



Hip and Knee Navigator  
250-558-2109

# BEFORE, DURING & AFTER **Knee Joint Replacement Surgery**

Please bring this guide to the hospital and to all physiotherapy appointments

Name: \_\_\_\_\_

Surgery Date: \_\_\_\_\_

Surgeon: \_\_\_\_\_

Special Instructions: \_\_\_\_\_

**[www.interiorhealth.ca](http://www.interiorhealth.ca)**

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**To prevent any delays in your recovery, please see the following risk factors and helpful tips on how to manage them.**

<b>RISK</b>	<b>ACTION</b>
Trouble walking safely	See pages: 22–23
Trouble carrying out basic daily activities	See pages: 11
No one to assist you at home after surgery	See pages: 10–12
Trouble arranging needed equipment after surgery	See page: 12
Home set up	See page: 11 Contact local health centre or family doctor.
Regular alcohol, tobacco or other addictive substance use	Consult family doctor or specialist.
Pain that affects sleep, activities, appetite and/or mood.	See pages: 5–7, 20 Consult family doctor
Depression or low mood	Consult family doctor
Feeling tired or low hemoglobin	Consult family doctor
Unstable health	Consult family doctor or specialist

*Acknowledgements: This booklet adapted from booklet*

“Before, During and After Your Total Joint Replacement” Booklet, developed by Vancouver Coastal Health Authority as well as “Your Total Hip Replacement” and “Your Total Knee Replacement” by The Physical Therapy Department of The Mary Pack Arthritis Program and The Reconstructive Orthopedic Health Care Team at Vancouver General Hospital.

# Introduction

Joint replacement is major surgery that needs a lot of hard work and healing. People who are prepared, have a smoother recovery; this means getting you and your home ready. During the wait for surgery, you need to improve your health and fitness. This book will describe what you will do to be successful before, during and after surgery.

Hospital stays are short. It is healthier for you to recover at home where you will eat, sleep and heal better. Most people go home within one to three days after surgery with help from family or friends. The hospital team will help you get moving and safely return to daily activities.

If there is a difference between this book and instructions from your surgeon, family doctor or health care team, **FOLLOW THE INSTRUCTIONS OF YOUR SURGEON / DOCTOR / TEAM.**

## About Knee Replacement Surgery

The common cause of joint disease is arthritis. Surgery is only for those people with badly damaged joints that can't be helped by exercise, weight loss, medications, etc.

### **Surgery may:**

- relieve pain
- improve walking, standing, dressing, bathing, etc

Most people have good results following their first joint replacement. With daily exercise, the new joint usually lasts 15-20 years or more.

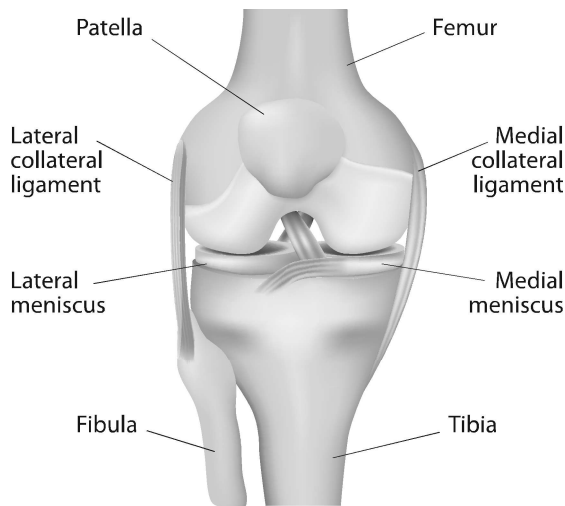
### **The type of surgery will be decided by your surgeon based on your:**

- |                                    |                  |
|------------------------------------|------------------|
| • age                              | • general health |
| • bone strength                    | • weight         |
| • shape and condition of the joint | • activity       |

