



# Hip & Knee Replacement Manual



This manual will provide you with information on what to expect before, during, and after surgery.

It is important for you to learn as much as possible about your surgery as it will help you to prepare as an active participant in your care.

Consider attending the Education Sessions in preparation for your joint replacement surgery. These education sessions provide an interactive means for learning about the surgery and how to be best prepared.

Please call the Joint Replacement Resource Centre at 204-926-1221 for information or to register for classes.

**If the information provided in this book differs from what your family doctor, surgeon, or orthopedic team advise you, please follow their instructions.**

**The Joint  
Replacement  
Resource Centre**  
Winnipeg Regional  
Health Authority  
331-1155 Concordia  
Avenue  
Winnipeg Manitoba  
204-926-1221

<https://wrha.mb.ca/joint-replacement-resource-centre/>

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## Introduction to Hip and Knee Replacement

### Types of Joint Disease

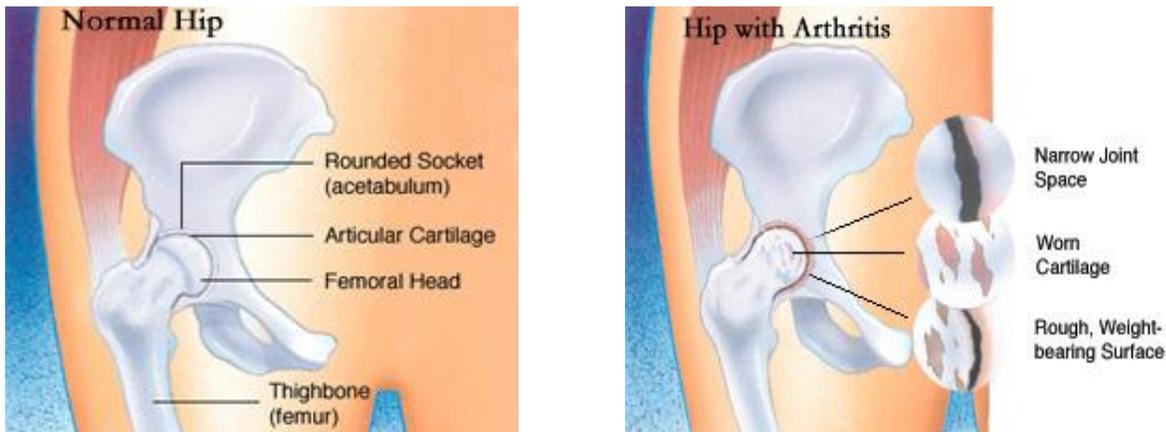
The most common cause of joint disease is Osteoarthritis.

**Osteoarthritis** is a disease that breaks down the cartilage that covers the ends of the bones. This cartilage provides cushioning to the joint. As the cartilage wears away, the ends of the bones become rough and the hip or knee may become painful and stiff.

**Rheumatoid Arthritis** is an inflammatory disease that affects the lining of the joints. Breakdown of the cartilage and bone is a result of chronic inflammation (swelling).

**Osteonecrosis** is death of the bone due to lack of blood supply (avascular necrosis).

### Hip Arthritis



### Knee Arthritis



As the pain in your hip or knee worsens, you tend to use your joint less and less. The result is a decrease in motion as well as loss of strength in the muscles around the joint. Range of motion is a term used to describe the amount of motion a joint can move.

## **Surgical Treatment (Joint Replacement)**

Joint replacement surgery will remove the parts of the joint that are damaged and replace them with new components that match the original shape of the joint. This will help to:

- ✓ ease your pain
- ✓ improve your joint range of motion
- ✓ correct deformity (e.g. leg length discrepancy)
- ✓ improve function such as walking, standing, dressing, bathing, etc.
- ✓ enhance your quality of life

## **Realistic Expectations of Joint Replacement**

Joint replacement surgery is one of the most common and successful surgeries. The majority of patients have complete or nearly complete relief of pain following a total hip or knee replacement.

The life expectancy of a total joint replacement (the new joint) is influenced by the amount of stress placed on the joint. Controlling body weight and adhering to the activity recommendations will increase the life of your joint. In general, more than 90% of hip and knee replacements should last at least 15 years.

The joint replacement components can be made of different types of artificial materials (ceramic, metal or plastic). The surgeon chooses the best type of artificial joint or prosthesis according to your age, the strength of your bone, the shape and condition of your joint, your general health, weight and activity level.

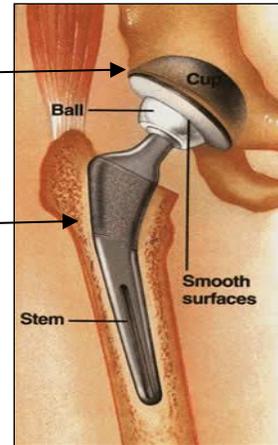
In general, the benefits (improvement in your quality of life) after total joint replacement outweigh the risks (the chance of that patient having a complication) for most individuals with severe arthritis. Most patients can expect many years of pain free function.

## **Hip Replacement Surgery**

In hip replacement surgery, the damaged bone and cartilage are replaced with ceramic, metal or plastic surfaces to restore hip movement and function. The artificial hip is called the prosthesis.

The total hip replacement (THR) prosthesis consists of 2 parts:

1. Acetabular component (cup) that fits into the pelvic bone.
2. Femoral component (stem) that fits into the femur or thigh bone.

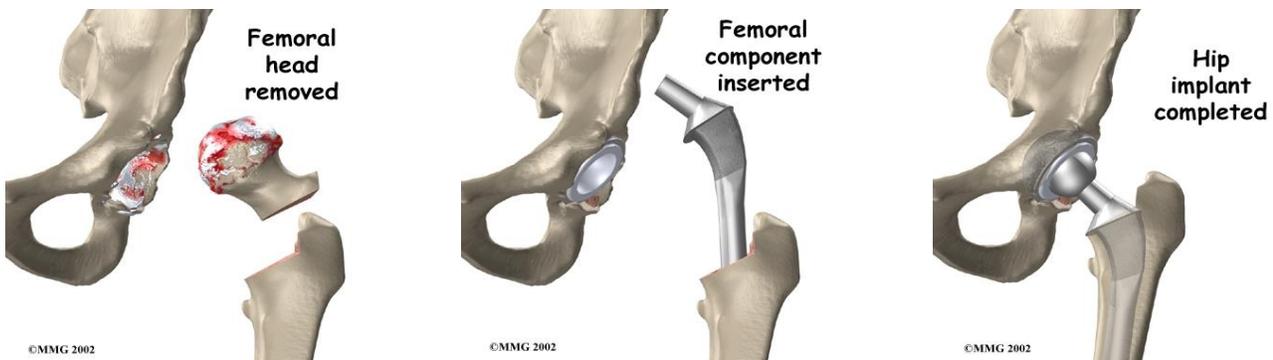


There are two ways in which your joint replacement may be held in place (fixed to the bone):

1. With bone cement.
2. Without bone cement. This uncemented method uses a roughened or coated metal surface that allows bone to grow onto it. Most hip replacements in patients with strong bone use the uncemented method.

### The Surgical Procedure for Total Hip Replacement

An incision is usually made over the top of the thigh bone (femur) measuring between 6-8 inches. The muscles that hold the hip in place are partially detached and the surgeon exposes the end of the thigh bone and the socket. The damaged cartilage and bone in the socket are cleaned away and the new cup is fixed in place. The ball at the end of the thigh bone (femur) is removed. The inside of the femur is prepared for the metal stem which is fixed in place. A liner is placed in the socket and the new ball is placed on the stem. The hip is put back in place and then tested for movement and stability. The wound is then closed. The surgery usually takes 45-90 minutes. You can watch an animated version of the hip replacement surgery “What is a Total Hip Replacement” on the WRHA Joint Replacement Resource Center’s webpage (<https://wrha.mb.ca/joint-replacement-resource-centre/videos/what-is-a-total-hip-replacement/>) if you would like more information.



## Bilateral Hip Replacement Surgery

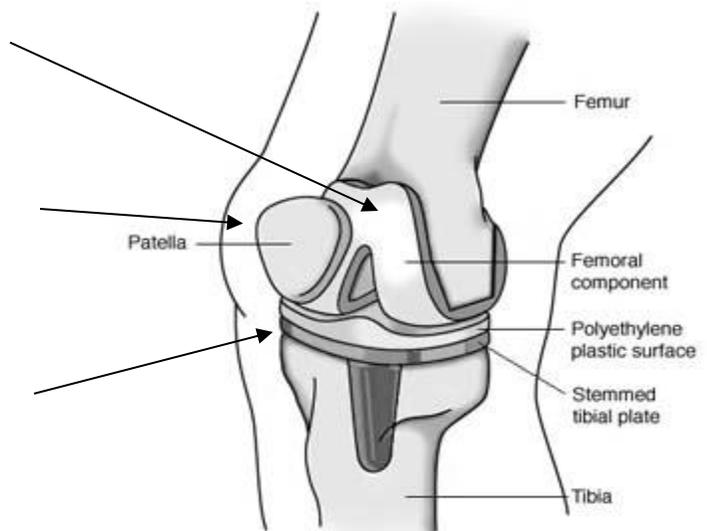
In some cases, arthritis affects both hips equally. Replacement of both hip joints can occasionally be done during the same operation. This is a longer surgery and requires more time in the hospital. There is more stress on your body with this type of surgery and additional risk, so it is only offered to patients who are physically fit and in good health. The benefit of this bilateral hip replacement is an overall faster recovery. There is only one hospital stay instead of two.

## Knee Replacement Surgery

In knee replacement surgery, the damaged bone and cartilage are replaced with metal and plastic surfaces to restore knee movement and function. Most of the knee replacements that are done today are cemented into place.

The Total Knee Replacement consists of three parts:

1. Femoral (thigh bone) component- metal replaces the weight bearing surface of the thigh bone and has a groove for the patella (kneecap) to move along.
2. Patella (kneecap) – a plastic button is attached to the back of the kneecap to allow better movement along the femoral component.
3. Tibial (shin bone) component – metal with a plastic (polyethylene) component attached, forms a smooth surface the femoral component can move on during movement of the knee joint.



## The Surgical Procedure for Total Knee Replacement

A tourniquet (tight band) is used around the upper thigh to prevent bleeding during this surgery. An incision is made over the front of the knee. The ends of the thigh and shin bones are exposed. Specialized cutting tools are used to remove small amounts of bone from the surface of the thigh and shin bones. This allows space for the metal and plastic components. An important part of the operation is to balance the knee ligaments and straighten any deformity of the joint. The knee components are then put into the knee and tested for movement and stability. The wound is then closed. You can watch an animated version of the knee replacement surgery “What is a Total Knee Replacement” on

the WRHA Joint Replacement Resource Centre's webpage (<https://wrha.mb.ca/joint-replacement-resource-centre/videos/what-is-a-total-knee-replacement/>) if you would like more information.

### **Unicompartmental Knee Replacement Surgery**

When only one part of the knee joint is damaged, such as the medial compartment (inner half of the joint), it may be possible to replace only that part of the joint. The procedure is similar to a total knee replacement, but only one part of the joint is resurfaced. Recovery time is generally shorter following this surgery.

### **Bilateral Knee Replacement Surgery**

When arthritis affects both knees equally, joint replacement of both knees is occasionally done during the same operation. This is a longer surgery and requires more time in the hospital. There is more stress on your body, therefore it is only offered to patients who are physically fit and in good health. The advantage to this is an overall faster recovery since there is only one hospital stay instead of two.

## **Revision (Re-do) Joint Replacement Surgery**

Revision surgery may be necessary due to failure of joint replacement components. Failure of the joint components is most commonly due to the original joint "wearing out" with time and use. Most modern joint replacements are expected to last at least 15 years or longer for most patients. This is influenced by how much stress is placed on the joint. Controlling weight and adhering to the activity recommendations will increase the life of your joint replacement.

In revision surgery, the affected original joint replacement components are removed and replaced with new ones. Revision surgery is generally more complex and has a higher complication rate than primary (first time) surgeries. To prepare for revision surgery, you will undergo screening for infection. If infection is present, two operations may be required; the first to clean out the joint and the second to put the final joint replacement in place. In this situation, your surgeon and health care team will explain the procedure in more detail and provide an individualized health care plan.

Follow-up visits with your surgeon after joint replacement surgery are important to allow early identification of problems should they arise. It is important that you attend these follow up visits.

## Complications of Joint Replacement Surgery and How to Prevent Them

Every surgery has potential complications. The risk of complications following joint replacement surgery is quite low. Certain factors contribute to increased risk of complications. Chronic illness such as diabetes, heart or lung disease, and obesity increase risk of complications. A complete evaluation of your health is required before your joint replacement to determine your fitness for surgery. This will be completed by your primary care provider and reviewed with the Preoperative Assessment Clinic (PAC). You may have the opportunity to discuss any concerns with the anesthesiologist or nurse during this appointment. If complications occur, they can prolong or limit your full recovery. The next section will outline complications related to joint replacement surgery and what you can do to prevent them.

**Anesthesia:** Most joint replacements are done under spinal anesthetic. A spinal involves the injection of medication into the fluid around the spinal cord through a needle in the back. This temporarily freezes the nerves so that there is no movement or feeling in the legs or hips. Spinal anesthesia may be given with other medications through the intravenous (IV) line that make you relaxed or sleepy (sedatives).

A general anesthetic is sometimes used for joint replacement surgery. With general anesthesia, a combination of medications are administered through the IV or inhaled so you are asleep and unconscious during surgery. Complications associated with anesthesia are rare. If they do occur, they may include low blood pressure, nausea, headache, or dizziness. The anesthesiologist will discuss the best choice of anesthetic for you and possible complications related to it.

