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Introduction to Joint Replacement

It is common to have some questions and concerns after deciding to have joint replacement surgery. This book will provide you with information on what to expect before, during and after surgery, as well as how to prepare yourself and your home in order to optimize your recovery.

It is important to learn as much as possible about knee replacement surgery as it will allow you to be prepared and an active participant in your care. An optimal recovery requires hard work on your part.

Please take some time to read through this book before your surgery. Read it at your own pace and write down any questions you may have. These questions can be answered by your surgeon, nurse, physiotherapist or occupational therapist at any time before or after your surgery.

Please review this book prior to all appointments before surgery and bring any questions you may have to the hospital.

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

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**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 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).

As the pain in the knee worsens, you may use your joint less and less. The result is a decrease in motion at the knee as well as loss of strength in the muscles around the knee.
**Surgical Treatment (Joint Replacement)**

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

- Ease your pain
- Improve your knee joint motion
- Correct deformity (e.g. varus (bowing)/valgus (knock-knee))
- Improve function such as walking, standing, dressing, bathing, etc.
- Enhance your quality of life

**Realistic Expectations of Joint Replacement**

Knee replacement surgery is one of the most common and successful surgeries. While most patients have complete or nearly complete relief of pain following the recovery from total knee replacement, some patients do continue to experience pain. In many cases, the pain improves with time. In other cases, a specific cause for pain is identified and treated. This may be due to changes in the soft tissue and/or muscles around the knee.

The life expectancy of a total knee replacement is influenced by the amount of stress placed on the replacement. Controlling body weight and adhering to the activity recommendations (see Recreation and Social Activities on page 78) will increase the life of your joint. In general, 90-95% of knee replacements should last at least 15 years.
There are different styles of knee replacement components. The best type of prosthesis is determined based on your age, the strength of your bone, the shape and condition of your joint, your general health, body weight and activity level.

In general, the benefits (improvement in your quality of life) after total knee replacement outweigh the risks for most individuals with severe arthritis. Most patients have many years of pain free function. Please review the complication section in detail to assist you in making an informed decision about surgery.

**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 knee replacements 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, has a groove for the patella (knee cap) to move along.
2. Patella (knee cap) – a plastic button is attached to the back of the knee cap 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 bone are exposed. Specialized cutting jigs are used to remove small amount 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 Total Knee Replacement” on the WRHA Hip and Knee Resource Center’s webpage (http://www.wrha.mb.ca/prog/hipknee/video.php) if you would like more information.

Unicompartmental Knee Replacement Surgery

When only one part of the knee joint is damaged, it may be possible to replace only that part of the joint. The procedure is similar to a total knee replacement, but only one side 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 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, therefore it is only offered to
patients who are physically fit and in good health. The benefit is an overall faster recovery since there is only one hospital stay.

Revision (Re-do) Joint Replacement Surgery for Knees

If for any reason a joint replacement surgery fails, revision surgery may be necessary. In revision surgery, some or all of the 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.

Failure of the joint 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, but this is influenced by how much stress is placed on it. Controlling weight and adhering to the activity recommendations will increase the life of your joint. Follow-up visits with your surgeon after joint replacement surgery are important to allow early identification of problems should they arise. This will often make the revision less complicated.
Complications of Joint Replacement Surgery and How to Prevent Them
Complications of Joint Replacement Surgery and How to Prevent Them

The complication rate following joint replacement surgery is low. Chronic illness (diabetes, heart or lung disease) does increase your risk. A complete evaluation of your health is required before your knee replacement to determine your fitness for surgery. This will be completed by your primary care provider and reviewed at the Preoperative Assessment Clinic where you will have the opportunity to discuss any concerns with the anesthesiologist or nurse.

If complications occur, they can prolong or limit your full recovery. This section will outline complications related to joint replacement surgery and what you can do to prevent them.

Anaesthesia

Most knee replacements are done under regional anaesthesia (spinal or epidural). A spinal involves the placement of a small needle into the back to inject medication into the fluid around the spinal cord. An epidural involves the placement of a small tube into your back to provide ongoing release of medication to the nerves around your spine. You will also be given a sedative to help you relax. Some patients may require a general anaesthetic if the regional anaesthetic is not enough or it is not appropriate based on other medical conditions. Complications associated with anaesthesia are rare. If they do occur, they may include low blood pressure, nausea, headache, infection and bleeding.
Anemia and Blood Transfusion

Blood consists of cells and liquid. Red blood cells contain an important protein (Hemoglobin) which carries oxygen throughout your body. Hemoglobin can be measured with a blood test and has a broad normal range. A hemoglobin test below normal is called anemia. Anemia is defined as a hemoglobin less than 120 g/L in females and less than 130g/L in males. Anemia is a common blood disorder. It can be temporary or a long-term condition and can range from mild to severe. People with mild anemia may have minor symptoms or no symptoms at all. Symptoms can include weakness, fatigue, shortness of breath, headache and difficulty with thinking and concentrating. Anemia may be present before surgery in people who have cancer or other chronic conditions. Another cause of anemia before surgery is low levels of iron due to internal bleeding (caused by diseases or medications). Blood thinners and anti-inflammatory drugs can cause blood loss in some patients. Women, children, vegetarians and the elderly frequently have iron or vitamin deficiency anemia. Anemia may occur after surgery as a result of bleeding during and after your surgery. After surgery, you may feel dizzy, weak, short of breath, nauseated, tired or have a headache. Anemia may be one of the reasons for these symptoms. If anemia is the cause, a blood transfusion may be recommended. Your surgeon will discuss this with you.

A blood transfusion is a medical treatment where blood or blood components are given to a patient. A blood component is made when blood is separated into different parts such as red blood cells or platelets or plasma. Red blood cells carry oxygen, platelets and plasma help the blood to clot and stop bleeding. In Canada, October 2017 (Knee)
the Canadian Blood Services (CBS) collects and tests blood from volunteer donors. Additional information may be found at www.blood.ca.

