before your procedure. You may drink clear liquids (water, apple juice, clear broth) up to 2 hours before your scheduled procedure time. You may be instructed to drink a carbohydrate clear nutrition drink. You may brush your teeth and gargle in the morning. Take your medications as instructed with a small sip of water. If you make a mistake and accidentally did not follow the above instructions regarding eating or drinking, for your safety, please inform us prior to surgery.

The night before surgery

You will need to clean your skin with special soap (Hibiclens) the night before surgery, and the morning of surgery. You will receive the wash and directions at your pre-admission testing appointment. Follow the directions carefully. If you have any questions, feel free to ask. For example, if surgery is on Monday, use the special wash on Sunday night and Monday morning.

Your surgeon recommends this special wash to reduce the amount of germs on your skin prior to surgery.



Special instructions

You will be given instructions from your surgeon about medications, skin care, and showering.

- Wear clean loose and comfortable clothing that is easy to put on and take off.
- Jewelry and body piercing are NOT PERMITTED to be worn in surgery and should be removed prior to coming in to hospital.
- Remove makeup and dark nail polish.
- Do NOT use lotions, gels, hairspray, cologne or powders.
- Contact lenses are not permitted in surgery, please wear glasses or bring a contact lens case.
- You may wear glasses, hearing aid, and dentures, but they will need to be removed before your surgery. Please bring a case to secure these items.
- Remove wigs, hairpins, and hairclips.
- All medications are to be left at home. Please bring in a list of your medications including vitamins and over-the-counter medications.
- In the event that your medication is not readily available in the hospital, plan for somebody to bring in your medications. Pharmacy will then verify them before your nurse can administer.



Anesthesia

Anesthesia will be custom-fit to your personal needs. The types available for you are:

- General Anesthesia: provides loss of consciousness.
- Regional Anesthesia: involves the injection of a local anesthetic to provide numbness, loss of pain, or loss of sensation to a large region of the body. Regional anesthetic techniques include spinal blocks, epidural blocks, and leg blocks.
- Medications are also given to make you drowsy and minimize your anxiety.

Will I have any side effects?

Your anesthesiologist will speak to you about risks and benefits associated with the different anesthetic options as well as any side effects that might happen with each type. Nausea or vomiting may be related to anesthesia or the type of surgery. It is less of a problem because of better techniques and medications, but these side effects still might happen for some patients. Medications to treat nausea and vomiting will be given if needed.

The amount of discomfort you have will depend on different factors, especially the type of surgery. Your doctors and nurses will do everything possible to lessen pain and keep you safe.

You may be uncomfortable, but do not expect to be totally pain-free. The staff will teach you the pain scale to better assess your pain levels.

What will happen before my surgery?

You will most likely speak to an anesthesiologist during your pre-operative testing appointment. Your anesthesiologist will review all information needed to evaluate your general health. This will include your medical history, laboratory test results, allergies, and current medications. With this information, the anesthesiologist will determine the type of anesthesia best suited for you. He or she will also answer any further questions you may have.

After your surgery

Day of surgery

Once you arrive on the 2E Orthopedics unit, our staff will get you out of bed as soon as possible. Some patients may be candidates to go home the same day of surgery. This would be discussed with the surgeon's office before surgery.

Day one after surgery

Your surgeon or residents will visit you in the morning. You will have therapy twice a day, your coach is encouraged to be there as much as possible, and it would be helpful if your coach takes part in therapy. Visitors are welcome, preferably late afternoons or evenings, not during therapy sessions. Most patients feel comfortable and ready to go home the day after surgery.

If you are leaving the second day after surgery:

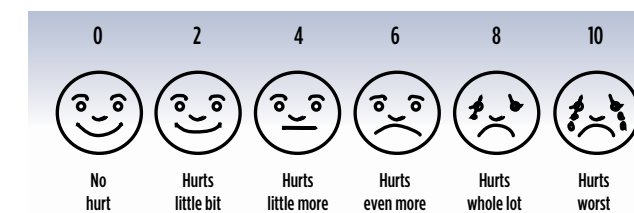
You could leave after the first therapy session or after the second therapy session.