**Infection:** After joint replacement surgery there is a chance of developing an infection. Often this is just a mild skin infection. In some cases, a more serious infection within the joint may occur, which could require prolonged antibiotic treatment or further surgery. Typically, an infection develops within the first two weeks after surgery. People at a higher risk for infection are those who are elderly, overweight, malnourished, have chronic illness or taking certain medications. How you can help prevent infections:

- ✓ Get your immune system strong by eating healthy foods before and after your surgery.
- ✓ Wash your hands frequently. Ask all your visitors to wash their hands.
- ✓ Carefully follow the instructions for care of your incision.
- ✓ Avoid people who are ill with a cold or infections.
- ✓ Maintain good oral health

If you suspect you have an infection (e.g. sore throat, infected cut, bladder infection, boils, etc.) a few days before surgery, you must notify your surgeon's office. Infections in other areas of the body can spread to the new joint.

Antibiotics are given in the operating room and after surgery to prevent an infection. Your surgeon may prescribe additional antibiotics post operatively if you develop signs of an infection. In some cases, other complications such as bladder infection or lung infection will occur as a result of surgery. These mild infections are treated with antibiotics and resolve quickly if identified early. It is important to let your surgeon know if there are any signs of infection.

**Lung Problems:** Complications of the lung can be serious. Fluid in the lungs or pneumonia may occur due to a general anesthetic and prolonged bedrest. To prevent lung complications after surgery it is important for you to:

- Not eat anything after midnight the night before surgery. Clear fluids might be permitted up to 4 hours prior to your scheduled surgery time. Any medications you were instructed to take the day of surgery may be taken with a small amount of water.
- Get up and move often. The physiotherapist will let you know when you are safe to get up and walk on your own after surgery. Change your position in bed frequently.
- Take 5-10 deep breaths and cough every hour that you are awake.
- Stop smoking! People who smoke are at a greater risk for lung complications.

**Blood Transfusion:** If excessive blood loss occurs, you may need to have a blood transfusion during or after your surgery. Excessive blood loss is uncommon but leads to anemia. Anemia means that the blood cells that carry oxygen to the body are decreased. Anemia can cause dizziness, weakness, shortness of breath, fatigue and nausea. When anemia persists, complications can arise. It is important to correct post-operative anemia. In some cases, a blood transfusion is required. In other cases, careful monitoring of anemia is appropriate. In order to avoid risk of blood transfusion, you can talk with your surgeon about alternatives to blood transfusion. All surgical patients are invited to contact Blood Management Service (BBM) to discuss risks of transfusion and potential alternatives. Call 204-926-8006 for more information or visit BBM at <https://bestbloodmanitoba.ca/>.

**Delirium:** Temporary confusion or agitation can occur after surgery, but it is more common in older adults. Some causes of delirium are lack of sleep, pain, infection, alcohol or drug withdrawal, low oxygen levels and side effects of some medications. It is important to let the health care team know if you have had delirium in the past. You should limit your alcohol intake for 6 weeks prior to surgery. Please discuss alcohol intake guidelines with your surgeon.

**Deep Venous Thrombosis (DVT):** DVT is more commonly known as a blood clot. Blood clots can develop in the deep veins of your legs during the surgery. The danger in having blood clots is if the blood clot became dislodged from the large vein in the leg and travelled to the lung which is then

called a pulmonary embolus (PE). Symptoms of PE are sudden onset of shortness of breath often with chest pain. This is considered a medical emergency. There are ways to prevent DVT. One or more of the following might be applicable to you:

- a) Mobilizing: Moving frequently helps to improve circulation so that blood is less likely to clot in the legs. You should try to move your legs around every hour while you are awake and walk frequently throughout the day.
- b) Sequential Compression Devices (SCDs): These are inflatable sleeves that are worn on the lower limbs and function with electricity. The sleeves inflate and deflate to promote blood circulation in the legs while in bed. They are typically worn for the first 24 hours post-operatively in the hospital.
- c) Blood Thinners: Blood thinners decrease the thickness of the blood which makes it harder for clots to form. The surgeon will determine which type of blood thinner is best for you based on your medical history and other medications you may be taking. You will receive a prescription for this from your surgeon.

**\*\*\* It is your responsibility to ensure that your prescription is filled and that you carefully read and follow all instructions for these medications. \*\*\***

**Cardiovascular Complications:** As with any type of surgery, there is increased stress on the body's circulatory system. High blood pressure, diabetes, obesity and advanced age are risk factors for increased cardiovascular complications. Getting in shape before surgery will improve your cardiovascular fitness and reduce the chance of complications. The overall rates of complications including heart attack, stroke, pulmonary embolism and deep venous thrombosis are less than 1.5%.

**Loosening of the prosthetic:** One or both parts of your joint may loosen with time. It is important to follow the activity guidelines and attend all follow-up appointments with your surgeon to improve the life expectancy of your new joint.

**Other Complications:**

| Hip Complications   | Knee Complications  |
|---|---|
| <p><b>Hematoma:</b> Bleeding (hematoma) may occur in the muscles around the hip joint following the operation. Signs of a hematoma include increasing swelling or bruising to the operative site. A hematoma can increase the risk of infection, but a hematoma often resolves over time. In some cases, a hematoma may require a trip to the operating room to drain the excess blood that has accumulated under the skin.</p> | <p><b>Swelling:</b> It is normal for knees to be slightly swollen, red and warm after surgery. This may last several months. This is different from infection which causes a sudden increase in pain, swelling and stiffness as well as fever and chills. It can take up to 24 months to reach the expected results of the surgery.</p>   |
| <p><b>Dislocation:</b> A hip dislocation occurs when “the ball comes out of the socket” following hip replacement surgery. The risk of this complication is quite low with the highest risk immediately following surgery as the tissues are healing around the new joint. A small risk is always present after this type of operation. The signs of dislocation include sudden, sharp, severe pain and a shortened leg.</p>    | <p><b>Nerve damage:</b> It is possible but unlikely that an artery, vein or nerve at the back of the knee is damaged during surgery. This can result in permanent numbness or weakness of the foot. Following surgery, it is common to have a small patch of numbness on the outside area of the knee. This happens because a small sensory nerve that supplies that area of skin is cut when the incision for the knee replacement is made. The numb patch will get smaller with time but usually does not go away completely. This is normal.</p> |
| <p><b>Different leg length:</b> While every effort is made to ensure the legs are the same length, in some cases one may be shorter than the other. This can be corrected with a shoe lift if required.</p>   | <p><b>Stiffness:</b> Common in the knee joint, especially if knees were stiff before surgery. It is important to do your exercises (see Appendix 1) even if you have stiffness. Manipulation (joint stretching) may be required 2-3 months after surgery if stiffness in the knee joint persists.</p>   |
| <p><b>Fractures:</b> The thigh bone may fracture (break) during insertion of the prosthetic joint. This is more commonly seen in revision surgeries. If this does occur, it is usually recognized during surgery and is treated immediately. If you have a fracture, there may be a period where you are not allowed to put all of your weight on your operated leg.</p>  | <p>Additional stiffness may come from the healing of the scar (adhesions). To reduce this risk, speak to your surgeon or physiotherapist to be provided scar management techniques.</p>   |

## Before Your Joint Surgery



The Joint Replacement Resource Centre/Prehabilitation Clinic

### The Joint Replacement Resource Centre: Education Classes

The Joint Replacement Resource Centre helps patients prepare for their orthopedic journey. As part of the process, you are invited to attend education classes through the Joint Replacement Resource Centre. Your surgical team encourages you to attend these classes. Virtual classes are offered as well.

*Please note, if you are planning to attend, you must pre-register by calling 204-926-1221.*

For more information please visit the website: <https://wrha.mb.ca/joint-replacement-resource-centre/>

### The Prehabilitation Clinic

The Prehabilitation Clinic is a multi-disciplinary program aimed at improving health and daily functioning of individuals preparing for a joint replacement surgery. If your surgeon feels you would benefit from a one on one consultation with a member of the Prehabilitation Team, a referral will be sent at the time of your consult appointment. Patients may also inquire regarding this service. The Prehab Clinic would contact you directly with an appointment date and time based on your surgeon's referral.

The Prehabilitation team includes:

- Nurse – Reviews medical history, provides pre-operative education and may address pain management or smoking cessation with individuals.
- Social Worker – Provides an opportunity to discuss emotional and social well-being and explore options for support including accessing community resources such as counseling services, income assistance programs and/or resources for housing and transportation.
- Registered Dietitian – Provides dietary counseling/support to optimize nutritional status.

- Occupational Therapist – Assesses function before surgery, home situation and external supports. May recommend equipment to maximize function and safety before surgery. Referrals may be made to other supportive programs in the community.
- Physiotherapist – Assess physical function and address deficits with an individualized home exercise program and or prescription of a mobility aid (cane, walker). Referrals may be made to community programs based on need.

## **Pain Management**

Joint pain is common in arthritis. It is important that your pain is managed before surgery. When your pain is well controlled you will be more active and stay in better physical condition. The amount of pain you experience can be affected not only by your injury or disease but also by muscle tension, worry, depression and even by the attention paid to the pain. The response to pain differs from person to person. The way it is treated can also be very different. For this reason, it is important you work with your primary health care provider and/or community pharmacist to best manage your pain.

## **Medications**

The following is a list of some of the pain medications which may be used to manage arthritis pain. Talk with your primary health care provider about the best option for you.

- Acetaminophen (Tylenol®) – Acetaminophen can be very effective in controlling chronic pain when taken regularly. Read the directions on the bottle carefully and take only the recommended amount.
- Anti-Inflammatory medications – Anti-inflammatory medications can also be very effective in managing pain. Some of the traditional anti-inflammatory medications include Ibuprofen (Advil®), Naproxen (Aleve®) and Diclofenac (Voltaren®). These medications need to be used with caution as they may cause discomfort and bleeding in your stomach. If you notice any sign of bleeding such as dark stool or spitting up blood, you need to stop the medication and tell your primary health care provider immediately. Celecoxib (Celebrex®) is an anti-inflammatory medication that may cause less stomach irritation. An anti-inflammatory medication should be used with caution if you have high blood pressure or kidney problems.
- Opioid medications – These are stronger pain medications which are rarely used if pain cannot be controlled with the options discussed above. Examples are Acetaminophen with Codeine (Tylenol #3®), Acetaminophen with Oxycodone (Percocet®), Morphine or Hydromorphone (Dilaudid®). They may have unpleasant side effects and need to be carefully monitored by your doctor. All opioid medications can cause constipation. Drink plenty of water and eat a diet high in fiber to prevent constipation. You may need to take a stool softener such as sennosides (Senokot®) to prevent constipation.

## How Will I Pay for These Medications?

You may require prescription medications at some time during your surgical journey. This may include medications to manage your pain prior to your surgery or medications taken during your recovery from surgery. One or a combination of private and provincial health plans may cover your medication costs. In the planning for your surgery, check on your insurance plans and coverage limitations. All Manitobans are eligible for Pharmacare. Costs for **approved** prescription medications will be covered once you have met your current annual deductible. For information on how to apply for Pharmacare or to determine your current annual deductible, visit: [www.gov.mb.ca/health/pharmacare/index.html](http://www.gov.mb.ca/health/pharmacare/index.html) or call Manitoba Health Provincial Drug Programs: in Winnipeg phone (204) 786-7141 or toll free 1-800-297-8099. Other government programs such as Employment and Income Assistance and Non-Insured Health Benefits (NIHB) may also provide medication coverage. Private plans such as Great West Life or Blue Cross may cover medication costs within the limitations of your contract. Please look into your own coverage and eligibility prior to your surgery.

## Non-Drug Strategies

Pain and relaxation do not occur together naturally. In fact, the body usually responds to pain (or an injury) by tightening muscles. Some patients also experience emotions such as frustration, anxiety and anger, which all tend to increase muscle tension further. The way a person responds to emotional stress can affect pain severity. It is important to break the cycle between muscle tension and pain. Relaxation exercises are one way to decrease muscle tension, reduce emotional stress and decrease pain.

There are different relaxation techniques. You can choose which one works best for you. Some of these techniques include diaphragmatic breathing, autogenic relaxation, imagery, meditation and progressive muscle relaxation. There is a wide range of online videos, apps, commercial books and CDs available to help you learn to practice these relaxation strategies. The Joint Replacement Resource Center also offers a Pain Management class which provides further information on these non-drug strategies.

In addition to relaxation, there are other techniques that can help with pain management. Some people tend to focus on their pain so much that it is not uncommon for their pain levels to increase. There are many strategies you can use to deal with a preoccupation with pain. These include distraction and balanced thinking. Please read more about these different techniques on the websites provided or this information may be discussed in detail with a qualified health care practitioner.

**Recommended Resources:**

[www.cpa.ca/docs/File/Publications/FactSheets/PsychologyWorksFactSheet\\_ChronicPain.pdf](http://www.cpa.ca/docs/File/Publications/FactSheets/PsychologyWorksFactSheet_ChronicPain.pdf)

<https://arthritis.ca/support-education/online-learning/managing-chronic-pain>

<https://www.aci.health.nsw.gov.au/chronic-pain/for-everyone/introduction-to-pain>

**Medical Cannabis**

Currently there is new research showing that the use of medical cannabis can be potentially effective in management of arthritis pain. Further research is needed on potential interactions of cannabis with other medications, as well as the risks and benefits. For more information on use of medical cannabis, please speak to your physician or refer to the following website:

<https://arthritis.ca/treatment/medication/medical-cannabis>

**Get Your Body in Shape**

To speed up your recovery, it is important to be in the best physical shape possible before your surgery. While waiting for your surgery, focus on building your strength and remaining as active as you possibly can!