If you require a blood transfusion, prior to receiving the transfusion you (or your legal designate) will be asked to give your permission or consent if not previously obtained. You should be given information about the reasons, benefits, risks and alternatives in your situation. Be sure to ask questions if you do not understand. During a blood transfusion, a nurse will monitor your temperature, heart rate, blood pressure and breathing. Some patients may have a reaction to a blood transfusion such as a rash, fever, chills or shortness of breath. Tell your nurse immediately if you think you may be having a reaction. You should also let your doctor know if you have had a reaction from a blood transfusion in the past.

**Blood Conservation**

The WRHA Blood Management Service is a regional service designated to assist all health care professionals and patients in understanding and managing the appropriate use of blood, blood products and alternatives to blood.

Elective surgery patients with any of the following may benefit from a consult to Blood Management Services prior to surgery:

1) A procedure with an expected high blood loss
2) Anemia prior to surgery
3) Low body weight
4) If you have received a letter and/or a Medic Alert card from Canadian Blood Services that identifies you as having a rare blood type or antibody

5) If you will not accept a blood transfusion for any reason

Patients can be referred to Blood Management Services by self-referral, their surgeon or their primary care provider. For further information, please visit our website at: www.bestbloodmanitoba.ca

**Blood Clots**

Blood clots can develop in the deep veins of your legs after surgery. These clots are called Deep Vein Thrombosis (DVT). They could be dangerous as they may break off and travel to your lungs, blocking the flow of blood. This is called a Pulmonary Embolus (PE).

Let your surgeon know before surgery if you have had a clot in the past. You are at higher risk of developing clots if you are inactive, overweight and have a health problem such as heart disease or diabetes.

**Preventing blood clots after surgery:**

1) **Motion:** Moving frequently helps to improve your circulation. Every hour you are awake, pump your feet up and down at least 10 times. You should be walking a minimum of three times per day once you are able to walk safely on your own.

2) **Sequential Compression Devices:** Your legs MAY be fitted with inflatable sleeves that you will wear for the first 24
hours after surgery. These sleeves fill up with air and help push the blood and fluid in your legs back up to your heart.

3) **Blood Thinners:** Blood thinners decrease the thickness of the blood which makes it harder for clots to form. After surgery you will be instructed to take the blood thinner best suited to you based on your medical history and other medications you may be taking (e.g. Xarelto, Coumadin, Fragmin).

*** 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 age are risk factors for increased cardiovascular complications. Getting in shape before surgery (see the chapter Before Joint Surgery on page 25) will improve your cardiovascular fitness and reduce the chance of complications. The overall rates of these complications are:

- Heart attack 0.4%
- Stroke 0.25%
- Pulmonary Embolism 0.7%
- Deep Venous Thrombosis 1.5%
- Death 0.5%
**Lung Problems**

Complications such as fluid in the lungs or pneumonia may occur due to the anaesthetic and bed rest. To prevent lung complications after surgery:

- Do not eat anything after midnight the night before surgery. Clear fluids are permitted up to 2 hours prior to the advised arrival time at the hospital on the day of surgery. 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 tell you when you are safe to get up and walk on your own after surgery. Change your position in bed frequently.
- Take 3-5 deep breaths every hour you are awake. Take deep breaths and cough every hour.
- Stop smoking! People who smoke are at a greater risk for lung complications.

**Delirium After Surgery**

Sometimes people will go through a period of confusion or delirium after surgery. Some causes of delirium include lack of sleep, pain, infection, alcohol withdrawal, constipation, low oxygen levels and as a side effect of anaesthesia/medications.

How you can help to prevent delirium:

- Notify your nurse, surgeon or anaesthesiologist if you have had delirium or confusion in the past.
- Ensure you bring your hearing aid and glasses to the hospital.

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✓ For six weeks prior to surgery, limit your intake of alcoholic beverages to one drink per day (8 ounces of beer, 3 ounces of wine or 1 ounce of spirits). Discuss any concerns about alcohol use with your primary care provider.

✓ It is important to inform your nurse/surgeon about all medications you are currently taking including any narcotics, sedatives, and street drugs if applicable.

**Infection**

Wound infections following surgery occur in less than 1% of patients. When infection does occur, it is a very serious complication that may require prolonged antibiotic treatment and further surgery.

How you can help prevent infections:

✓ Get your immune system strong by eating healthy foods before and after your surgery (refer to Healthy Eating for Healing on page 32).

✓ Wash your hands frequently. Ask all your visitors to wash their hands.

✓ Carefully follow the instructions for care of your incision (page 71).

✓ Avoid people who have cold or infections.

✓ 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.

✓ If you are having a medical procedure (e.g. dental fillings or major dental work, colonoscopy), tell your doctor or dentist that you have had a joint replacement. The COA (Canadian

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Orthopedic Association), CDA (Canadian Dental Association) and AMMI (Association of Medical Microbiology and Infectious Disease) no longer recommend the use of antibiotics prophylactically 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.

Special precautions are taken in the operating room to reduce your risk of infection. Despite these efforts, infection may start in your joint at the time of surgery or during your recovery. It is essential you are well nourished and your immune system is strong going into surgery.

**Stiffness**

A knee joint may stiffen after surgery. Patients who have stiff knees before surgery are more likely to have this problem. It is important to work to maintain your flexibility while waiting for surgery to reduce the risk of stiffness following the operation. Manipulation (attempt to increase joint range of motion with a passive forceful movement) may be required to correct this problem. This may be done 2-3 months following the surgery. If this procedure is required, you will be given an anaesthetic.

**Pain, Swelling and Fluid in the Knee**

It is normal for knees to be slightly swollen, red and warm after surgery. This may last several months. This is different form
infection which causes a sudden increase in pain, swelling and stiffness as well as fever and chills. It can take 12-24 months to reach the final result of the surgery.