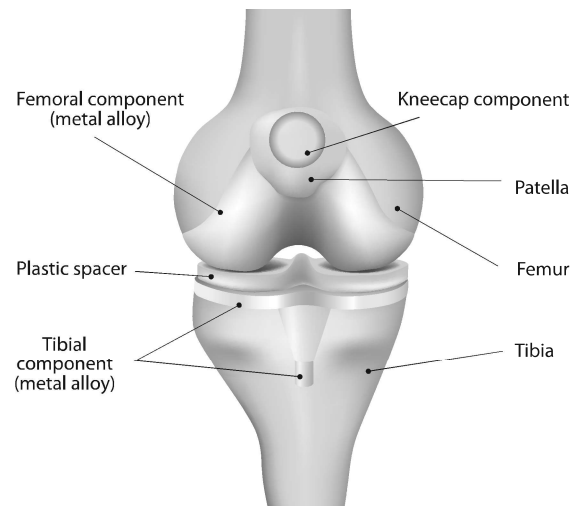
## Total Knee Replacement consists of three parts:

1. **Femur (thigh bone)** – a metal piece replaces the bottom part of the femur and has a groove in which the knee cap (patella) moves.
2. **Tibia (shin bone)** – a metal and plastic part fits on the tibia and forms a smooth surface so the upper metal piece can glide when you move your knee.
3. **Patella (knee cap)** – a plastic button is attached to the back of the knee cap to allow smooth movement (the plastic button is not always needed, this will be decided by your surgeon).

### **Knee Joint**



### **Replaced Joint**



## Cemented Joints

One or both parts are held by bone cement that bonds to the metal. It hardens quickly to allow weight bearing and walking the same day as surgery.

## Uncemented ("porous coated") joints

~~The parts are~~ coated with tiny beads. New bone grows into the spaces between the beads to make a strong bond. The new bone growth takes 6 – 12 weeks and you may need to keep your weight off your new joint when moving or walking.

You will be able to weight bear as tolerated

## Unicompartmental Knee Replacement Surgery

When only one side of the joint is damaged, it may be possible to replace just this part. The hospital stay can be shorter.

## **Revision Joint Replacement Surgery**

If your new joint fails, a repeat surgery may be needed. The old parts may be replaced with new ones. Repeat surgeries are more complex and the parts may not last as long as the first surgery. Reasons for joint failure may include: loosening/wearing of the joint, bone loss or infection.

To take care of your new joint - See "Recreational Activity Guidelines", page 28

## **Pain Management – Before Surgery**

### **Why is there pain?**

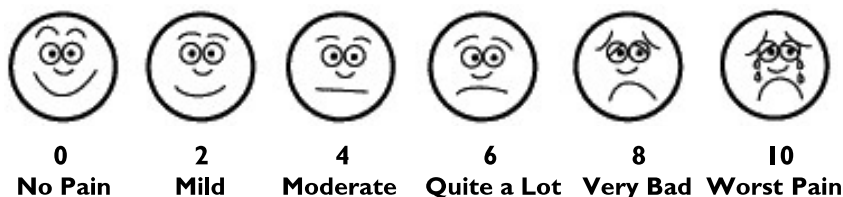
- Pain may be caused by tissue damage, infection, swelling, joint injury or osteo/rheumatoid arthritis:
  - In osteoarthritis, the joint surface that acts as a cushion is worn down. This leads to swelling which causes pain or stiffness.
  - Rheumatoid arthritis is a disease where the immune system attacks the joint surface and tissues which causes swelling, stiffness and pain.

### **Why is pain control important?**

- Pain can affect your daily activities and quality of life.
- Untreated pain may lead to anxiety, depression, poor sleep, high blood pressure and poor wound healing.
- If you are feeling pain, talk to your doctor and/or health care team about a pain plan.