Understanding pain

All patients have a right to have their pain managed. Pain can be chronic (lasting a long time) or acute from surgery. Pain can change through the recovery process.

If you need more help with your pain management, talk to your nurse, the Orthopedic Program Coordinator, or your doctor.

Pain scale



Your role in pain management

Using a number pain scale to describe your pain will help the team understand your pain level. If "0" means you have no pain and "10" means you are in the worst pain imaginable, how would you rate your pain? With good communication about your pain, the team can make adjustments to make you more comfortable. There are many ways to lessen pain. Work with your health care team to find the best ways:



- Ice
 - Ice is a good way to lessen pain.
 - Ice should be used right after surgery around the incision.
 - Ice should NEVER be placed directly on bare skin. Keep ice packs wrapped in a towel or placed over clothing.
 - Ice for 20 minutes at a time. Ice should be off at least 20 minutes.
- Stay Active
 - Get up and move around as instructed.
 - Change positions to relieve pain.
- Relaxation
 - Rest - make sure you are getting enough, good quality sleep
 - Meditation - this can help focus your mind and let you relax
 - Music - Find music that is calming or enjoyable to you. This can also help with relaxation
 - Breathing Exercises - Slow, deep breathing can reduce stress and pain

Deep breathing and coughing

To prevent potential problems such as pneumonia, it is important to understand and practice breathing exercises. Techniques such as deep breathing, coughing, and using an Incentive Spirometer may also help you recover more quickly. Directions on using the Incentive Spirometer will be discussed in your preoperative education class and while in the hospital.

Breathing exercises

- Perform in an upright, sitting/leaning forward/standing position, shoulders relaxed
- Breathe in deep and slow as much as possible through nose or mouth
- Hold breath for 2-5 seconds
- Then breathe air out slowly through pursed lips (like you are blowing out birthday candles) as a normal relaxed expiration
- 10-15 consecutive breathes repeated for 3 sets – 60 sec pause between each set
- Cough during pause to mobilize secretions if necessary

****Perform hourly after surgery****

Patient experience survey

We are always trying to give our patients the best care possible. To ensure we continue to give you excellent care you may be asked to complete patient satisfaction surveys. From the time of discharge to perhaps a year later, you may be asked to complete patient satisfaction surveys. These surveys, both from the hospital and from the Joint Surgery Program, are your opportunity to tell us what you feel went well and what can be improved. Please complete these surveys truthfully and return them so we can continue to improve our care.



Discharge

It is important for you to make plans before surgery for care at home. Many patients should expect to go directly home. Understanding your plan for discharge is important in the recovery process. You can expect help from your Joint Care Coordinator to develop a plan that meets your particular needs. Many patients should expect to be able to go directly home, as is usually best to heal in the privacy and comfort of your own home.

Some patients want to go to rehab facility (inpatient sub-acute rehabilitation) after their surgery. These are only used if there is a medical event related to surgery. Please keep in mind that most of our patients do so well that they do not meet the guidelines to qualify for sub-acute rehabilitation. Also keep in mind that insurance companies do not get involved in social issues, such as lack of caregiver, animals, etc. These are issues you will have to address before admission. Again, It is important for you to make plans before surgery for care at home after surgery.

The Social Worker and Case Manager will work with you, and your family, to set up the visiting nurse to come to the house within the first 24 hours after you get home. If needed, they will also set up physical therapy to come to your home, and help you get any equipment such as a rolling walker or 3-in-1 commode for home.