**Nerve and Vessel Damage**

It is possible, but unlikely, that an important artery, vein or nerve at the back of the knee could be damaged during surgery. This can result in permanent numbness or weakness in the foot. Following surgery, it is common to have a small area of numbness on the outside (lateral aspect) of the knee. This happens because the small sensory nerve that supplies this 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.
Before Your Joint Surgery
Before Your Joint Surgery

_Hip and Knee Resource Center_

The Hip and Knee Resource Center was developed by the WRHA Surgery Program in 2011. Its purpose is to help you be both mentally and physically prepared for your knee surgery. You should have received the Hip and Knee Resource Center pamphlet when you were sent the letter about your initial consult appointment with your surgeon. You may also have attended the Considering Joint Replacement Class to prepare for that consult appointment. The pamphlet also provides information on the education sessions available to individuals who are on the waitlist for knee replacement surgery. These classes include the Nutrition and Exercise class, Pain Management class, Knee Replacement class and the Before Your Surgery Preparation class. You are able to choose which classes best suit your needs and register by phone at 204-926-1221 based on the suggested timelines found in the pamphlet. These group sessions are NOT mandatory. The Hip and Knee Resource Center is located in the Hip and Knee Institute at 1155 Concordia Avenue on the third floor (across the street from Concordia Hospital and Concordia Place and above the Shopper’s Drug Mart). If you would like more information or did not receive the pamphlet, please visit our website at: [www.wrha.mb.ca/prog/hipknee/index.php](http://www.wrha.mb.ca/prog/hipknee/index.php)

_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

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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. The Prehab Clinic would contact you
directly with an appointment date and time based on your
surgeon’s referral.

The Prehab team includes:

**Nurse** – The nurse 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
assessing 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/outpatient physiotherapy based on need.
**Pain Management**

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 is very individual and 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 possible pain medications used to manage arthritis pain. Discuss which one is best for you with you primary health care provider:

- **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, Naproxen and Arthrotec. 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 you primary health care provider immediately. Celebrex is a newer anti-inflammatory medication that may cause less stomach
irritation. This medication should be used with caution if you have high blood pressure or kidney problems.

- Opioid medications – These are stronger pain medications that are sometimes used as a last resort to manage arthritis pain. Examples are Tylenol #3 (acetaminophen with codeine), Percocet (oxycodone with acetaminophen), Morphine or Dilaudid (hydromorphone). All opioid medications can cause constipation, drowsiness and addiction. Drinking water and eating a high fiber diet may not be enough to prevent constipation; you may need to take a laxative as well. Do not drive heavy machinery or drive if you are starting opioid medications or adjusting your dose. Your health care team should be able to advise you if you are safe to drive on these medications.

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 what your current annual deductible is, visit: 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

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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 emotion 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 are commercial books and CDs available to help you learn to practice these relaxation strategies. The Hip and Knee Resource Center also offers a Pain Management class which provides further information on these non-drug strategies (see page 25).

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/PsychologyWorks FactSheet_ChronicPain.pdf

https://arthritis.ca/manage-arthritis/living-well-with-arthritis/managing-chronic-pain

www.arthritis.org/living-with-arthritis/treatments/natural/other-therapies/mind-body-pain-relief/

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. They offer land-based strength classes (PACE), water based cardiovascular exercise and Tai Chi classes designed for people with arthritis. Visit: https://arthritis.ca/manage-
arthritis/living-well-with-arthritis/living-well-in-manitoba-nunavut/arthritis-land-and-water-exercise-programs

- 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, the Arthritis Society offers P.A.C.E (People with Arthritis Can Exercise) classes throughout the city or you could speak to an exercise professional or private physiotherapist in the community for guidance.

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 work on the fitness of your heart and lungs. You also want to be working on the strength of your lower body including the muscles around the knee 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. These exercises are broken up into the exercises you will perform immediately following your surgery (Post-Op) and into the more advanced exercise you will learn during your rehabilitation after surgery.

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It is suggested to start with these exercises as soon as possible **before your surgery** to optimize your strength and flexibility going into surgery. This can help to improve your outcome, and it will also allow 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 us 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 at least 1000-1200 mg of calcium daily.

- **Protein** is also needed to maintain and increase your strength. It is necessary for healing after surgery. High protein foods include beef, pork, fish, poultry, eggs, milk and dairy products, soy milk, beans, nuts, peanut butter and tofu.

- **Iron** is a very important nutrient that your body needs to build up the hemoglobin in your body and prevent anemia. It is a good idea to talk to your health care provider before surgery. They will be able to let you know if YOU have anemia or low iron. They may suggest 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. The type of iron found in meat, fish and poultry is best used by your body. However, your body can use the iron in non-meat foods better when eaten with meat or foods rich in vitamin C. Examples of Vitamin C rich foods are: citrus fruits and juices, tomatoes and tomato products, cantaloupe, strawberries and peppers. 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).

- **Vitamin B12 and Folate** are also important nutrients to prevent certain types of anemia. Your primary health care provider may be able to provide you with further 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.

Your primary health care provider may order a blood test as part of your pre-operative package approximately 3 months before your surgery or may have recently ordered blood tests as part of a physical exam. Ideally, your hemoglobin should be in the high end of the normal range before your surgery. You may be directed to take an iron or vitamin supplement to bring your hemoglobin level up. Eating well helps to ensure that you have a good hemoglobin level before surgery.

**Managing Your Weight**

If you are carrying excess weight, talk to your primary health care provider about following a gradual weight loss program. Extra 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 will help your weight loss efforts and improve your sense of well-being.
By eating a well-balanced diet, such as that recommended in Canada’s Food Guide, you are preparing yourself for a faster 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 in Winnipeg 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.

Smoking

Smoking significantly increases your risk of medical complications during and after surgery. As a result, your implanted knee 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 http://www.manitobaquiits.ca/ for more information.