Here are some suggestions for you to consider:

- Throw away the slogan “No pain, no gain” but keep the slogan “Use it or lose it!”
- Choose low impact activities such as walking, swimming, water aerobics, stationary cycling or chair aerobics to get adequate moderate intensity cardiovascular exercise. When exercising at this intensity, you should be able to carry on a conversation and not be short of breath.
- The Arthritis Society is an excellent resource for exercising with arthritis. Visit: <http://www.arthritis.ca/>
- Strengthen your upper body using light weights, resistive tubing/bands or even a can of soup. You will be using your arms and core muscles (muscles in your stomach and back) to help you with transfers (in/out of bed, on/off chair, in/out of vehicle) and to use a walker in the first few weeks following surgery. Strengthening these muscles before surgery is essential in order to have a smooth transition home from the hospital. If you are unsure how to start on your own strengthening program, you could speak to an exercise professional or private physiotherapist in the community for guidance. Call the Joint Replacement Resource Centre for more information about exercise programs.

- With any type of activity, it is important to start slowly and gradually increase the amount of time you are performing the activity. At the time of surgery, you should be performing a minimum of 20 minutes of cardiovascular exercise 3 times per week. If you are unable to perform 20 minutes consecutively, you can break it up into two 10-minute sessions throughout the day.
- Cardiovascular exercise helps to improve the fitness of your heart and lungs. Examples of cardiovascular exercise are walking, swimming, cycling. You also want to be working on the strength of your lower body including the muscles around the joint you will have replaced. If you are not presently working on strength-based exercise at the gym or at home, it is advised you start the exercises included in the Appendix 1. These exercises are divided up into the exercises you will perform immediately following your surgery (Post-Op) and the more advanced exercises you will learn during your rehabilitation after surgery. It is suggested you start with these exercises as soon as possible **before your surgery** to optimize your strength and flexibility. Optimal condition pre-operatively improves surgical outcomes. Practicing ahead of time will help you to become more comfortable with the exercises you will need to perform in the hospital. The goal for these strength-based exercises is that you will be able to perform 10-15 repetitions, 3 times per day (3 sets) starting immediately after surgery. This will be much more manageable if you were performing the exercises regularly before your surgery. When starting the exercises before surgery, you can start small and build up as your tolerance increases. It is a good idea to start with 5-10 repetitions once per day and then increase as tolerated.
- **2 Hour Pain Rule:** If you have pain for more than 2 hours following an activity or exercise session, you have done too much. Reduce the intensity of the exercise, the duration of the activity or the frequency it is performed until you are better able to manage your pain while including the suggested exercise.

## Healthy Eating for Healing

Healthy eating helps to prepare your body for surgery. Your body needs to be well nourished to heal the bones, muscles and skin that are affected by surgery. The nutrients from food provide your body with strength, energy and the ability to heal. People who are well nourished are less likely to develop infection.

In addition to adequate calories, there are several nutrients from food that are important to ensure adequate recovery from your surgery. These include:

- **Calcium** is needed to heal your bones and keep them strong. Good sources of calcium include milk, yogurt, cheese, and canned salmon and sardines (with the bones). Calcium fortified products such as tofu, orange juice and soy or rice milk are also an excellent way to increase

your dietary calcium intake. Smaller amounts of calcium are also found in beans and lentils, broccoli, bok choy and oranges. For most adults, aim for 1000-1200 mg of calcium daily.

- **Iron** is a very important nutrient that your body needs to build up red blood cells and prevent anemia. Before your surgery you will have a blood test for anemia. If you are found to be anemic (low hemoglobin in red blood cells), it may be suggested that you increase the iron in your diet prior to surgery. Good sources of iron include meat, fish, poultry, organ meats, canned oysters and clams, beans (legumes), tofu, some green leafy vegetables and enriched whole grains. Heme iron, the type of iron found in meat fish and poultry, is best used by your body. However, your body can use the non-heme iron in non-meat foods better when eaten with meat or foods rich in vitamin C (see examples of sources under Vitamin C). Remember that certain foods and beverages (coffee, calcium-rich foods) can decrease the absorption of iron along with certain over the counter medications (acid reducers e.g. TUMS).
- **Protein** is needed to maintain and increase your strength. It is necessary for healing therefore your protein needs increase after surgery. High protein foods include beef, pork, fish, poultry, eggs, milk and dairy products, soy milk, beans, nuts, peanut butter and tofu.
- **Vitamin B12 and Folate** are also important nutrients to maintain hemoglobin. Your primary health care provider may be able to provide you with more information if this is a concern for you. Foods containing vitamin B12 include fish, meat, poultry, milk and milk products, fortified breakfast cereals, soy or rice milk and meat substitutes. Good sources of folate include green leafy vegetables, dry beans and peas, fortified grains and citrus fruits and juices.
- **Vitamin C** helps heal wounds, fight infections and absorb iron. Good sources include citrus fruit and juices, peppers, tomatoes and tomato products, cantaloupe, strawberries.
- **Zinc** helps with collagen synthesis (forming) and wound healing and can be found in milk and meat products, nuts and oysters.

### Managing Your Weight

If you are carrying excess weight, talk to your primary health care provider about following a gradual weight loss program. Extra body weight can interfere with your recovery by delaying tissue healing, increasing fatigue and decreasing your activity tolerance. Gradual weight loss over a period of time, 2 pounds per week, is recommended. Keep in mind that “crash diets” do more harm than good. Gentle exercise may help your weight loss efforts and improve your sense of well-being.

Eating a well-balanced diet, such as that recommended in [Canada’s Food Guide](#), will help support your recovery. If you are concerned you have a poor appetite and do not get enough nutrients, seek advice from your health care provider or a dietitian about how you can improve or supplement your diet. It may also be helpful to add a multi-vitamin mineral supplement and/or a high calorie, high protein liquid nutrition supplement. You *can* improve what you eat right now.

For more information, please contact your primary health care provider or a registered dietitian. To speak to a registered dietitian, you can contact Dial-a-Dietitian at 204-788-8248 or toll free at 1-877-830-2892. You can also visit the Dietitians of Canada website for more information at [www.dietitians.ca](http://www.dietitians.ca).

## Smoking

Smoking significantly increases your risk of medical complications during and after surgery. As a result, your implanted joint may fail early. Modern joint implants require bone to grow onto the metal surfaces to provide stabilization. Bone growth is significantly reduced in smokers and can therefore lead to early failure. If you smoke, cut down or quit before surgery. For more information on quitting smoking contact your health care provider, Health Links (204-788-8200 or 1-800-315-9257) or the Smokers Help Line at 1-877-513-5333 or visit <https://mb.lung.ca/tobacco-vaping-information/> for more information.

## Prepare your Home

All patients will return home using a mobility aid (walker, crutches) after joint replacement surgery. Following your surgery, you cannot move around as you normally would, so it is a good idea to make some simple changes to make it easier and safer to manage at home. Below are recommendations you should consider **before** you come to the hospital for your surgery. For people who live in a rental unit, please discuss home modifications with your landlord for assistance.

### **Home set-up**

- ✓ Make sure there is enough space in hallways and between furniture to accommodate your mobility aid.
- ✓ Remove all tripping hazards (area rugs, cords and repair loose flooring).
- ✓ Make sure your home has good lighting, especially at night.
- ✓ Relocate regularly used items between your knee and shoulder height for ease of access.
- ✓ Move items stored in the basement that are used regularly to the main floor.
- ✓ **Install a railing or grab bar on ALL indoor and outdoor stairs where there are 2 or more steps to navigate.** You will be expected to have some form of support (rail, grab bar) available for all stairs **before** you come in for surgery. Arrange for sleeping accommodations on the main floor in case you are unable to manage the stairs after surgery.
- ✓ Arrange to have a firm chair with armrests. This will make it much easier to get on and off the chair after surgery. Do not sit on anything that has wheels or rocks to improve safety.
- ✓ Ensure your chairs and bed are the proper height (allow you to get on and off safely and with ease). If your bed or chairs are too low, they can be raised up on blocks. If your bed is too high you may be able to use a small step stool or platform to bring you up to the bed height.

- ✓ Put a high stool in the kitchen for countertop activities.

### ***Preparing for personal care***

- ✓ Choose loose fitting clothing.
- ✓ Wear shoes and/or slippers which have a non-slip sole, are closed at the heel and toe, and allow for swelling. Shoes that you can slip on or have elastic laces are ideal.

### ***Meal preparation***

- ✓ Prepare and freeze meals ahead of time so you only must reheat them after surgery.
- ✓ Stock up on non-perishable and easy to reheat frozen foods before surgery.
- ✓ If needed, look into different meal services that could be accessed after surgery e.g. Meals On Wheels
- ✓ Clear counters so that you can slide items along them.

### ***House and yard work***

- ✓ You will be able to do light housekeeping tasks.
- ✓ Arrange to have a family member or friend assist you with heavier household tasks. If family and friends are unable to assist you, consider hiring private services or accessing community resources (e.g. grocery delivery and home and yard maintenance).

### **Arranging Transportation**

If you are very limited with your mobility while waiting for surgery, you may be able to obtain a Parking Permit or be eligible for Transit Plus. The Manitoba Parking Permit Program is a program offered through Manitoba Possible, formally known as The Society for Manitobans with Disabilities (SMD). The permit does require a health care professional to fill out part of the form. The form and more information about the program are available at <https://www.manitobapossible.ca/parking-permits>. If you are only going to require this form after your surgery, you can have your health care provider in the community complete it or you can bring it to the hospital and ask your therapist to complete it on your behalf.

Winnipeg Transit Plus is a service of Winnipeg's public transit system that provides door-to-door transportation for people who are unable to regularly use the city's fixed route transit system because of a physical disability in accordance with the established criteria. People may benefit from this service before or after surgery and can complete the self-referral application without needing the assistance or input from a health care provider. If only required after surgery, you can complete and submit the form once your surgery date is known. If approved, they will issue you a registration number that will become effective after you have had your surgery. The form and more information on the service can

be found online at <https://info.winnipegtransit.com/en/winnipeg-transit-plus/winnipeg-transit-plus/>. If you are unable to drive or do not have someone to assist with transportation, it is important to arrange alternate transportation before your surgery.

### **How to Obtain Equipment**

In many situations people awaiting a joint replacement surgery require the use of a mobility aid before their surgery. The use of a walking aid (walker, crutches, cane) before surgery can help to decrease pain, increase tolerance and help to decrease stress to your other joints. Please speak with a community physiotherapist to be assessed for the appropriate mobility aid as you wait for surgery.

If you are having issues with self-care tasks (dressing, bathing, etc.) as you wait for surgery, you may benefit from the use of adaptive equipment (e.g. raised toilet seat, bath seat, sock aid). This equipment can help you remain independent, increase your energy and improve your safety. Please speak with a community occupational therapist to assess your needs.

Remember your health care provider or surgeon can refer you to see a physiotherapist and occupational therapist through the Prehabilitation Clinic (see page 13).

***You will be required to arrange your own walking aid for your return home from the hospital after surgery.*** If you are currently using your own walker or crutches, have someone bring them to the hospital as instructed during your Pre-Admission Clinic appointment. If you do not have these items, you will be assessed after your surgery by the physiotherapist and prescribed the appropriate walking aid.

### **How Will I Pay for This Equipment?**

Medical equipment associated with your joint replacement surgery is not covered through Manitoba Health or Pharmacare. It is an excellent idea to explore your own medical equipment coverage in preparation for your surgery. It is the patient's responsibility to obtain all prescribed equipment for their recovery.

If you are covered under Non-insured Health Benefits (NIHB), please bring your 10-digit treaty status identification number with you to the hospital and your therapist can help to arrange for your equipment. If you are receiving Employment and Income Assistance, you may be eligible for coverage of the prescribed equipment after surgery. Please bring your case worker's name, contact information and case number to the hospital.

Many insurance plans (Blue Cross, Manulife, Great West Life, etc.) and third-party payers (Veterans Affairs, WCB, MPI) cover part or all the cost of the medical equipment if recommended by a health care professional. Check with your insurance plan before your surgery to find out what is covered and who (physiotherapist, occupational therapist, surgeon) would need to sign the equipment prescription for your insurance claim. Alternate lower cost options for equipment in the community could include garage sales, online sources (Kijiji, etc.), thrift stores, and seniors' centers/legions. If you are obtaining equipment through these means, ensure the equipment is in good condition and suitable for your weight and height.

### **Will I Need Help at Home?**

Before you come to the hospital it is important to identify a support person who will be available after surgery as required. A few points to keep in mind:

- You may require help with shopping, meal preparation, housekeeping and sometimes personal care.
- You will be assessed by a physiotherapist and occupational therapist during your hospital stay who may recommend Home Care services if required. If you feel you would require Home Care services prior to surgery due to your level of pain or functioning, you can contact Home Care Central Intake directly at (204) 788-8330.
- Arrange for someone to look after your home while you are in the hospital. This may include watering plants, caring for pets and picking up mail.
- Cancel or reschedule any services you do not need while in hospital.
- Have your ride home from the hospital arranged in advance. ***Discharge times can vary throughout the day. There is no set day of discharge. Average length of stay is 1 to 3 days however, you may be discharged home earlier if you are assessed as safe to go home!*** If family or friends are unavailable to help, you will need to contact a private agency. Make sure the vehicle has enough room for you to sit comfortably and safely in the front passenger seat.

It is important to remember most patients return home independently after surgery without requiring support. However, identifying a person who is available after surgery will decrease your anxiety if support is required.

### **Pre-Operative Assessment Clinic Appointment (In-person visit or phone call)**

In the weeks prior to surgery, you may hear from the Pre-Operative Assessment Clinic (PAC), at the hospital where you will be having surgery. The purpose of this appointment is for the surgical team to review details relevant to your surgery. If attending in-person, please bring:

- ✓ All medications that you are currently taking, in their original containers, including any drops, inhalers, insulin or ointments.
- ✓ Magazine/book/device and money for a snack/drink – the visit may be 1-4 hours in length!