Caring for yourself at home

- Take your pain medicine at least 30 minutes before physical therapy.
- Slowly stop your prescription pain medication and go to a non-prescription pain reliever. Ask your physician for narcotic alternatives.
- Change your position every 45 minutes.
- Body Changes: You may have less of an appetite. Drink plenty of fluids to keep from getting dehydrated. Your desire for solid food will return.
- You may have difficulty sleeping, which is normal. While you are healing, try not to nap too much during the day so that you will sleep better at night.
- You will have less energy for at least the first month.

Pain medication that contains narcotics can make you constipated. Use stool softeners or laxatives, if necessary.

What if I live alone?

It is recommended to have somebody at home with you the first few days after being discharged home. Some patients find it easier to return home and receive help from a relative or friend, or plan to stay at a relative or friend's home for the first few days. Also keep in mind that insurance companies do not get involved in social issues, such as lack of caregiver, animals, etc. These are issues you will have to address before admission. Again, it is important for you to make plans before surgery for care at home after surgery.

Caring for your incision/wound:

- Caring for your wound after surgery: Because each patient is different, and each surgeon has their own preferences, please follow the instructions of your discharge nurse in the hospital. Don't forget to wash your hands before caring for your wound.

Important things to know:

• Signs of infection

- Increased swelling and redness at incision site
- Change in color, amount, odor of drainage
- Increased pain in knee
- Fever greater than 101.5 degrees

• Signs of blood clots in legs

- Swelling in thigh, calf, or ankle that does not go with elevation.
- Pain, heat, and tenderness in calf, back of knee or groin area.

NOTE: blood clots can form in either leg.

• To help prevent blood clots

- Perform ankle pumps
- Walk several times a day
- Take your blood thinners as directed

• Pulmonary Embolus

An unrecognized blood clot could break away from the vein and travel to the lungs. This is an emergency and you should **CALL 911** if suspected.

- Signs of a Pulmonary Embolus:
- Sudden Chest Pain
- Difficult and/or rapid breathing
- Shortness of breath
- Sweating
- Confusion

• Prevention of Pulmonary Embolus

- Prevent blood clot in legs
- Recognize if a blood clot forms in your leg and call your physician promptly

• Prevention of Postoperative safety and avoiding falls – Kitchen

- Do NOT get down on your knees to scrub floors.
- Use a mop and long-handled brushes.
- Plan ahead! Gather all your cooking supplies at one time. Then, sit to prepare your meal.
- Place frequently used cooking supplies and utensils where they can be reached without too much bending or stretching.

To provide a better working height, use a high stool, or put cushions on your chair when preparing meals.

Avoiding falls

- Pick up throw rugs and tack down loose carpeting. Cover slippery surfaces with carpets that are firmly anchored to the floor or that have non-skid backs.
- Be aware of all floor hazards such as pets, small objects, or uneven surfaces.
- Provide good lighting throughout your home. Install night lights in the bathrooms, bedrooms, and hallways.
- Keep extension cords and telephone cords out of pathways. Do NOT run wires under rugs, this is a fire hazard.
- Do NOT wear open-toe slippers or shoes without backs. They do not provide adequate support and can lead to slips and falls.
- Sit in chairs with arms. It makes it easier to get up.
- Rise slowly from either a sitting or lying position to avoid getting light-headed.
- Do not lift heavy objects for the first three months and then only with your surgeon's permission.



Outpatient Physical Therapy

Physical Therapy is a type of rehabilitation that helps save, develop and restore physical function that may be lost because of an injury, disease or other causes. It uses different therapies and exercises to make your healing faster.

The treatment plan focuses on preventing disability and pain, restoring function, help with healing, relieving pain and helping patients adjust to any functional limitations. Patients recovering from surgery can repair muscles and tissues by making them stronger and bringing back their movement. The ultimate goal is always the same: restore patient's quality of life and independence to the most possible.



Outpatient Occupational Therapy

Occupational therapy is a type of rehabilitation that helps patients rebuild skills to return to an independent, productive and satisfying life. It helps patients perform activities of daily living, such as mobility, eating, bathing, dressing and time management. Occupational therapy also helps patients prepare to return to work and to life within the community.