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Get Your Home in Shape

Most patients 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.

Reorganize Your Home

- Make sure there is enough space in hallways and between furniture to allow for the use of a walker or crutches.
- Remove all area rugs, repair loose flooring and remove clutter and/or cords that may cause you to trip.
- Make sure your home has good lighting, especially at night.
- 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.

Furniture

- 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. Shoes that you are able to slip on or have elastic laces are ideal. The use of flip flops or open back shoes is not recommended as they do not provide good support and may be a tripping hazard. Your footwear must allow for swelling after surgery.

Meal Preparation

✓ Prepare and freeze meals ahead of time so you only have to 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
✓ Reorganize items that are used regularly so that they are easy to reach, preferably between waist and shoulder height. Avoid using the lower shelves in the fridge or loading the lower rack of the dishwasher.
✓ Clear counters so that you can slide items along them.
✓ Sit on a high stool when doing dishes or preparing meals.

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House and Yard Work

✔️ You will be able to do light housekeeping such as dusting.
✔️ Arrange to have a family member or friend do the grocery shopping for you and also assist with heavier housework such as vacuuming, washing floors, laundry, cutting the grass and shoveling snow. If family and friends are unable to assist you, hire someone to do these tasks.

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 Handi-transit. The Manitoba Parking Permit Program is a program offered through the Society for Manitobans with Disabilities (SMD). If a person has difficulties walking more than 50 meters, they can be eligible for the permit. 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 www.smd.mb.ca/smd-services/parking-permit-program. If you are only going to require this form after your surgery, it can be brought to the hospital for your Pre-Admission Clinic appointment, and you can have the Physiotherapist complete it on your behalf. If you would like to apply for Handi-transit before surgery, you can complete the referral without needing the assistance or input from a health care provider. This service is made available through Winnipeg Transit. The form and more information on the service can be found online at http://winnipegtransit.com/en/handi-transit/. This service may also be used after surgery when your driving is limited. Once you know your surgery date, you can complete the form and send it in. They will often issue you a registration number that will...
become effective the day of your surgery. If you are unable to drive or do not have someone to drive you, it is very important to arrange transportation before you go in for your surgery.

**How to Obtain Equipment**

In many situations people awaiting a knee replacement 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 Physiotherapist in the community to be assessed for the appropriate mobility aid if you feel you would benefit during your wait for surgery.

If you are having issues with self-care tasks (dressing, bathing, etc.) during your 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 your health care provider or surgeon for a referral to an Occupational Therapist before surgery if you feel you would benefit from the use of assistive devices during your wait.

You will be required to arrange your own walking aid for your return home form the hospital after surgery. If you are currently using your own walker or crutches, have someone bring them to the hospital if and when instructed to do so at your Pre-Admission Clinic appointment. If you do not have these items, you will be assessed by the Physiotherapist and instructed as to what type of
walking aid you will require for home during the Pre-Admission Clinic appointment or during your hospital stay.

**How Will I Pay for this Equipment?**

The medical equipment mentioned above that may be required both before and/or after total knee replacement is not covered through Manitoba Health or Pharmacare. It is the patient’s responsibility to obtain all prescribed equipment for their recovery. It is an excellent idea to explore your own medical equipment coverage in preparation for your surgery. 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 and contact information as well as your 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 of the cost of the medical equipment if recommended by a health 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 prescription for your insurance claim.
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)940-2655.
- 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 such as newspaper delivery, milk delivery, cleaning services, etc.
- You will need to arrange for transportation home from the hospital. Discharge times can vary throughout the day. You will typically be discharged between 1 to 4 days following surgery based on your safety with functional tasks and your mobility. Minimizing your length of stay is important to reduce your risk of acquiring a hospital associated infection. It is therefore important to have someone available to transport you home after surgery starting the day following your surgery. If family or friends are not available to help, you will need to contact a private agency. These are located in the yellow pages. Make sure the vehicle...
has enough room for you to sit comfortably and safely in the front passenger seat.

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

**Pre-Admission Clinic (Pre-Operative Assessment Clinic)**

In the weeks prior to surgery you will be contacted by the Pre-Admission Clinic at Grace or Concordia Hospital with an appointment. When attending this visit, please bring:

- All medications in their original containers (including vitamins and herbal products).
- Magazine/book and money or a snack/drink – the visit may be 1-4 hours in length!

At the clinic you may be seen by:

**Nurse**

The nurse will go over your medical history and answer any questions you may have about the surgery and hospital stay.

**Anaesthesiologist**

A member of the anaesthesia team may examine you and discuss the different types of anaesthesia. Further blood work or tests

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may be ordered. There may be a need to delay surgery while further tests are done to ensure it is safe to proceed. The anaesthesiologist and nurse will go over your medication list with you. They will tell you which medications need to be stopped prior to surgery. You will need to stop all vitamins and herbal medications 10 days before your surgery date.

Should you require the ongoing use of a CPAP/BiPAP machine for sleep apnea, you will be instructed to bring this to the hospital on the day of your surgery. NOTE: This machine must be in good working order. Surgery may be cancelled if the above requirements are not met.

**Physiotherapist**

A physiotherapist will check the movement and strength of your legs. You will be instructed on the exercises for after surgery. You will be given information on the mobility aid you will require after surgery.

***Please bring*** your Total Joint Replacement Checklist (next page 45) and your class attendance record (the back of the Hip and Knee Resource Center pamphlet) to your Pre-Admission Clinic appointment with you! The checklist can be removed to help guide you on the day before surgery and when preparing what to bring to the hospital.
Total Joint Replacement Checklist

Date of Surgery: _______________

What to do the day before surgery:

☐ Remove all nail polish from fingers and toes.
☐ Shower or bathe the night before surgery and/or the morning of surgery. Wash the surgical area with the special cleansing sponge provided (at Pre-Admission Clinic).
☐ Do not shave the surgical area.
☐ Do not eat anything after midnight the night before surgery (includes gum, candy). Clear fluids are permitted up to 2 hours before the advised arrival time at the hospital on the day of surgery.
☐ Take medications as instructed by the anaesthesiologist or nurse.