During this appointment, you may speak with a nurse, anesthesiologist, physiotherapist and occupational therapist.

\*\*\***Please bring** your Total Joint Replacement Checklist (Appendix 2) to your PAC appointment. The checklist can be removed to help guide you on the day before surgery and when preparing what to bring to the hospital.

\*\*\* If you have a new illness (cold or flu) very close to your surgery call the PAC and let them know.

### **During Your Hospital Stay**

When you come to the hospital the day of surgery, you will need to report to the admitting department. They will need to see your health card. Once admitted, you will be directed to the Day Surgery area. You will be asked to change into a hospital gown, removing all clothing and jewelry. The nurse and anesthesiologist will assess you and an intravenous (IV) will be started. Visitors may or may not be allowed during this part of your stay. The hospital can inform you on any visitor restrictions. You will then go into the operating room.

#### **In the Operating Room**

You will receive an anesthetic (usually a spinal). The anesthetist may also give you sedation to make you relaxed and sleepy. Most people do not remember the operating room as the sedation affects your memory. The surgery usually takes 45-90 minutes. You will wake up in the recovery room and remain there for close monitoring for, typically, 1-3 hours. An X-ray *MAY* be done at this time to make sure the new joint is in correct position. Once you have recovered from the anesthesia, you will be taken to your hospital room.

#### **Post-Operative Care**

- *Bandage* – There will be a bulky bandage over your surgical site. This dressing is usually left on for a day or two to allow the incision to heal before the dressing is changed to a reduced strip bandage over the incision. After that, the bandage will be changed as needed during the hospital stay.
- *Intravenous* – You will get fluids through an intravenous (IV) line. This will remain in place until you are finished IV antibiotics and are eating and drinking well.

- *Monitoring* – A nurse will check your temperature, blood pressure, breathing, heart rate and monitor the circulation in your leg frequently.
- *Deep Breathing and Coughing* – To help clear your lungs and prevent pneumonia, you should take 5-10 deep breaths and cough every hour you are awake.
- *Positioning and Turning* – You will be helped to turn and position in bed. This will be done frequently to prevent problems with your skin and breathing.
- *Diet* – Some patients are on a clear fluid diet for their first meal, while others receive a standard diet following surgery. This will be determined based on the hospital site.  
Focus on drinking fluids regularly as your appetite may be decreased, and you should try to eat as soon as you can. If you feel sick, please tell your nurse so it can be treated.

### **Pain Management after Surgery**

Controlling your pain is a very important part of your recovery. While every effort is made to minimize your pain, it is normal to experience discomfort after surgery.

**\*\*\*\* IMPORTANT: It is important to remember that the medications and means by which these medications are provided are dependent on the site of your surgery as well as your individual medical history and pain levels. This section is providing information on the different techniques and medications used for information purposes only. \*\*\*\***

#### ***How will my pain be managed after surgery?***

The management of your pain will start before you enter the operating room. The anesthesiologist and surgeon will decide what is best for you. This will likely involve a combination of medications. Some medications may be injected directly around your new joint, while others may be given orally (by mouth), or intravenously (through the IV). Pain pumps are very rarely used in the management of post-operative pain. These include continuous epidurals, and patient controlled analgesia (PCA) pumps.

All these treatments are safe and very effective in controlling pain. These will be explained to you in more detail by the anesthesia team depending on which method of pain control is determined to best suit your needs.

#### ***What is an injection around the joint?***

Several medications can be combined and injected around the joint during surgery. This can give excellent pain relief for up to 24 hours after surgery.

#### ***What oral pain medications (pills) will I be on?***

The anesthesiologist will decide which medications are best for you. Once you are on the ward, you will be assessed by your nurse regularly and may be assessed by the pain service. At this time, medications will be explained to you and adjusted if needed. If you are already on pain medication before surgery, these may need to be increased or changed to meet your needs after surgery.

The medications most often given are:

- Sustained release opioids (like Hydromorph Contin® or Oxyneo®) – These medications are given regularly in the morning and in the evening. They are designed to release pain medication into the blood stream over an 8-12 hour period allowing for long acting pain relief.
- Immediate release opioids (like Hydromorphone or Oxycodone) – These medications are given when you need extra pain relief in between the long acting doses. **YOU MUST ASK YOUR NURSE FOR THESE PAIN MEDICATIONS.** These short acting medications will last 4-5 hours, but you can have them every few hours as needed.
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDS) (like Celecoxib, Diclofenac, Naproxen) – These medications are anti-inflammatories and may be given regularly.
- Gabapentin – This medication is used for neuropathic (nerve) pain and may be given regularly up to three times per day.
- Percocet® (acetaminophen and oxycodone) – This medication may be given every four hours as needed.
- Acetaminophen (Tylenol®) – This medication can be given every four to six hours (either regularly scheduled or as needed).

Smaller doses of a variety of medications controls your pain better and has fewer side effects than if you just took one medication in a larger dose. Long acting pain medication along with Celecoxib, Gabapentin and Acetaminophen keeps a constant level of pain medication in your body. This is especially important at night when trying to sleep. If you are still not comfortable, please ask your nurse to give you extra (short acting) pain medications.

### ***What is the Pain Scale?***



The pain scale helps you keep the health care team informed of how well your pain is being controlled. You will be asked to give your pain a number on a scale from zero to ten. Zero being no pain and ten being the worst pain you could ever experience. By rating your pain with a number your health care team knows how well your medication is working and if any changes need to be made.

There are several reasons why keeping your pain under control is important. Good pain control:

- ✓ Makes you feel better
- ✓ Allows you to sleep better
- ✓ Allows you to walk and do your exercises
- ✓ May reduce the risk of complications after surgery

Pain medications can have side effects such as:

- Nausea
- Itchiness
- Constipation
- Drowsiness
- Disorientation

Please let your nurse know if you are having any of these side effects.

### ***When should I ask for the extra pain medications?***

Keep in mind you must ask for your short acting pain medication. Do not wait until the pain becomes severe before taking extra pain medication. By taking pain medication every few hours, some medication from the last dose is still working and this gives the new dose time to take effect. Pain is much easier to control if it is managed before it becomes severe. Our goal is to keep your pain at an acceptable level, so you can do your exercises, get up in a chair and walk with assistance.

### ***Will I get addicted to these pain medications?***

Research shows that addiction is uncommon in people who take pain medication short-term, for a painful condition. If you have a previous history of substance abuse (alcohol or drugs), discuss this with your care team so that your recovery can be monitored. Also, due to the *POTENTIAL* addictive nature of these medications, please store your medications in a safe and secure place.

### ***Can I stop these medications suddenly?***

When a person takes certain types of pain medications for a week or longer, their body may adapt to these medications. If they suddenly stop taking the medication, some people may experience withdrawal symptoms such as headache, sweating and nausea. Withdrawal symptoms do not indicate an addiction but are potential side effects of opioid medications. These symptoms can be prevented by slowly reducing the dose of the drug over several days instead of stopping suddenly. As your pain decreases and your body heals, you will no longer need as much pain medication. Decreasing the amount of pain medication you take every day or every couple of days, can prevent the withdrawal symptoms. This can be done by taking 1 less pain pill every day or every couple of days until you are off all the pain medication. Weaning off pain medications once you are discharged should be discussed

with your surgeon or community pharmacist. If you have pain from other medical conditions, you should discuss the control of this pain with your primary health care provider.

### **Getting Moving**

Most surgeons want their patients up and moving as soon as possible after their surgery. Therefore, the ward staff will likely get you up on the day of your surgery. This could involve getting up to the bed side chair or walking a short distance. Most patients will be walking as tolerated with assistance by the first day after surgery. The physiotherapist will also teach you how to move in bed, get in and out of bed and how to use your walker or crutches safely. Each day the distance you walk should increase and you will require less assistance. Before leaving the hospital, the physiotherapist will review stair management based on the number of stairs you require for your discharge home. It is normal to feel dizzy, nauseated or even lightheaded the first few times you are up. It is important to tell the nurse or therapist if you experience these symptoms.

### **Discharge Home**

You will be ready to return home when:

- ✓ You can manage all your medications for discharge.
- ✓ You can manage all transfers safely (on/off a chair, in/out of bed, on/off a toilet, in/out of a tub/shower).
- ✓ You can dress yourself with minimal help or by using dressing aids.
- ✓ You can walk the distance and perform the stairs you need to manage in your own home.

*\*\*\*There is no longer a set length of stay after joint replacement surgery. Once the above goals are met, you will be discharged home.*

### **Exercise**

After your surgery you are not as active as you normally would be. For this reason, it is important to do your foot and ankle exercises (move your feet up and down at your ankles) to improve circulation and prevent blood clots from forming in your legs. Do a minimum of 10 foot and ankle exercises every hour you are awake. With less activity you also tend to take shallow breaths which could lead to a chest infection. Remember to take 5-10 deep breaths and cough.

The physiotherapist will review the exercises with you following surgery. Do not be surprised if you have difficulty with the exercises initially. Overtime, with healing and consistency, the exercises will become easier. The exercises should be completed 2-3 times per day. The full Hip and Knee Surgery

Exercise Program is found in **Appendix 1**. This will include your **Basic Post-Op Exercises** (starting immediately after surgery) **Intermediate** and **Advanced Hip & Knee Exercises**.

Remember – Return to activity must be done gradually. Listen to your body and modify as needed.

### **Managing Pain and Swelling**

Pain and swelling of the operated area and into the lower leg is normal after surgery. Both can be managed by doing the following:

- **Elevating your leg**
  - Lying: support the entire length of your leg on pillows so that your heel is above the level of your heart.
  - Sitting: support your leg using a foot stool, ottoman etc.



- **Cooling your joint**
  - Ice: 10-15 minutes every 2 hours using a barrier between the ice and skin.
  - Cooling/Cryotherapy Unit: This unit circulates cool water through a pad applied over your joint. This is not a mandatory and can be discussed with you by your health care team at the hospital.

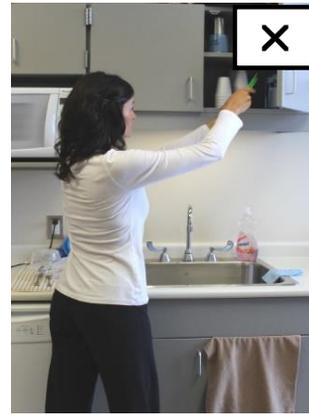


## Hip Precautions/Movements to Avoid

After a hip replacement the muscles and tissue around the hip take time to heal. To protect yourself from the possibility of dislocating your new hip your surgeon **may** require you to avoid 3 movements for **up to** 3 months following your surgery. These precautions are briefly outlined below and will be reviewed with you in more detail during your hospital stay, if applicable. If you do not have hip precautions, you may still benefit from equipment and the modified techniques shown below due to post-operative discomfort and stiffness.

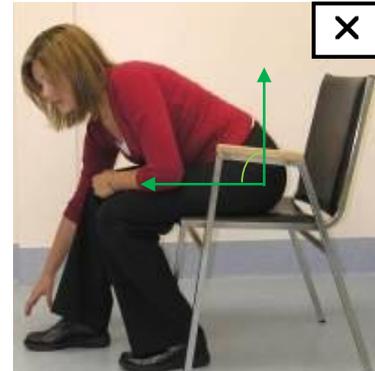
### **1. Do not twist your body or turn your operated leg inward.**

All movements should be done like a “robot” with your shoulders in line with your feet. You should not twist your upper body over planted legs.



### **2. Do not bend your hip past 90°**

The 90° angle considers the trunk position relative to your thigh position. You are closest to the 90° angle when sitting. To avoid breaking this precaution make sure your knees are not higher than your hips and do not bend forward from this position.



### **3. Do not cross your legs at the knees or at the ankles.**

Do not let your operated leg cross the midline of your body. A general rule to remember is to keep your feet at least shoulder width apart.



## Activities of Daily Living after Joint Replacement Surgery

### Getting Into Bed

1. Sit at the edge of the bed.
2. Use your arms to pull yourself back along the surface of the bed. You know you are far enough back when the crease of your knees hits the edge of the mattress.
3. Remain sitting and begin turning your body into the bed, keep your arms behind you for support as you slide your legs into the bed. You can use a cane (as shown) or a belt/flat sheet to help lift your surgery leg onto the bed if needed.



### Positioning in Bed

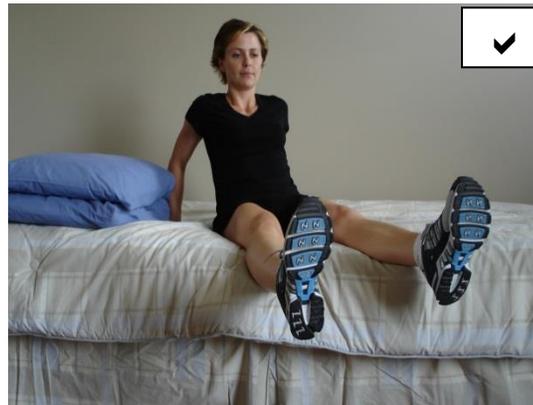
- If you want to lie on your side, use a pillow between your knees for comfort. Hip patients may require more support extending from the upper thigh to feet if discomfort is felt along the line of the incision.
- Consider using lightweight bedding for ease of positioning.



***\*Hip patients: Check with your surgeon about when you can sleep on your operated side. This position may be restricted for up to three months.***

## Getting Out of Bed

1. Push yourself up on your elbows and then up to your hands as shown below.
2. Slowly start sliding your legs over to the side of the bed.
3. Push yourself to the edge of the bed with your hands.
4. Push yourself up to standing.