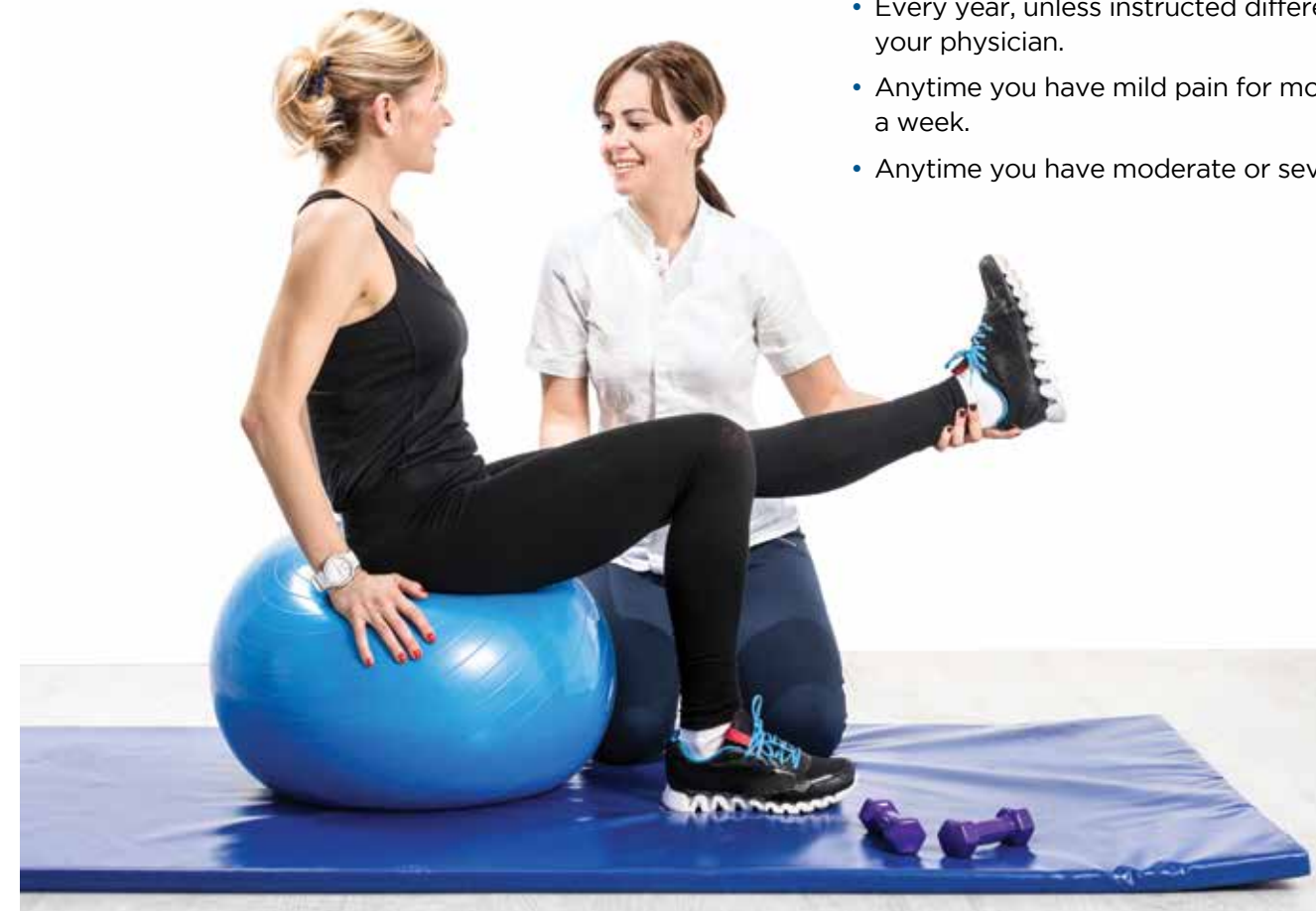
Following up with your surgeon

Over the past several years, orthopedic surgeons have discovered that many people are not following up with their surgeons on a regular basis. The reason for this may be that they do not realize they are supposed to, or they do not understand why it is important.