Items to bring on the morning of surgery:

☐ Dentures and Hearing Aids (dentures will be removed before surgery – have a labeled container for these items).
☐ CPAP/BiPAP machine if you have sleep apnea (must be in good working order).
☐ Glasses with a labeled case.
Items for support person to bring in the day of surgery
(Suggested time to bring the items in: ______ AM/PM)

***Please label all equipment!

☐ 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)
☐ Cooling Unit (ice machine) (only when indicated)
☐ Specific self-care aids/dressing aids if available (e.g. long handled shoe horn, sock aid, reacher)
☐ Other: ____________________________________

*** Mobility Aids such as a walker or crutches will be discussed with you during your Pre-Admission Clinic appointment with the physiotherapist. They will provide information on what equipment will be required and when/if it should be brought into the hospital.

** DO NOT BRING:
   ☒ Personal medications (unless instructed by the nurse or anaesthesiologist)
   ☒ Large amounts of money, jewelry or any other valuables
   ☒ Medic Alert Bracelets can be left at home

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During Your Hospital Stay
During Your Hospital Stay

When you come to the hospital the day of surgery, you will need to report to the admitting department. Once admitted, you will be directed to the Day Surgery area. You will be asked to change into a hospital gown. The nurse will start an intravenous (IV). You will then go into the operating room.

In the Operating Room

You will receive anaesthetic (usually a spinal or epidural). The anaesthesiologist will give you sedation to make you relaxed and comfortable. 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 until you recover from the anaesthetic. This usually takes 2-4 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 anaesthesia, you will be taken to your hospital room.

On the Surgical Unit

You will be ready to return home when:

- You are able to manage all your medications for discharge
- You are able to 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.

**Monitoring and Post-Operative Care**

- **Dressing** – There will be a bulky bandage over your knee. 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 dressing will be changed as needed during the hospital stay.

- **Drain** – A drainage tube **MAY** be coming from under the bandage. This drain removes the blood that collects in the joint after surgery and will be removed the day after surgery.

- **Intravenous** – You will get fluids through an intravenous (IV) line. This will remain in place until you are finished antibiotics and no longer need pain medication through IV. You should be eating and drinking well before it is removed.

- **Monitoring** – A nurse will take your temperature, blood pressure, breathing and 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 3-5 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** – At first you will need to focus on drinking fluids regularly as your appetite may be decreased. 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 anaesthesiologist 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 with pain pumps or orally (by mouth).

Pain pumps are used for the following:

- Epidurals
- Intravenous/PCA (Patient Controlled Analgesia)
- Local Blocks

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

**What is an epidural?**

An epidural requires a very narrow tube, called a catheter, to be inserted into your back. This is done in the operating room before your surgery. Pain medications and numbing medications are delivered by the pump into the epidural space (a space around the nerves in your back). This method gives you continuous pain relief and allows you to be more alert, sit and walk more easily.

**What is a PCA?**

A Patient Controlled Analgesia (PCA) pump injects pain medication into the intravenous (IV) catheter in your arm. This method allows you to keep your pain under control. To receive pain medication, you simply push a button. The medication starts to work fairly quickly because it goes directly into your bloodstream. You can push the button as often as you need to stay comfortable. The machine is programmed so that it will not give you more medication than is safe for you to have. It is important that you do not allow ANYONE ELSE to push your PCA pump button for you. You need to be awake enough to know that you need pain medication. Tell your nurse if the medication is not helping your pain enough even though you have used the PCA regularly. Your nurse will make changes until you feel your pain is better controlled. This is usually only in place for one or two days if required.
What is a nerve block?

Pain relief may be provided through a nerve block. This method involves a needle (or possibly a small tube) inserted close to the nerve above the joint where you had surgery. Local anaesthetic is injected or infused into this area. This will help to keep the surgical area feeling “numb” for a period of time after the injection or while the catheter (small tube) is in place.

What is an injection around the joint?

Several medications are 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?

If you have a pain pump, this will be stopped after one or two days and your pain will be controlled with oral medications (pills). The anaesthesiologist 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

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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 Celebrex, Diclofenac, Naproxen) – These medications are anti-inflammatories and may be given regularly twice a day.

- **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 hours as needed.

Giving you 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. Giving you long acting pain medication along with Celebrex, 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

These 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.

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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 are able to 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 extremely rare in people who take pain medication for a painful condition. If you have a previous history of substance abuse (alcohol or drugs), talk with the ward staff and they will monitor your recovery. 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 pain medications for a week or longer, their body may adapt to these medications. If they suddenly stop taking the medication, they may experience withdrawal symptoms such as headache, sweating and nausea. Withdrawal symptoms do not indicate an addiction but are possible expected side effects of opioid medications. These symptoms can be prevented by slowly reducing the dose of the drug over time 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 each day or every
couple of days can prevent the withdrawal symptoms. This can be done by taking one less pill every day until you are off all of the pain medications. 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 may get you up on the day of your surgery. This could involve getting up to the bed side chair or walking as tolerated. 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 not uncommon to feel dizzy, nauseated or even light headed the first few times you are up. It is important to tell the nurse or therapist if you experience these symptoms.

**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. With less activity you also tend to take shallow breaths which could lead to a chest infection. Remember to take 3-5 deep

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breaths and do a minimum of 10 foot and ankle exercises every hour you are awake.