*\*Hip Patients: If you have “Hip Precautions” further detail regarding getting in and out of bed and positioning will be reviewed with you in the hospital.*

## Getting on and off a Seated Surface

### ***Sitting down***

1. Back up until you feel the surface against your legs.
2. Slide your surgery leg out in front of you.
3. Reach back for the armrests one hand at a time.
4. Slowly lower yourself to the surface and push yourself back so you are fully seated.



### ***Standing up***

1. Slide your hips to the front of the chair. You may want to slide your surgery leg out in front of you for comfort.
2. Place your arms on the armrests.
3. Slowly push yourself to a standing position bringing your operated leg underneath you. Do not use your walker to pull yourself up.
4. Once you are standing and have your balance, place one hand at a time on the walker.

**Tips:**

- ✓ If a chair is too low, add a firm foam cushion or raise the furniture up from underneath with furniture risers to increase the height.
- ✓ When sitting, your feet should touch the ground and your knees should be at or lower than the height of your hips for ease of getting up.
- ✓ When possible, sit on a firm chair with armrests. This will make it easier for you to sit down and stand up.
- ✓ Do not sit on anything with wheels/casters.

**Getting on and off the Toilet**

- To get on and off the toilet, use the same procedure as getting on and off chair. Be sure to use any equipment prescribed to you by the occupational therapist.

**Bathing/Showering**

If you have access to a walk-in shower, you will likely not require any equipment to manage independently once you have been given the clearance to shower. If you will be showering in a tub environment, you may require the use of a bath seat and/or grab bars to help you get into the tub. This will be assessed for you during your hospital stay. Be sure to use any equipment prescribed to you by the occupational therapist.

**To get into the tub:**

1. Back up to the side of the tub with the bath seat behind you.
2. Reach back for the bath seat and/or grab bar.
3. Lower yourself down onto the bath seat. Push yourself back onto the seat.
4. Lift your legs over the side of the tub.
5. Reverse this method to get out of the tub.

**Tips:**

- ✓ Adjust the water temperature before you get in. **\*Hip Precautions** (if applicable): You cannot bend forward in the seated position to adjust the taps.
- ✓ Use a long-handled sponge to reach your legs and feet.
- ✓ If you have shower doors, the panels may need to be removed temporarily to allow for this transfer. You can use a tension rod to hang a shower curtain.

**Dressing**

- Dress your surgery leg first and undress it last.
- Use a reacher or dressing stick for putting on your underwear and pants.
- Use a sock-aid for putting on socks.
- Use a compression stocking aid for putting on compression stockings if required and a dressing stick to remove the stockings.
- Use a long shoehorn for putting on shoes and taking them off.



## Home Care

The need for Home Care will be determined during hospital stay once assessments with the occupational therapist and physiotherapist are underway. Home Care input is based on your level of independence and safety with functional activities such as dressing and transfers as well as level of support from your family/friends you will have available at home.

## Driving a Vehicle

If have had a right hip or knee replacement or drive a standard vehicle, do not drive until approved by your surgeon. For both right and left joint replacements, **DO NOT DRIVE** if you are still taking narcotic pain medication.

## Getting in and out of Vehicles

1. Move the seat back as far as it will go and recline slightly.
2. Back up with your walking aid until you feel the edge of the seat against the back of your legs.
3. Hold onto the back of the seat and the dashboard for support. Do not hold onto the door as it may move.
4. Sit down on the edge of the seat. Lean back and slide yourself toward the middle of the vehicle.
5. Bring your legs into the vehicle one at a time and turn your body.
6. To get out of the vehicle, reverse the procedure.

### **Tips:**

- ✓ Try a plastic bag on the seat to assist with turning. Remember to remove the plastic bag once you are positioned in the vehicle.
- ✓ Before getting in, have the seat reclined and pushed back to allow for more space.



## Walking

Immediately following surgery, most patients use a walker with 2 wheels.

When using a walker:

1. Advance the walker forward.
2. Step forward with your surgery leg to the middle of the walker.
3. Lean through your hands and then step to the middle of the walker with your non-surgery leg.
4. As your pain decreases, you can progress to a normal walking pattern using the walker as tolerated.



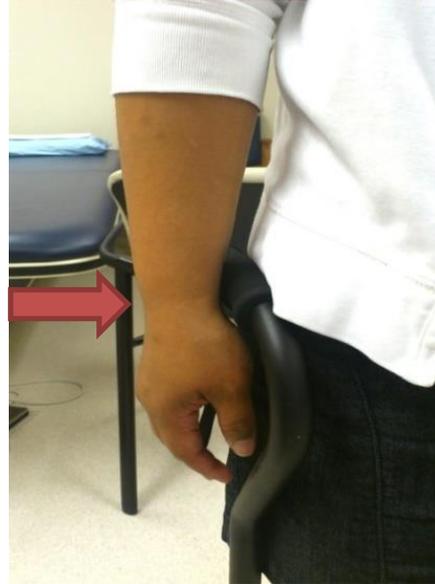
If you would prefer to use a 4-wheel walker or crutches, this would be assessed in the hospital before discharge to ensure this option is safe for you.

## Mobility Aid Progression

Most people will continue to use the walker or crutches for 1-4 weeks after they leave the hospital as it will provide support to your new joint, improve balance and reduce the risk of falls. You may choose to use a cane as part of your recovery. Signs you are ready to progress to a cane include:

- ✓ You can stand and balance without the walker
- ✓ You can place full weight through your new joint
- ✓ You are putting much less weight through your hands when using the walker

When using a cane, always hold the cane in the hand **OPPOSITE** to the surgery leg. The cane should be the same height as your walker. You can ensure it is the right height by standing with the cane 6 inches out from your little toe. Standing tall (with good posture) relax your arms at your side. The top of the handle of the cane should be at the level of the crease on the inside of your wrist (where you wear your watch).



## Stairs

When using stairs following joint replacement surgery, you should have railing or a grab bar for support where there are two or more steps. If 2 railings are available and you can reach both comfortably, use both rails. If 1 rail is available, you will hold the rail with one hand and use a cane or a crutch in the other hand for support.

### *Going Up*

- Place the non-operated (good) leg up on the stair first. Follow with the operated leg using the cane and rail for support.



### *Going Down*

- Place the cane or crutch on the step below and then follow with the operated leg stepping down. The good leg will come down last using the cane and rail to support the operated leg.



**REMEMBER:** *UP with the good, DOWN with the sore*

You will be able to return to a normal stair climbing pattern as your strength, range of motion and balance improve.

### **Bilateral Joint Replacements**

If you have had both hips or knees replaced, the above strategies will work for you, but may take more time to accomplish independently. It is very important to have adequate upper body strength to be able to lift your body weight off your chair or bed to ensure you will be able to manage these movements after surgery. Please practice these techniques at home before surgery to ensure your furniture (chairs/bed) is at an adequate height to make these transfers possible. If you have any concerns about the heights of furniture or managing these transfers, please discuss them with a therapist at the Prehabilitation Clinic, in the community, or at your PAC appointment.

### **Transporting Items Around Your Home**

After surgery you will be using a walker (most often a two-wheel walker) or crutches for support during walking. This means you will not have your hands free to transport items such as your meals, a phone, reading materials, etc. To help you transport these items, try the following:

- ✓ A walker basket or tray can be obtained from a medical vendor and attached to the front of your walker. In some cases, a small bag or pouch could be attached to the walker to carry **LIGHTER** items.
- ✓ A fanny pack could be used to carry small items. A backpack may be useful for larger items i.e. groceries, laundry, books.
- ✓ Wearing an apron or clothes with pockets is helpful.
- ✓ Use covered plastic containers or a travel mug to transport food or drinks.

## **After Joint Replacement Surgery**

### **Care of Your Incision**

*Incision Healing* – Keep the incision clean and dry. Do not apply ointment or lotion to the incision until the scar is completely closed. Increase your intake of foods high in protein and vitamin C.

*Changing the Bandage* – Your bandage should remain clean and dry. Leave the bandage on until your follow-up appointment for staple/suture removal. If the bandage becomes wet or soiled, it should be changed. If your incision has drainage on discharge, the nurse will give you specific instructions to follow.

*Staple Removal/Incision Healing* – Staples will be removed on your first follow-up appointment at approximately 10-14 days after surgery. If a different closure is used (sutures or glue), the incision healing will be checked at this initial appointment. Information regarding this appointment will be provided on discharge from hospital. For those who live outside the city, this follow up may occur with your family doctor or clinic nurse.

*Taking a Shower or Bath* – Your hospital team will provide instructions on how soon you are able to shower based on the closures used (staples, sutures versus glue), bandage provided and incision healing. Please check with your surgeon regarding how soon you can get to the bottom of the tub for bathing.

*Signs of an Infection* – Inspect the area around your incision daily as best as possible. Do not remove the bandage to do this. If you notice any of the following signs of an infection, you should call your doctor immediately:

- Increasing pain in the joint that is not relieved with rest, elevation and pain medications.
- Redness, swelling and warmth to the incision.
- Yellow, cloudy, or foul-smelling drainage from the incision.
- Fever, chills or flu-like symptoms.

*Signs of a Hip Dislocation*- If a dislocation occurs, you will need to come into the hospital to have your hip put back in place. This can usually be done without opening the hip surgically. After the joint is put back in place, you may require a brace to help stabilize the area for a few months.

## **Pain Management**

It is normal to have pain after surgery. As time passes, the amount and intensity of the pain you are experiencing will decrease. It may take up to 6 months before all the pain and swelling is gone.

When you are ready for discharge, a decision will be made in discussion with the surgeon regarding the medications necessary for you to control your pain at home.

### ***Tips for Controlling Your Pain:***

- Do not wait until the pain is very bad before taking your pain medication.
- Take your pain medication a minimum of 30 minutes before you exercise or do any prolonged activity.
- Elevate your leg and apply an ice pack to the hip/knee for 10-15 minutes every 2 hours as needed. A cooling unit may be suggested following knee replacement and less commonly hip replacement in place of an ice pack initially. The cooling unit can be used regularly throughout

the day for longer periods as suggested by your therapist or surgeon. Try applying the ice pack or cooling unit following exercise to help manage inflammation (swelling).

- Plan time for relaxation and enjoy hobbies to reduce pain.

## **Swelling and Blood Clots**

Swelling of your foot and leg is normal after surgery. Avoid sitting with your leg down or standing for long periods of time as this will increase the amount of swelling in your leg. Change positions frequently and go for short walks. Elevate your feet and legs when at rest. Continue with the foot and ankle exercises described to you by your physiotherapist and/or nurse and increase your activity as tolerated.

### ***Signs of Blood Clots***

You should seek immediate medical assistance if you experience the following symptoms as they may indicate a blood clot and require treatment:

- ! Increased pain, swelling, redness and tenderness of the leg ***that does not improve with rest and elevation.***

If the clot has moved to your lungs or heart, you will experience the symptoms below. This should be treated as a ***medical emergency and you should go to the nearest emergency department or call 911:***

- ! ***Sudden sharp pain or tightness in your chest or shortness of breath.***

### ***Blood Thinners***

The risk for blood clots is the highest in the first month following surgery. For this reason, most patients will be required to continue with blood thinners for this time period. The specific medication and directions regarding how to take this medication will be on the prescription provided by the doctor.

### **Constipation**

This is very common after surgery. Constipation can be caused or worsened by several factors: opioid pain medication, lack of activity/exercise/movement, diet changes, inflammation, stress, anxiety, depression, dehydration, and underlying medical conditions. It is important to recognize constipation and address it as soon as possible.

It is always better to prevent constipation after surgery, rather than treat it after it has occurred. Here are some suggestions to optimize your bowel health, so you can avoid as much discomfort as possible:

*Medications:* Your surgeon may prescribe a laxative or stool softener to take along with your pain medication to prevent constipation. Laxatives must be taken with adequate fluids.

*Drink more fluids:* Drinking adequate fluids can help keep bowel movements regular. Fluids will also help your body recover after you develop constipation.

*Eat more fiber:* What you eat can increase or decrease your risk of constipation. High fiber foods help your stools stay soft by holding on to liquid. When increasing fiber in your diet, do it slowly so that your digestive system can get used to it. You can also add fiber to your diet with fiber supplements but remember that adding supplemental fiber can increase constipation if too little water is consumed.

*Regular meals and snacks:* Small and frequent well-balanced meals can encourage regular bowel movements.

*Physical activity:* Physical activity, such as walking, has been shown to decrease the risk of constipation. Be sure to follow the instructions of your surgeon regarding your limits on exercise.

### **Activity Progression**

Continue with your home exercise program as instructed by the physiotherapist in the hospital. You should also work on increasing your tolerance with walking. Start with shorter walks throughout the day. Gradually increase the distance as tolerated. To determine your tolerance, listen to your body. Use your level of pain and swelling as a gauge.

### **Follow Up Physiotherapy**

Following your discharge home from the hospital, you may choose to attend private physiotherapy. Patients will be directed to follow a prescribed exercise routine during their recovery at home. If you feel you need assistance with your recovery, you can access a physiotherapist privately either one on one or in a class setting.

For your information, a list of private physiotherapy clinics can be found on the Manitoba Physiotherapy Association website at <https://mbphysio.org/> or the College of Physiotherapists of Manitoba website at <https://www.manitobaphysio.com/>. On the Manitoba Physiotherapy Association website, you can also find a list of physiotherapy clinics or other centers which offer group classes for clients following joint replacement surgery.

## When and Who to Call

If you think you might have an infection after your surgery call your surgeon.

If you need more pain medication or have excessive bleeding call your surgeon.

If you have sudden chest pain or shortness of breath call 911.

For all other questions please call Health Links/Info Sante at 204-788-8200 or 1-888-315-9257.

## Living with Your New Joint



With good care and effort to protect your joint replacement from unnecessary stress, your new joint should last 15 years or more. To ensure the best possible outcome, there are some long-term guidelines for you to follow.