So, when should you follow up with your surgeon?

These are some general rules:

- After surgery as directed by your surgeon, average is 2-4 weeks.
- Every year, unless instructed differently by your physician.
- Anytime you have mild pain for more than a week.
- Anytime you have moderate or severe pain.



Exercise Appendix

Hip Replacement Exercises

Seated Arm Push-Ups

Goal: To strengthen your arms to help assist you getting out of a chair

1. Begin seated on a chair with arms, both feet touching the floor
2. Place hands on chair arms, straighten your elbows and lift bottom off of the chair
3. Hold for 1 second
4. Slowly lower your bottom back onto the chair
5. Repeat for 2 sets of 10 repetitions

NOTE: Use your arms, not your legs, to push your bottom off of the chair



Heel Slides

Goal: To increase flexibility of the hip and strengthen the hamstrings, the muscle behind your thigh

1. Begin laying on your back
2. Bend one knee while keeping your heel on the bed
3. Hold for 3 seconds
4. Slowly straighten your knee back to starting position
5. Repeat for 2 sets of 10 repetitions

NOTE: To allow the heel to slide easier, wear a sock or place a towel under your heel



Hip Abduction/Adduction

Goal: To strengthen the muscles on the inner and outer part of your thigh and hip

1. Begin laying on your back
2. Keeping your heel on the table and knee straight, slide your leg out to the side
3. Slowly slide leg back to starting position
4. Repeat for 2 sets of 10 repetitions

NOTE: Be sure to keep heel and knees pointing toward the ceiling throughout the exercise



Quad Sets

Goal: To strengthen the muscle on top of your thigh

1. Begin laying on your back or sitting on the floor with your pre-operative knee straight
2. Tighten the muscle on top of your leg while simultaneously pressing the back of your knee towards the floor
3. Hold contraction for 5 seconds then rest
4. Repeat for 2 sets of 10 repetitions

NOTE: You can place a small towel roll under your knee to add cushion



Glutes

Goal: To strengthen the buttocks muscles

1. Squeeze butt cheeks together
2. Hold for 5 seconds
3. Repeat for 2 sets of 10 repetitions

NOTE: Do not hold your breath when performing this exercise

Standing Knee Bends

Goal: To strengthen the hamstrings, or the muscles behind your thigh

1. Begin holding onto a sturdy chair or counter for support
2. Slowly bend your knee by lifting your heel towards your buttocks.
3. Slowly lower your heel back to the ground while straightening at your knee.
4. Repeat for 2 sets of 10 repetitions

NOTE: Keep an upright posture and avoid any forward or backward leaning throughout exercise



Standing Marching

Goal: To strengthen the hip and improve balance

1. Begin holding onto a sturdy chair or counter for support
2. Slowly lift your knee up towards the ceiling as if you were marching in place.
3. Alternate lifting legs towards ceiling
4. Repeat for 2 sets of 10 repetitions

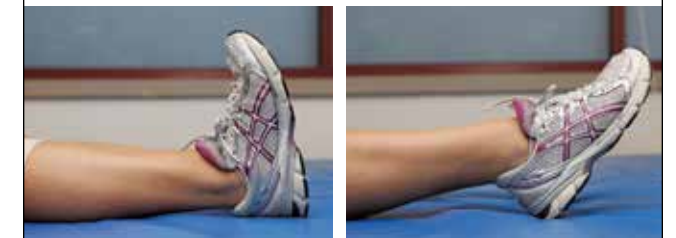
NOTE: Keep an upright posture and avoid any forward or backward leaning throughout exercise