The physiotherapist will assist you with your exercises following your surgery. Do not be surprised if you have difficulty with the exercises initially. As your body heals and the more you perform the exercises, the easier they will become. It is important to perform your exercises with the therapist but also to be performing the exercises you are able to do on your own 2-3 times per day. The full Knee Surgery Exercise Program is found in the Appendix section (page 83). This will include your Immediate Post-Op Exercises (starting immediately after surgery) and the Intermediate and Advanced Knee Exercises (the exercises for your rehabilitation with physiotherapy). This section can be removed for easier access to the exercise sheets. The Physiotherapist in the Pre-Admission Clinic or Pre-Operative Assessment Clinic may ask you to bring these sheets with you to the hospital for reference when starting the exercises after surgery.

Remember – Return to activity must be done gradually. If you have pain or swelling following an activity, you may need to do less of that activity for a while. If you feel good with regards to pain and swelling, you can gradually increase the time or frequency.

Upon return home:

**DO:**
- Continue with your exercises at home and progress as able
- Change positions frequently to prevent pain and stiffness
- Remember to wear supportive footwear. Footwear should be flat with a low, wide heel and rubber soles. Footwear should allow for slightly swollen feet after surgery

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DO NOT:

- Lie with your knee bent over a pillow
- Hold your breath while doing exercises or activities

Managing Pain and Swelling

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

✓ **Use cold/ice packs**
  - Make an ice pack by wrapping a towel around a bag of frozen vegetables such as peas or corn.
  - Apply the ice pack to the front of the thigh or over the knee for 10-15 minutes.
  - Apply as often as once every 2 hours.

**You could also use a cooling unit/cryotherapy unit if suggested for cooling the knee following surgery.**

✓ **Elevate your leg**
  - Lie on your back and support the entire length of your leg on pillows so that your heel is above the level of your heart (as shown).
Activities of Daily Living after Knee Replacement

Getting Into Bed

1. Sit at the edge of the bed. Pull yourself back on the bed until your thighs are fully supported.
2. Turn your body as you lift your legs onto the bed. You could use your other leg to support your sore leg or the handle end of a cane, a leg lifter or a belt hooked under the arch of your foot.

Getting Out of Bed

1. Push yourself up onto your elbows or hands. Slowly start to slide your legs to the edge of the bed, using your arms behind you for support. Slide your seat to the edge of the bed, slowly lowering your surgery leg to the floor.
2. With your surgery leg out front push yourself up to standing.

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Sitting

1. Back up to the chair until you feel it touch the back of your legs.
2. Slide your operated leg out in front.
3. Reach back for the armrests one hand at a time.
4. Slowly lower yourself down onto the chair.
   **Do not hold onto the walker while sitting.

Standing Up

1. Slide your operated leg out in front slightly.
2. Place your hands on the armrests and slowly push yourself up to the standing position.
3. As you come to standing, slide your operated leg back in line with your good leg.
4. Once you have your balance, place one hand at a time onto the walker.
   ** Do not pull up on the walker to stand.

** If a chair is too low for you, you could add a firm foam cushion to the seat to increase the height or raise the furniture up from underneath with furniture risers. Your feet should touch the ground comfortably when sitting (you may not be comfortable initially if your feet are unsupported).

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To get on and off a toilet, use the same procedure. You should use all of the equipment individually prescribed to you during your hospital stay by the Occupational Therapist (e.g. raised toilet seat, over arm toilet aid (Versaframe), commode, etc.)

Bathing/Showering

If you are planning on using a shower stall after surgery, you will likely not require any equipment to manage independently once you have been given the clearance to shower (once your staples or sutures are removed). If the Occupational Therapist recommended any equipment for safety, please ensure the equipment is in place before resuming your showering activities.

If you will be showering in a tub environment, you may require the use of a bath seat and/or grab bars for access to the tub following your knee replacement surgery. This will be assessed for you during your hospital stay.
To get in and out of the tub:

1. Back up to the side of the tub until you can feel the edge of the tub at the back of your legs and you are in line with the bath seat.
2. Reach back for the bath seat and/or the grab bar.
3. Lower yourself down onto the bath seat keeping your operated leg slightly out front.
4. Pull yourself back on the seat and then slowly lift your legs over the edge of the tub as you pivot on the seat.
5. Reverse this method to exit the tub.

✓ You can use a leg lifter or the handle end of the cane to help you lift your leg over the edge of the tub.
✓ You can use long-handled aids to allow you to reach your legs and feet as required.
Dressing

✓ Dress your operated leg first and undress it last.
✓ Use the devices prescribed in the hospital by the Occupational Therapist.

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.

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, pouch or tray can be obtained from a medical vendor and attached to the front of your walker. In some cases, a small plastic bag 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.

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Getting In and Out of Vehicles after a Knee Replacement

1. Move the seat back as far as possible and recline the seat 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 dashboard or the seat surface for support and slowly lower yourself onto the edge of the seat. (Do not use the door for support as it may move)
4. Pull yourself back on the seat as far as you can and then lift your legs into the vehicle one at a time as you turn your body. (You may want to use a plastic bag on the seat for two way slide – just ensure you remove the bag before the car is in motion. You may also use the handle end of your cane to help lift your leg into the car)
5. Reverse this procedure to get out of the car.

Driving a Vehicle

If you drive a standard vehicle or have had a right knee replacement, do not drive until approved by your surgeon!

DO NOT DRIVE if you are still taking narcotic medication!

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Walking

Immediately following surgery, a majority of patients use a walker with 2 wheels. When using a walker:

1. Advance the walker forward.
2. Step forward with your operated leg to the middle of the walker. (The physiotherapist will instruct you on the amount of weight you can put through your leg after surgery)
3. Lean through your hands and then step to the middle of the walker with your non-operated leg.
4. As your pain decreases, you can progress to a normal walking pattern with the walker as tolerated.

If you would prefer to use a 4 wheel walker or crutches instead of the 2 wheel walker, this would be assessed with you in the hospital before discharge to ensure this option is safe for you.

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Stairs

When you have to go up or down the stairs following knee replacement surgery, you should have a railing or 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 surgery 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 BAD

Stairs will be assessed with you during your hospital stay IF you are required to do stairs with your discharge home.