### Consulting with Your Orthopedic Surgeon

It is important that you attend all follow up appointments with your surgeon. Your surgeon will determine how often follow-ups are required. The surgeon can often detect wearing of the joint prior to you experiencing symptoms. Early detection may provide an opportunity to repair the joint with a simple revision as opposed to a more complex surgery.

If you develop any concerns related to your joint, arrange for an earlier follow-up appointment. Symptoms that you should report to your surgeon's office include:

- ! New pain in your joint or leg that lasts more than a few days.
- ! A limp or pain with weight bearing.

## **Recreation and Social Activities**

It is important to return to regular physical activity after your joint replacement. The Canadian Physical Activity guidelines suggest 150 minutes of moderate to vigorous intensity aerobic activity per week in at least 10-minute bouts to maintain good health and fitness. Strength exercises are recommended on at least 2 days per week. Following these guidelines and remaining active will allow you to maintain better movement and strength in your new joint. Appropriate activities should be low impact, allow for periods of rest as needed and not cause pain in the joint. Ask your orthopedic surgeon about any sports or activities that you may wish to take part in after surgery. Based on your experience with the activity, current level of fitness and your joint replacement, your surgeon can guide you as to what activities would be safe for you to take part in as an individual following surgery.

### ***Recommended Activities:***

- ✓ Walking or using a treadmill
- ✓ Swimming, water aerobics, water walking
- ✓ Recreational cycling, stationary cycling
- ✓ Golf (using a cart initially)
- ✓ Traditional dancing
- ✓ Low impact aerobics

### ***Possible Activities:***

- ? Hiking (easy trails)
- ? Downhill (green/blue runs) and cross-country skiing
- ? Modern dance
- ? Doubles tennis (avoid twisting and running)
- ? Step or rowing machines
- ? Skating - inline and ice
- ? Gardening and yard work
- ? Repetitive lifting (less than 20 kg)
- ? Lawn bowling (operated leg back)
- ? Horseback riding

### ***Activities to Avoid:***

- ✗ Running/jogging
- ✗ Jumping (skipping rope)
- ✗ Singles tennis, badminton, squash
- ✗ Contact sports (football, soccer, hockey)

- ✘ High impact sports (basketball, volleyball)
- ✘ Water skiing

### **Returning to Work**

Your surgeon will discuss with you when it is safe for you to return to work based on your workplace demands. If you have a more sedentary job (desk job), you may be able to return to work within a few months. If your job is more physically demanding, it may be 3-6 months before you can return to work. Concerns regarding financial income need to be considered prior to surgery. Some individuals may require modifications to their job or a gradual return to work plan. Planning with your surgeon and your employer prior to surgery will allow for a smoother transition back to work.

### **Travel/Airport Security**

If you plan to travel in the first few months after your joint replacement, you should speak to your surgeon for recommendations regarding the timeline and blood clot management. Your new joint may set off the metal detecting devices such as those in airports and some buildings. However, it is unlikely to set off most modern devices. Tell the security officer that you have had a joint replacement and they may use a handheld wand over the area to confirm this. You should not require a letter from your surgeon indicating you have had a joint replacement when travelling in North America (you may want to clarify when travelling internationally).

### **Dental Work after Surgery**

The COA (Canadian Orthopedic Association), CDA (Canadian Dental Association) and AMMI (Association of Medical Microbiology and Infectious Disease) recommend that patients should be in optimal oral health before having joint replacement surgery and should maintain good oral hygiene and health following surgery. They no longer recommend the use of antibiotics prophylactically (preventative) for patients with joint replacements when undergoing teeth cleaning or a dental procedure. Your health care provider must use their judgment based on your individual health status when determining if preventative antibiotics are appropriate.

### **Other Infections**

If you develop an infection anywhere in your body, ensure it is treated promptly to avoid the infection from traveling to your new joint. It is important to report your joint replacement to all medical professionals as it may impact other procedures.

## Appendix 1

### *Pre-Op Exercise Program*

Strength, range of motion and flexibility exercises should be started before surgery to maintain range of motion and strength, familiarize yourself with the exercise routine you will take part in after surgery, and allow for a faster and smoother recovery. You should ensure that your program covers the major muscle groups in the lower leg. Below are the suggested exercises to start with – you can move into the more advanced versions as you feel stronger.

#### **For Knee Replacement Surgery:**

**Range of Motion** – Knee/Hip Flexion/Extension, Knee Flexion (seated), Foot and Ankle

**Strength** – Isometric Quadriceps, Quadriceps Over a Roll, Straight Leg Raise, Bridge, Seated Knee Extension, Isometric Hip Adduction, Standing Knee Flexion, Partial Squat (or Sit to Stand), Standing Hip Abduction (or Side Lying if preferred), Calf Raise, Step Ups if tolerated

**Stretches** – Gastrocs Stretch, Hamstring Stretch, Quadriceps Stretch

#### **For Hip Replacement Surgery:**

**Range of Motion** – Knee/Hip Flexion/Extension, Supine Hip Abduction, Foot and Ankle

**Strength** – Isometric Quadriceps, Isometric Glutes, Quadriceps Over a Roll, Bridge, Seated Knee Extension, Isometric Hip Adduction, Partial Squat (or Sit to Stand), Standing Hip Abduction (or Side Lying if preferred), Standing Hip Flexion, Standing Hip Extension

**Stretches (only if tolerated)** – Gastrocs Stretch, Hip Rotation/Adductor Stretch, Buttock Stretch, Hamstring Stretch, Hip Flexor Stretch (Standing or Supine)

***Please see a physiotherapist in the community or attend classes at the Joint Replacement Resource Centre for a more individualized program and/or more instruction.***

For a visual review of the exercises, please visit our website:

<https://wrha.mb.ca/joint-replacement-resource-centre/videos/getting-ready-for-a-hip-or-knee-replacement/>

## *Post-Op Exercise Progression*

The exercises you will take part in after joint replacement surgery will be based on which stage of recovery you are in. Therefore, the different stages have been included here for you to review. These exercises can be removed from your manual to follow along with as you progress during your post-op (after surgery) recovery. Your physiotherapist will guide you as to which exercises are appropriate for you. You will start with the basic exercise program immediately following surgery. You will continue with this basic program until indicated by your surgeon or physiotherapist. At that time more intermediate or advanced exercises will be added to continue to progress your range of motion, strength, flexibility and balance. These exercise progressions are outlined in the Intermediate and Advanced Exercises.

**Knee Exercises Only – Blue**

**Hip Exercises Only – Green**

**Both Hip and Knee – Orange**

***NOTE: Your physiotherapist will indicate which exercises they want you to take part in. Please follow the physiotherapist's advice and progress as instructed.***

### **Glossary of Exercise Terms:**

Flexion – bend

Extension – straighten the leg at the knee or lift the leg behind from the hip

Static/Isometric – tightening your muscle without needing to move your joints

Quadriceps – the large muscle on the top of your thigh; it works to straighten your knee

Hamstrings – large muscle group on the back of your thigh; it works to bend your knee

Hip Abduction – the movement of lifting your leg out to the side from the hip

Lateral – to the side

Repetitions – the number of times you repeat an exercise

Sets – the number of times you repeat the specified repetitions in a day

## Knee and Hip Replacement Post-Op (after surgery) Exercises

### Range of Motion

The first series of illustrations look at range of motion or movement at your knee and/or hip. These flexibility exercises are important to regain normal movement in your joint following surgery. Your surgeon or physiotherapist will check your range of motion during your recovery to ensure you are progressing as expected.

Read the instructions carefully. These exercises should be performed daily.

\*Note: the bandage shown is only to mark the side of surgery – you will not have this tensor on after surgery.

**Knee Exercises Only – Blue**

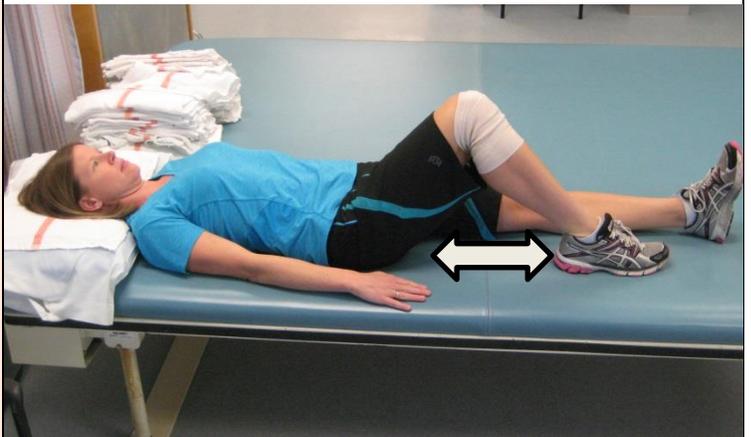
**Hip Exercises Only – Green**

**Both Hip and Knee – Orange**

#### Knee/Hip Flexion/Extension

1. Lie flat on your back.
2. Slide the heel of your surgery leg toward your buttocks, bending the knee and hip.
3. Slowly slide the leg back to a flat position.
4. Complete 10 repetitions each leg. Work up to 30 repetitions as able.

\* A garbage bag can be used under your foot to decrease resistance initially.



### Knee Flexion with Assist

1. Place a sheet around the arch of the foot of the surgical leg.
2. Use your hands on the ends of the sheet to pull your knee into more flexion (bend). Hold for 10 seconds. You should feel a strong stretch/pull along the front of the knee over the incision. Return to start position.
5. Complete 10 repetitions.



### Knee Flexion (seated)

- 1 Sit in a chair.
  2. Bend your surgery knee as much as you can, keep your foot flat on the floor.
  3. Slide your bottom forward on the chair until you feel a stretch in your knee. Hold for 20 seconds. Slide hips back into the chair.
  4. Complete 3-5 repetitions.
- \*You can also use your non-surgery leg to push your surgery leg to get more bend.



### Supine Hip Abduction

1. Slide your surgery leg out to the side, hold for 5 seconds and then slowly bring the leg back into the starting position.
2. Keep your knee straight and feet pointing up.
3. Complete 5-10 repetitions. Work up to 30 repetitions as able.



### Foot and Ankle Exercise

Pump both feet up and down as often as possible and frequently throughout the day.

\*This exercise is important for circulation – it should be completed when sitting or resting for longer periods.



### Weight Shifting/Weight Acceptance

Practice putting more weight through your surgery leg by shifting your body weight from side to side. Use your walker or crutches to help with support as you shift your weight onto the surgery leg. This will allow for an improved walking pattern as you feel comfortable bearing your full weight through your surgical leg.

You should also practice shifting front to back from heel to toes.

Perform for 5 minutes.



## Beginner Strengthening Exercises

The next few exercises are the basic strengthening exercises which will allow your hip or knee to gradually regain strength before you move onto more advanced strengthening.

Complete the strengthening exercises 3 times per day. If you add weight or resistance, you should take a day off between the weighted exercises to allow your muscles to rest and recover.

You can increase from 10 up to 30 repetitions of each exercise as able. You are likely ready to move to the more advanced exercises if you can perform 30 repetitions without rest.

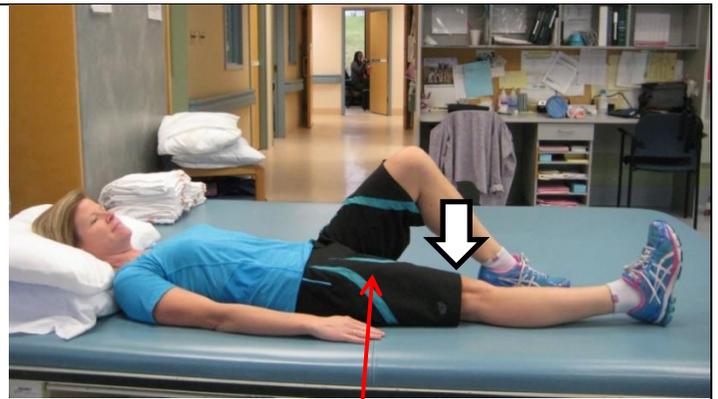
**Knee Exercises Only – Blue**

**Hip Exercises Only – Green**

**Both Hip and Knee – Orange**

### Isometric Quadriceps

1. Lie on your back with your surgery leg straight.
2. Press the back of your knee downward into the bed. This should tighten the muscle on the top of your thigh. Hold 5 seconds.
3. Complete 10 repetitions with each leg or with both legs simultaneously.

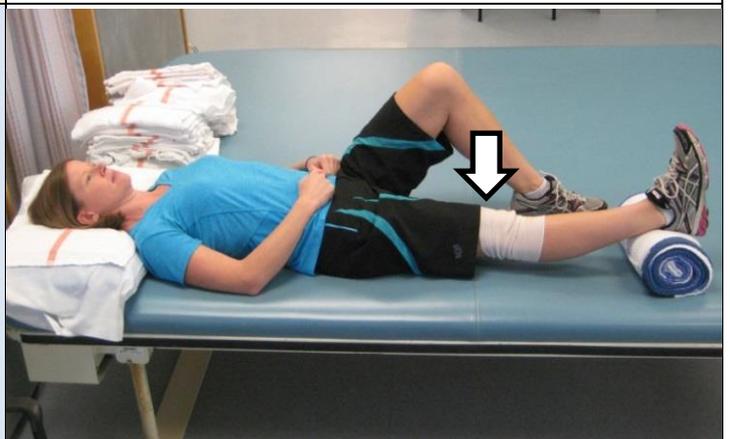


Quadriceps muscle

### Knee Extension with Roll

1. Lie on your back. Place a 6" roll under your heel.
2. Tighten your thigh, pushing the back of your knee towards the bed. Hold 5 Seconds. Relax.
3. Complete 10 repetitions.

\*You should feel a stretch in the back of your knee – this exercise helps promote full extension (straightening of the knee) after surgery.