Ankle Pumps

Goal: To strengthen and improve flexibility of the calf muscles while promoting blood flow to prevent blood clots

1. Point toes up towards ceiling
2. Point toes down to floor
3. Repeat for 3 sets of 10 repetitions

NOTE: Be sure to bend the whole ankle, not just the toes, while performing this exercise



Seated Long Arc Quads

Goal: To strengthen the quadriceps muscle, or the muscle that "extends" your knee

1. Begin sitting in a chair with both of your feet touching the floor
2. While keeping your thigh on the chair, straighten your knee by slowly kicking towards the ceiling
3. Hold this position for 5 seconds
4. Slowly bend your knee back to the starting position
5. Repeat for 2 sets of 10 repetitions

NOTE: Sit upright in the chair without bending your hip beyond 90 degrees. You may feel a stretch or slight discomfort in the back of your knee



Exercise Appendix (continued)

Knee Only

Hamstring Stretch

Goal: To increase the flexibility of your hamstring, the muscle behind your thigh

1. Begin seated on a chair with your post-operative leg propped up on a chair or firm surface
2. Keep your knee as straight as possible
3. Hold for 30 seconds
4. Repeat 3 times

NOTE: The stretch in the back of your knee should not be painful. Do not place weight on the top of your knee

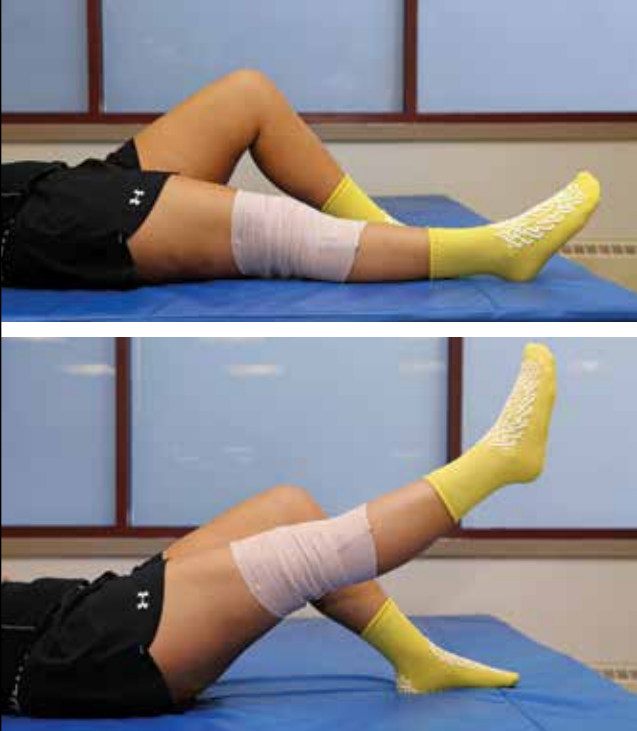


Straight Leg Raise

Goal: To strengthen the muscle around your thigh and hip

1. Begin laying on your back with your non-operative leg bent to 90 degrees
2. Keeping your pre-operative leg straight, lift your entire leg a few inches off of the floor
3. Hold for 3 seconds
4. Slowly lower your leg back onto the floor
5. Repeat for 2 sets of 10 repetitions

NOTE: The leg you are lifting should never go beyond the level of the bent knee



References

Westerdahl, E. (2015). Optimal technique for deep breathing exercises after cardiac surgery. *Minerva anesthesiologica*, 81(6), 678-683.

Westerdahl, E., Lindmark, B., Eriksson, T., Friberg, O., Hedenstierna, G., & Tenling, A. (2005). Deep-breathing exercises reduce atelectasis and improve pulmonary function after coronary artery bypass surgery. *CHEST Journal*, 128(5), 3482-3488.

Phone number page

Doctor's office number: _____

Joint Coordinator: _____

Hospital: _____

Primary Doctor: _____

Other: _____