As you become stronger and are able to take equal amounts of weight on both legs you may begin to go up and down the stairs using alternating legs.

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Bilateral Knee Replacements

If you have had both knees replaced during the same surgery, the strategies reviewed in this section 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 of your chair or bed to ensure you will be able to manage these different transfers after surgery. Please practice these techniques at home before surgery to ensure your furniture (chairs/bed) will be an adequate height for you to make these transfers achievable. If you have any concerns about heights of furniture or managing these transfers, please discuss them with a therapist in the community, a therapist at the Prehabilitation Clinic or the physiotherapist at your Pre-Admission Clinic appointment.
After Joint Replacement Surgery
After Joint Replacement Surgery

A. Caring for Yourself at Home

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

- **Staple Removal** – Staples will be removed on your first follow-up appointment at approximately 10-14 days after surgery. 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** – You will be able to take a shower 2-3 days after your staples are removed as long as there is no drainage or open areas present. You should always follow the specific direction of your health care team if different from the information
provided here. You can resume bathing after an additional 5-7 days or as directed by your surgeon. If you wish to shower before your staples are removed, please discuss options for an alternate dressing with your nurse or surgeon.

- **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 knee that is not relieved with rest, elevation and pain medications.
  - Increasing redness around the incision.
  - Thick, yellow, foul smelling drainage from the wound.
  - Fever, chills or flu-like symptoms

**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 (or cooling unit) to the knee regularly (every 2 hours as needed). Try applying the ice pack before and after exercise.
- 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.

October 2017 (Knee)
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.

❗ Sudden sharp pain or tightness in your chest or shortness of breath.

Blood Thinners

The risk for blood clots is the highest in total knee patients in the first two weeks 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 provided at the time of your surgery. Generally the medication should continue to be taken at the same time as it was in the hospital.

Constipation

Many of the drugs you will be taking for pain relief can cause constipation. Reduced activity can add to this problem.

What can I do to prevent constipation?

✓ Drink plenty of fluids (6-8 cups of fluid/day)
✓ Eat foods high in fiber (i.e. whole grain breads/cereals, bran, prunes and other fruits, vegetables, nuts, legumes).
✓ Keep as active as possible and when you have the urge to move your bowels do not delay!
✓ Purchase a stool softener at the pharmacy. (Discuss with your pharmacist what would be best for you)

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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 many shorter walks during the day. Gradually increase the distance as tolerated. To determine what you are able to tolerate you should listen to your body. Use your level of pain and swelling as a gauge.

Follow Up Physiotherapy

Following your discharge home from the hospital, it is encouraged you attend some form of rehabilitation. You may choose to attend your therapy one on one at a private clinic or private facility where knee replacement classes are held. These choices can be discussed further with the physiotherapist at Pre-Admission Clinic or during your hospital stay. The rehabilitation following your surgery consists of exercises for strength and flexibility and is meant as a progression to the exercises you are provided immediately after surgery. The length of time you will need to attend therapy following your surgery will depend on your progress with range of motion and strength.

Remember to continue with the exercises reviewed in the hospital while waiting to start your private or group therapy!!

For your information, a list of private physiotherapy clinics can be found on the Manitoba Physiotherapy Association website at www.mbphysio.org or by contacting the College of Physiotherapists of Manitoba at www.manitobaphysio.com. For more information on facilities offering rehabilitation options, you can contact the Reh-Fit Center (204-488-8023) or the Wellness Institute (204-632-3910).

October 2017 (Knee)
Mobility Aid Progression

Most people will continue to use the walker for 2-4 weeks after they leave the hospital as it will provide support to your new knee, 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 knee
✓ 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 operated 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).
B. *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. 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.

Your surgeon may want to see you regularly following surgery at intervals (i.e. every year or every two years) as determined by your surgeon.

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

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

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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 determine with you the date you can return to work based on the type of work you do. 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, while others may return easily to their previous duties. Those engaged in heavy manual labor may have to discuss the possibility of vocational/job counselling with their surgeon.
Airport Security

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 hand held wand over the area to confirm this. You should not require a letter from your surgeon indicating you have had a joint replacement (this may want to be clarified if 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 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, such as a colonoscopy, where you may require antibiotic treatment.

October 2017 (Knee)
Appendix
Appendix

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 start with the basic post-op exercises. You can add elements of the intermediate and advanced knee exercises as well if tolerated. Please see a Physiotherapist in the community or attend classes at the Hip and Knee Resource Center for a more individualized program and/or more instruction.

Post-Op Exercise Progression
The exercises you will take part in after knee 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 knee surgery exercise program immediately following surgery. You will continue with this basic program until you start your rehabilitation in private physiotherapy or another community setting. At that time more advanced exercises will be added to continue to progress your range of motion, strength, flexibility and balance. These more advanced exercises are outlined in the Intermediate and Advanced Knee Exercises.

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

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Glossary of Exercise Terms:

Flexion = bend

Extension = straighten

Static – tightening your muscle without needing to move your knee

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

Repetitions – the number of times you repeat a certain exercise

Sets – the number of time you repeat the specified repetitions in a day
Knee Surgery Exercise Program
________________ Hospital
Phone: (204) ___-____

➢ Only do the exercises that have been checked off indicated by your Physiotherapist. (the bandage indicates the surgery leg)
➢ Do 2 – 3 sessions each day.

1. **Static Quadriceps:**
   Lie on your back or in semi sit position as shown. Push your knee flat into the bed tightening the muscle on the top of your thigh. Hold 5 Seconds. Relax. Repeat 10 Times

2. **Extension Stretch:**
   Lie on your back. Place a 6” roll under your heel. Tighten your thigh, pushing the back of your knee towards the bed. Hold 5 Seconds. Relax. Repeat 10 Times

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3. Hip/Knee Flexion:
Lie on your back. Bend your knee as much as you can, keeping your foot on the bed. Hold for 10 seconds.
Slowly lower your leg. Repeat 10 times.