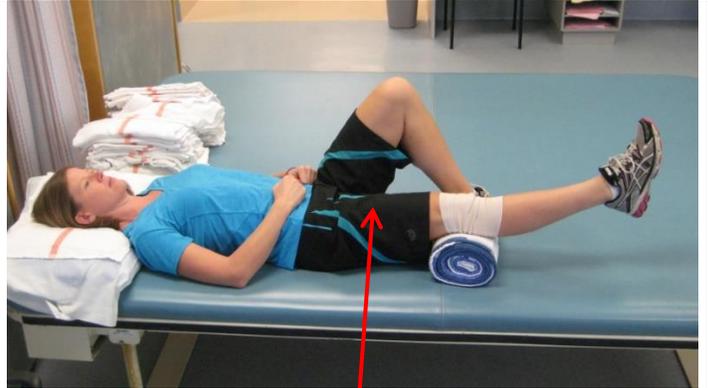


**Isometric Glutes**

1. Lie on your back.
2. Squeeze your buttocks together. Hold for 5 Seconds. Relax.
3. Complete 5-10 repetitions.

**Quadriceps over Roll**

1. Lie on your back with a six-inch roll under your knee.
  2. Raise your heel off the bed until your knee is as straight as possible. The back of your knee should remain in contact with the roll. Hold 5 seconds and slowly lower.
  3. Complete 10 repetitions with each leg, work up to three sets per day.
- \*This exercise can be progressed gradually by adding resistance (ankle weights).



Quadriceps muscle

## Intermediate Strengthening Exercises

These more challenging exercises allow you to continue to regain strength around the hip or knee. As with the beginner exercises, start with 10 repetitions 3 times per day. Increase repetitions as tolerated up to 30. You may be able to add the more advanced exercises as you recover.

**Knee Exercises Only – Blue**

**Hip Exercises Only – Green**

**Both Hip and Knee – Orange**

### Straight Leg Raise

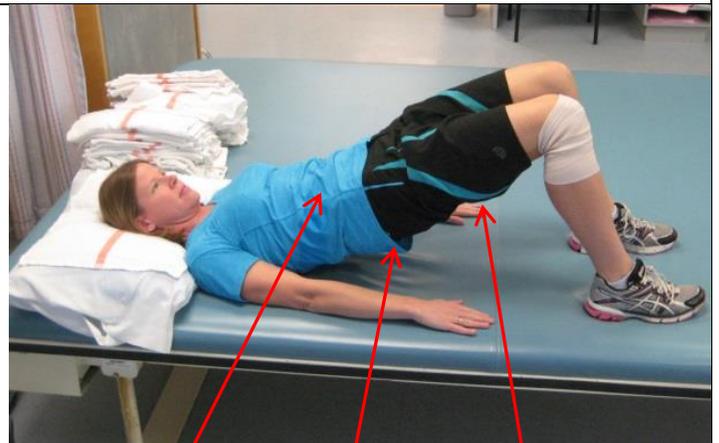
1. Lie on the bed with your surgery leg straight and your other leg bent as shown.
2. Exercise your straight, surgery leg by pulling your toes up towards your nose, fully straightening your knee and lifting the leg about 1 foot off the bed.
3. Hold 5 seconds and then slowly lower back down to the bed.
4. Complete 10 repetitions.



Quadriceps/Hip Flexor (Iliopsoas)

### Bridge

1. Lie on your back with both knees bent as shown.
2. Tighten your buttocks and raise your hips and buttocks off the bed as high as you are able. Keep your pelvis level. Make sure to breathe throughout this exercise!
3. Hold 5 seconds; slowly lower your hips back down to the bed.
4. Complete 10 repetitions.

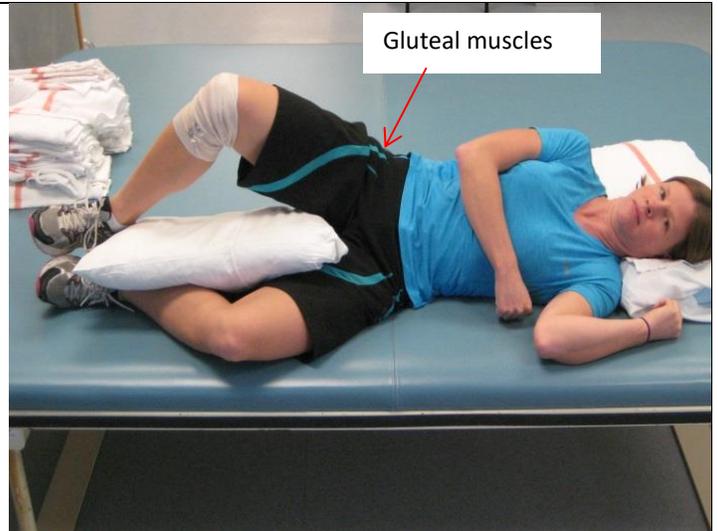


Core muscle, Gluteal muscle, Hamstrings muscle

### Clamshell Hip Abduction/Rotation

1. Lie on your side with your operated hip on top. Place a pillow between your knees to cushion the top knee. Slightly bend your knees as shown.
2. Keeping your heels together; raise your knee off the pillow, opening your legs from the hip (like a clam!). Hold for 5 seconds.
3. Complete 10 repetitions.

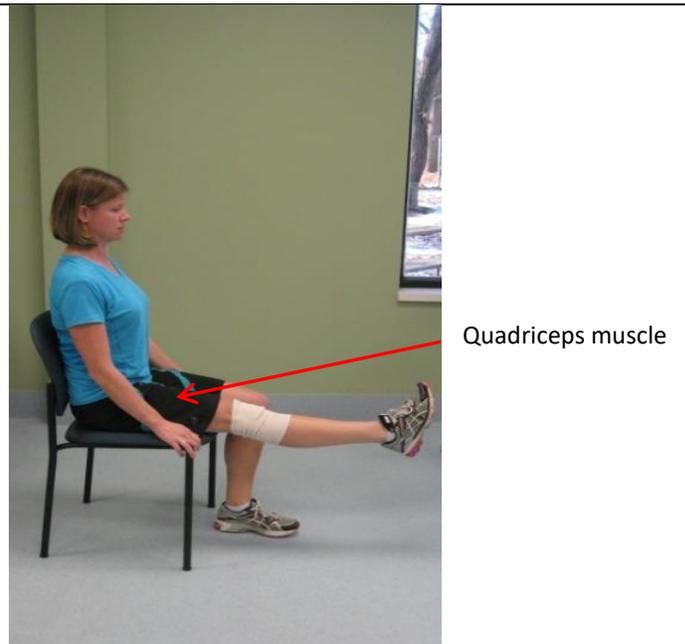
\*You should feel this at the side of your hip and into your gluteal muscles.



### Seated Knee Extension

1. Sit on a chair. Your thigh should be fully supported by chair. Sit all the way back in the chair and choose a chair with enough depth to support up to the crease behind your knee.
2. Pull your toes up and slowly straighten your knee. Hold 5 seconds and slowly lower.
3. Complete 10 repetitions with each leg.

\*You can add resistance (ankle weight) as tolerated.



### Isometric Hip Adduction

1. Sit in a chair – position yourself towards the edge of the chair as shown. Place a towel roll/cushion/ball between your knees.
2. Gently press into the roll with your knees – you should feel the muscles on the inside of your thigh tighten.
3. Hold 5 seconds and then gently relax.
4. Complete 10 repetitions.



Hip adductors/Gracilis

### Standing Knee Flexion

1. Stand holding onto a solid object as shown.
  2. Slowly bend your surgery knee making sure your thighs stay side by side; the bending knee should not move forward.
  3. Hold 5 seconds and slowly lower.
  4. Complete 10 repetitions with each leg.
- \* You can add resistance as tolerated (ankle weights/resistance bands).

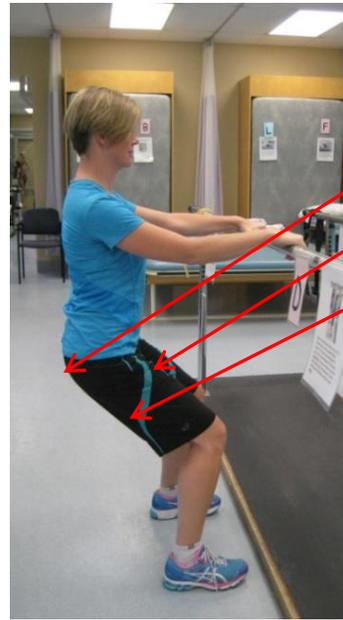


Hamstrings muscle

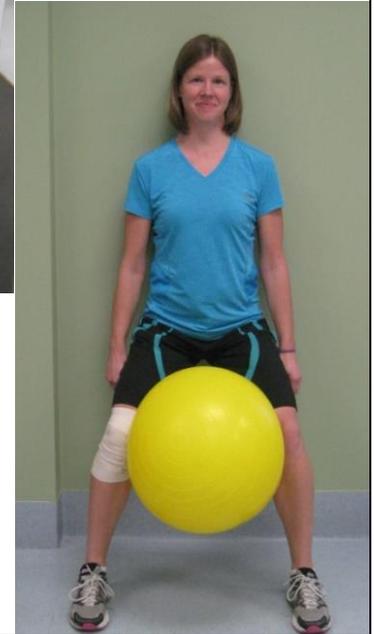
### Partial Squat

1. Stand holding onto a solid object for support.
2. Slowly bend your knees and sit your hips back into a slight squat position- as if you were going to sit on a chair. Ensure your knees do not bend forward past your toes. Try to keep your knees lined up with your toes, do not let them flare in or out. To return to standing, squeeze your buttocks and use the muscles in the legs to lift you to a standing position, do not pull yourself up using your arms.
3. Complete 10 repetitions.

**Advanced:** Stand against the wall, ball between the knees. Come down into a squat position. Hold for 5 seconds squeezing gently into the ball (the ball should allow the knees to stay hip distance apart). Push through the legs to return to starting position. Complete 10 repetitions.



Gluteus Maximus  
Quadriceps muscle  
Hamstrings muscle



### Standing Hip Abduction

1. Stand holding onto a solid object for support.
2. Raise your surgery leg out to the side without letting it come forward. Your hips should stay level throughout the exercise and your toes remain pointing forward. Hold 5 seconds and then slowly relax to the starting position.
4. Complete 10 repetitions with each leg, work up to 3 sets per day.

\* You can use a light ankle weight or bands/tubing for resistance as tolerated.



Gluteus Medius,  
Tensor Fascia Latae

### Standing Hip Flexion

1. Stand using your kitchen counter or a stable piece of furniture that is approximately waist height for support.
2. Bend your surgery leg towards your chest. Hold for 5 seconds. Slowly lower your leg.
3. Complete 5-10 repetitions.

**Repeat process on your non-surgery side to increase strength and balance.**

\*You can use a light ankle weight or bands for resistance as tolerated.



Iliopsoas/Quadriceps

### Standing Hip Extension

1. Stand using your kitchen counter or a stable piece of furniture that is approximately waist height for support.
2. Keep your knee straight; lift your surgery leg back. Do not bend forward or arch your back. Hold for 5 seconds. Lower your leg.
3. Complete 5-10 repetitions.

**Repeat process on your non-surgery side to increase strength and balance.**

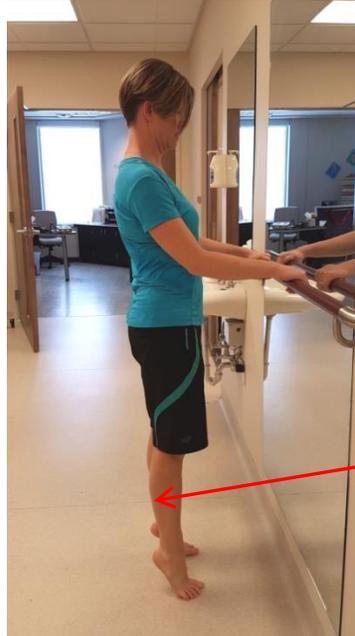
\*You can use a light ankle weight or bands for resistance as tolerated.

Gluteus  
Maximus,  
Hamstring



### Calf Raise

1. Stand with feet shoulder width apart holding onto a solid object for support.
2. Raise up slowly onto your toes as high as you can, you should feel the muscle in the back of your lower leg tighten.
3. Hold 5 seconds and then slowly lower until your heels contact the ground.
4. Complete 10 repetitions; work up to 3 sets per day.



Gastrocnemius  
(calf muscles)

### Modified Stork Stand/Balance

1. Stand holding onto a solid source of support.
2. Try putting your full weight onto your surgery leg and lift your non-surgery leg off the floor. Your hands should be on the surface in front of you for support to start.
3. Work up to being able to stand on the surgery leg for 30 seconds with support.

**Advanced:** Once you can stand on the surgery leg for 30 seconds, try stork standing while holding on with one hand.



## Advanced Strengthening Exercises

These more challenging exercises allow you to continue to regain strength around the hip or knee and prepare you to gradually return to normal activity. Start with 10 repetitions 3 times per day. Increase repetitions as tolerated up to 30 repetitions. It is important to continue exercise after surgery to maintain your range of motion and strength.

Normal daily activities do not take the place of focused strengthening and stretching!