4. Hip/Knee Flexion with assist:
Place sheet around the foot of the surgical leg. Use your hands to pull your knee up into more flexion, as shown. Hold for 10 seconds.
Return to start position. Repeat 10 times.

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5. Quadriceps Over Roll:
Lie on your back. Place a 6” roll under your knee. With the knee resting on the roll, lift your heel up off the bed until your knee is straight. Hold 5 Seconds. Slowly lower your heel back onto the bed. Repeat 10 times.

6. Seated Knee Flexion:
Sit in a chair. Bend your operated knee as much as you can, keep your foot flat on the floor. 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. Repeat 3-5 times. You can also use your non operated leg to push your operated leg to get more bend.
7. Side to Side Weight Shift:
Practice putting more weight through your operated leg by shifting your body weight from side to side and front to back as shown below.
Perform for 5 minutes.
Intermediate Knee Exercise Booklet

A. Straight Leg Raise:

Lie on your back. Bend up your good knee. Keeping your operated knee straight lift your leg 10-12 inches off the bed. Hold 5 Seconds. Slowly lower your leg back onto the bed. Repeat 10 times. Work up to 3 sets.

B. Seated Knee Extensions:

Sit in a chair with your thighs supported. Straighten your operated leg as shown. Hold 5 Seconds. Slowly lower your foot back to the ground. Repeat 10 times. Work up to 3 sets.
C. Seated Knee Extension Stretch:

Sit on a chair with your operated leg on a chair in front of you. Keep your back and your operated leg as straight as possible. Slowly lean forward until you feel a stretch down the back of your leg. Hold 30 Seconds. Repeat 2-5 Times. ADVANCED: Apply a gentle pressure to the front of the knee (as shown).

D. Stork Stand:

Stand holding onto a solid source of support. Try to stand on your operated leg (as shown). Work up to being able to stand on the operated leg for 30 seconds. ADVANCED: Once you are able to stand on the operated leg for 30 seconds, try stork standing while holding on with one hand.
E. Hamstring Curls:

Stand holding onto a solid source of support. Slowly bend up your operated knee, bringing your heel towards your buttocks. Hold for 5 Seconds; slowly lower your leg back down. Repeat 10 Times. Work up to being able to do 3 sets. Perform the same exercise but standing on your surgery leg (bending up your good leg). Repeat 10 Times. Work up to 3 sets.

F. Clamshell Hip Abduction

Lie on your side with your operated knee on top. Place a pillow between your knees. Slightly bend your knees as shown. Keep your heels together; try to raise your knee up off the pillow opening your legs from the hip (like a clam!). Hold for 5 seconds. Repeat 10 Times. Work up to 3 sets.
G. Bridge

Bend your hips and knees so your feet are flat on the bed as shown. Tighten your seat muscles and raise your buttocks off the bed. Hold for 5 seconds; do not hold your breath. Slowly lower to the starting position. Repeat 10 times. Work up to 3 sets as able.

H. Stair Bend/Flexion Stretch:

Stand facing the stairs, holding onto the railings. Place your operated leg up onto the second step. Bend your operated knee and move your body forward until you feel a stretch across the front of your knee. KEEP YOUR BACK STRAIGHT. Hold for 30 seconds. Repeat 5 Times.
I. Sit To Stand:

Sit in a chair as shown. Try to bend your operated knee as much as possible. Stand up using as little assistance from your arms as possible. Slowly sit back down. Repeat 10 Times. Work up to 3 sets.

ADVANCED: Try to sit and stand without using your arms to help.

J. Calf (Gastrocs) Stretch

Position yourself against the wall as shown with your sore leg behind you. Point your toes directly towards the wall and keep your back heel down. 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 the lower leg (calf) on the sore leg. Hold 15-30 seconds, repeat 2-4 times with each leg.
**L. Side Lying Abduction:**

Lie on your side with the operated leg on top as shown. Place a pillow between the knees. Keep both legs straight; try to lift your leg up off the pillow. Hold for 5 seconds. Return to start Position. Repeat 10 times, work up to 3 sets.

**M. Step Ups/Step Downs:**

Stand in parallel bars, holding onto both rails for support. Place your operated leg up onto the step. Straighten your operated leg to lift your un-operated leg off the floor. Slowly bend your operated knee to lower the un-operated leg down to the ground. Repeat 10 times, work up to 3 sets. ADVANCED: Increase the height of the step as you are able.
N. Side Step Ups/Step Downs:

Stand facing the railing with your operated leg closest to the step. Place your operated leg up onto the step. Straighten your operated leg to lift your un-operated leg off the floor. Slowly bend your operated knee to lower the un-operated leg down to the ground. Repeat 10 Times, Work up to 3 sets. ADVANCED: Progress the height of the step.

O. Up and Down Stairs:

Stand holding onto rails. Step up on the first stair. Step up to the next step with your other leg. Climb up and down using alternate legs. Try going up and down the stairs.

Beginners: Start with 2-3 stairs with this pattern.

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

Stand next to something solid for support. Lift your non operated leg up off the floor. Try to stand on your operated leg without holding on. If you feel off balance, place your hands on the surface. Try to hold for 30 Seconds.

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

**Q. Mini Squats:**

Begin standing near a solid source of support (counter, back of a chair). Keep feet shoulder width apart. Squat down as if you were going to sit in a chair. Hold for 5 seconds. Repeat 10 Times. Work up to 3 sets. Use support as needed, progress to being able to squat without using support. Advanced: Stand against the wall, ball between the knees. Come down into a squat position. Hold for 5 Seconds. Repeat 10 times.
Some of the information in this booklet has been adapted from the Vancouver Coastal “Before, During & After Joint Replacement Surgery”.

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