**Knee Exercises Only – Blue**

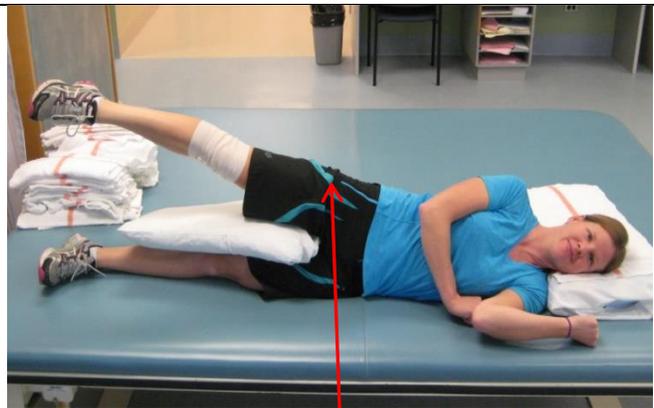
**Hip Exercises Only – Green**

**Both Hip and Knee – Orange**

### Side Lying Hip Abduction

1. Lie on your side with the surgery leg on top. Place a pillow between the knees if needed. (This can help cushion the knees or maintain some space between legs for comfort).
2. Lift your surgery leg up off the pillow. Your hips should remain stacked. You can bend your lower leg for stability if needed.
3. Hold for 5 seconds.
4. Complete 10 repetitions.

\* You can use a light ankle weight or bands/tubing for resistance as tolerated.

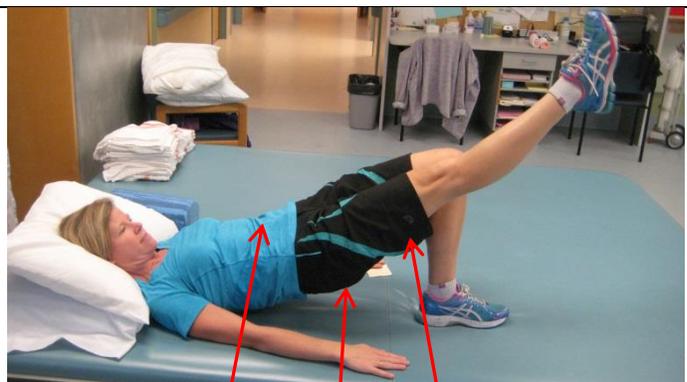


Gluteus Medius, Tensor Fascia Latae

### One Leg Bridge

1. Lie on your back with your feet and palms flat on the bed/floor. Contract your buttocks and abdominal muscles to slowly lift your buttocks up off the floor/bed. Once stable and comfortable, lift the non-surgery leg up.
2. Hold for 5 seconds.
3. Complete 3 repetitions.

\*You can choose to alternate legs in a marching fashion or alternate sides. You can work up to



Core muscle, Glutes, Hamstrings muscle

lifting and lowering your buttocks with the leg extended in the full motion.

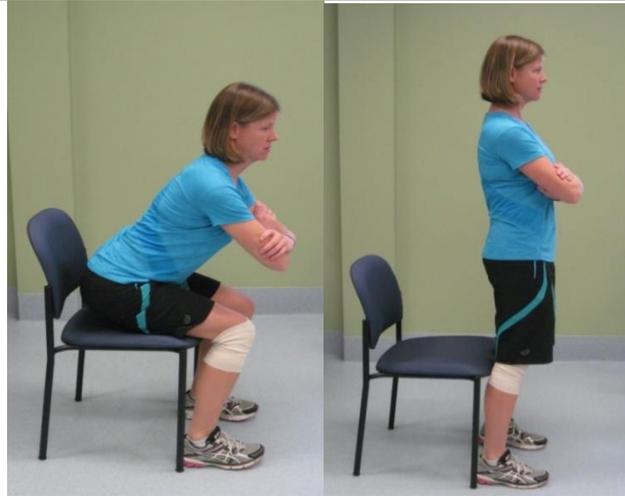
### Sit to Stand

1. Sit in a chair. Try to bend your surgery leg as much as possible so your feet are side by side. Stand up using as little assistance from your arms as possible. You can start using a higher chair surface or the arms on a chair to assist.

2. Slowly sit back down. The motion should be controlled – try not to use momentum to stand and try not to drop down onto the chair.

3. Complete 10 repetitions.

**Advanced:** Try to sit and stand without using your arms to help. You can also progress to a lower surface.



### Step Ups

1. Stand holding onto a rail for support (if using the bottom step) or hold onto a solid surface if using a small step. If using a stool, please ensure it is stable and safe – it would be best to start with a lower height such as 2-6”.

2. Place your surgery leg onto the step. Straighten your surgery leg to lift your other leg off the floor. Ensure your knees do not bend forward past your toes. Try to keep your knees lined up with your toes, do not let them flare in or out. Slowly bend your surgery leg to lower the non-surgery leg down to the ground.

3. Complete 10 repetitions.

\* Ensure you are controlling both the raising up and lowering down motions.

**Advanced:** Increase the height of the step as able.



### Lateral Step Up

1. Stand facing the railing with your surgery leg closest to the step if using the bottom step or holding onto a solid support if using a small step.
2. Place your surgery leg onto the step. Straighten your surgery leg to lift your non-surgery leg off the floor.
3. Slowly bend your surgery leg to lower the non-surgery leg down to the ground.
4. Complete 10 repetitions.

\*Ensure you are controlling both the raising up and lowering down motions.

**Advanced:** Increase the height of the step as able.



### Stair Climbing

1. Stand holding onto one or both rails.
2. Step up onto the first stair. Step up onto the next step with your other leg. Climb up and down 2-3 stairs using alternate legs.

\* To ensure safety always use the rail to start. Start slowly to ensure you are bending your surgery knee as you raise it onto the step and your foot is fully on each step. You require just over 90 degrees bend in the knee to climb stairs with this reciprocal pattern.

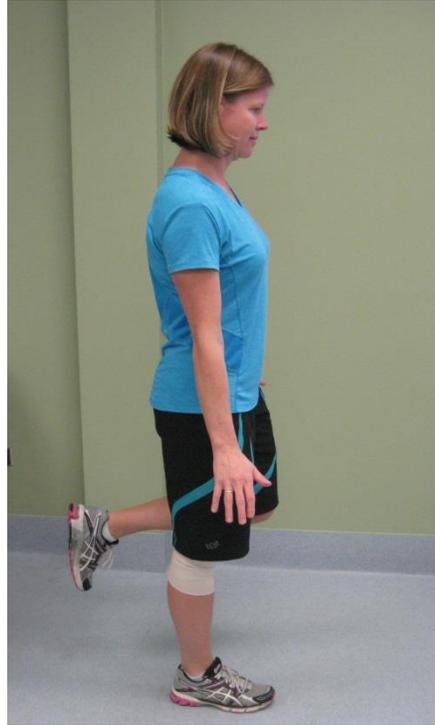
**Advanced:** Use this pattern with an entire flight of stairs.



**Stork Stand (Balance)**

1. Stand next to something solid for support. Lift your non-surgery leg up off the floor.
2. Try to stand on your surgery leg without holding on – slowly let go of your support once you feel stable. If you feel off balance, place your hands on the surface to steady yourself.
3. Try to hold this position for 30 Seconds.

**Advanced:** Try stork standing on an uneven surface (carpet/mat/towel).



## Knee and Hip Stretches

Stretches work to increase the length of muscles when gradual tension is applied to the muscle over time. These stretches will be essential to decrease stiffness of the muscles around your hip or knee allowing faster return of motion at your joint. Stretches are different from strength-based exercises in that the muscle is held at a point of tension or stretch for a longer period to improve flexibility. Therefore, the hold will be longer (15-30 seconds) but the repetitions are less (2-4). It is beneficial to complete stretches when the muscle is warm – such as following cardiovascular exercise (walking, stationary bike) or following your strengthening exercises.

**Knee Stretches Only – Blue**

**Hip Stretches Only – Green**

**Both Hip and Knee – Orange**

## Intermediate Stretches

### Seated Knee Extension Stretch

1. Sit on a chair with your surgery leg on a chair/stool in front of you. Keep your back and your surgery leg as straight as possible.
2. Slowly lean forward until you feel a stretch down the back of your leg.
3. Hold 30 Seconds.
4. Repeat 2 times.

**Advanced:** Apply a gentle pressure to the front of the knee (as shown).



**Stair Bend/Flexion Stretch**

1. Stand facing the stairs, holding onto the railings. Place your surgery leg onto the second step.
2. Bend your surgery knee and move your body forward until you feel a stretch across the front of your knee, keeping your back straight.
3. Hold 30 Seconds.
4. Repeat 2-3 times.

**Gastrocs Stretch (Calf stretch)**

1. Position yourself against a wall as shown with your surgery leg behind you. Point your toes directly toward the wall and keep your back heel down.
2. Lean into the wall allowing the front knee to bend and keeping the back leg straight so you feel a stretch in the back of your lower leg (calf) on the surgery leg.
3. Hold 15-30 seconds.
4. Repeat 2-4 times per leg.



## Advanced Stretches

**Knee Stretches Only – Blue**

**Hip Stretches Only – Green**

**Both Hip and Knee – Orange**

### Hip Rotation/Adductor Stretch

1. Lie on your back with both knees bent.
2. Keeping your heels together slowly let your legs open out to the side as shown.
3. Hold for 15-30 seconds.
4. Repeat 2-4 times.



### Buttock Stretch

1. Lie on your back. Bend the knee of your non-surgery leg up with your foot resting on the bed.
2. Cross your ankle of the surgery leg onto the thigh of your bent leg.
3. To make the stretch more intense, bring the knee of your non-surgery leg toward your chest. To decrease the stretch, have less bend in the knee of your non-surgery leg.
3. Hold 15-30 seconds.
4. Repeat 2-4 times per leg.



### Quadriceps Stretch

1. Lie on your stomach with both legs straight.
2. Bend the knee of your surgery leg slowly until you feel a stretch in the front of the thigh. (To increase the stretch, you could use a strap around your heel to assist your hands). Keep the front of your hip flat on the bed and do not arch your back.
3. Hold 15-30 seconds.
4. Repeat 2-4 times per leg.

**Alternate position:** You could also sit in a chair. You can turn sideways in the chair to let the leg hang off or sit to the side of the chair as shown. The leg hanging down should have the knee bent to about 90 degrees with the knee pointing at the floor. Lean back slightly in the chair to increase the stretch along the front of your thigh and hip.



### Hamstring Stretch

1. Sit at the edge of a chair or bed as shown with your surgery leg straight out in front. Lean forward, keeping your back straight, as if you wanted to touch your toes. Stop when you feel a stretch in the back of your thigh (you should not feel pain). Make sure your knee stays as straight as possible.
2. Hold 15-30 seconds.
3. Repeat 2-4 times per leg.

**\*This stretch will not be performed after hip surgery until your hip precautions are lifted, if applicable.**



### Standing Hip Flexor Stretch

1. Stand holding onto kitchen counter for support.

2. Take a step back with your surgery leg.

Lunge forward by bending your non-surgery leg; be sure to keep your back straight and your back leg straight. You should feel a stretch in the front of your surgery hip.

3. Hold for 15-30 seconds.

4. Repeat 2-4 times.

**Progression:** As your balance improves try the above stretch without holding onto the counter.

### Lying Hip Flexor Stretch

1. Lying on your back, bring your non-surgery leg towards your chest (you can grab the back of the thigh or use a strap under the thigh to bring the leg up if more comfortable) keeping your surgery leg flat on the bed. You should feel a stretch in the front of your surgery hip/upper thigh.

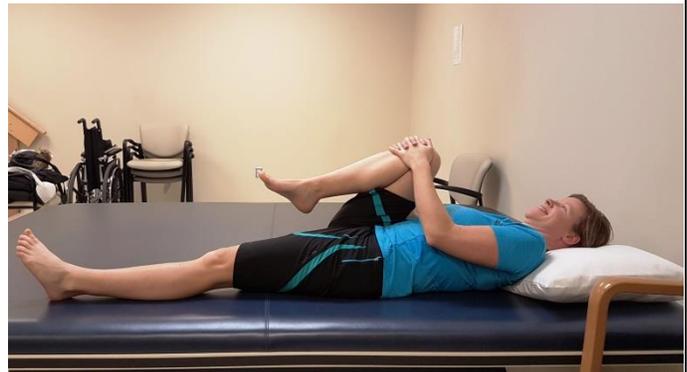
2. Hold 15-30 seconds.

3. Repeat 2-4 times.

\* You do not need to repeat this stretch with your non-surgery leg if it is too sore to bring your surgery leg up towards your chest.



OR



## Appendix 2

### Total Joint Replacement Checklist

#### **What to do the day before surgery:**

- Remove all jewelry and nail polish from fingers and toes.
- Shower or bathe the night before surgery and/or the morning of surgery and wash the surgical area well with soap and water. Do not shave the surgical area.
- Do not eat anything (includes gum, candy) starting at \_\_\_\_\_.
- Do not drink anything starting at \_\_\_\_\_.
- Take medications as instructed by the anesthesiologist or nurse.

#### **Items to bring on the morning of surgery: *Please label all equipment!***

- Dentures and Hearing Aids (dentures will be removed before surgery – have a labeled container for these items).
- Eyeglasses with a labeled case.
- CPAP/BiPAP machine if you have sleep apnea (must be in good working order).
- Mobility Aids** such as a walker or crutches will be discussed with you during your education class at the Joint Replacement Resource Centre. You will be given important information on what equipment will be required. This should be brought into the hospital for assessment purposes.
- Overnight case with personal items (toiletries, clothes, footwear, cell phone)
- One set of comfortable clothes (i.e. t-shirt, loose shorts or pants)
- Non-slip shoes or slippers (ensure they allow for swelling, closed at the heel and toe)
- Specific self-care aids/dressing aids if available (e.g. long handled shoehorn, sock aid, reacher)
- Other: \_\_\_\_\_

#### **\*\* DO NOT BRING:**

- Personal medications (unless instructed by the nurse or anesthetist)
- Large amounts of money, jewelry or any other valuables
- Medic Alert bracelets can be left at home

***The WRHA Joint Replacement Resource Centre and the WRHA Prehabilitation Clinic would like to acknowledge the valuable contributions made by the following:***

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