### **When talking about your pain, include the:**

- place
- type (throbbing, stabbing, dull)
- things that change or cause pain
- rate of your pain on a scale of 0 – 10



### 3 Main Types of Pain Medication



1. **Acetaminophen** (Tylenol® - Long acting or arthritic formula)
  - Works by lowering pain signals
  - Discuss with your doctor if you regularly consume alcohol
  - **CAUTION:** Do not exceed 4,000 mg per day
  
2. **Non Steroidal Anti-inflammatory Drugs** - NSAIDS - ibuprofen (Advil®) (Motrin®), ASA (Aspirin®), diclofenac (Voltaren®), celecoxib (Celebrex®), naproxen (Naprosyn®)
  - NSAIDS are used to treat pain and swelling
  - **CAUTION:** Let your doctor know if you have a history of stomach ulcers, heart failure or kidney disease
  
3. **Narcotics (Opioids)** – codeine, oxycodone, morphine, hydromorphone (Dilaudid®), fentanyl
  - Work by blocking the pain signals
  - **CAUTION:** Discuss use of narcotics (opioids) with your doctor if you regularly consume alcohol or other addictive substances

#### These pain medications are available in different forms:

- Immediate release (fast acting) medications can work in as little as 30 minutes, but last only a few hours and may be taken as needed.
- Sustained release (long acting) medications which work in 1 to 2 hours but last longer.

Your doctor may order all these medications together as they help to control your pain in different ways.

## Side Effects of Pain Medications

### NSAIDS:

Side effect	Management
Stomach upset	Take with food. Coated tablets may help
Bleeding	Let your doctor/pharmacist know if you have a bleeding disorder or are on a blood thinner
Allergy	Let your doctor/pharmacist know if you have an allergy or breathing problem with ASA (Aspirin®) or any NSAID
Kidney Function	Inform the doctor/pharmacist if you have poor kidney function

### Narcotics (Opioids):

Side effect	Management
Sleepiness	Allow a few days to get used to the sleepiness. Do not drive until you know how the medication affects you. Do not mix with alcohol or other medications that may cause drowsiness without talking to your doctor.
Dry Mouth	Use a sugar-free candy or lollipop
Nausea/Vomiting	Take with food. Lie down if you have nausea. You may also use Gravol® (dimenhydrinate)
Constipation	<b>Prevention is key!</b> Drink lots of fluids (up to 8 glasses a day). Use a laxative and/or stool softener under doctor advice
Allergy	Let your doctor/pharmacist know if you have an allergy to any narcotics (opioids)

## **Common concerns about taking pain medications**

**Tolerance:** Over time you may need more pain medication to get the same effect. Medication or doses may need to be changed by your doctor to get the best pain relief.

**Physical dependence:** Over time, your body may adapt to pain medication. When the medication is stopped suddenly, you may feel withdrawal symptoms such as headache, sweating and nausea. This can be avoided by lowering your dose over time.

**Addiction:** Addiction to these drugs rarely occur when taken for pain relief. People may confuse addiction with physical need for pain relief. These are not the same.

If you have a history of addiction to alcohol or drugs talk to your doctor to develop a pain plan.

## **Other Pain Relief Options**

**Sleep –** Sleep is important to lower your pain.

**Heat and cold –** Follow your doctor's orders.

**Relaxation exercises –** May help you rest, sleep and distract you from pain. Use music to relax the mind and body. Breathing or meditation can help you lower stress and heal.

**Walking aides –** A cane, walker or crutches can take stress off your joint and lower your pain.

**Talk with an occupational or physiotherapist –** They will teach you how to use equipment to move, walk and do your activities more comfortably.

**Joint protection –** Using a brace or splint may help. Talk to an occupational or physiotherapist for information.

**Massage –** A therapist will massage your muscles to relax and lower the pain. Arthritic joints are tender so tell the therapist about your condition.

**Exercise programs –** A program may be set up to help you become more fit. Contact the Arthritis Society or your local community center.



# Optimizing Your Health

## Get Your Body in Shape

It is important to get in the best physical shape possible. **Work on building your strength and staying active!**

After surgery, you will rely on your arm strength. See a private physiotherapist, fitness trainer or aquatic/Osteo Fit class that supports people with arthritis.

The Arthritis Society is an excellent resource. Contact the Arthritis Answers Line at 1-800-321-1433 or [www.arthritis.ca](http://www.arthritis.ca).

Choose low-impact activities like swimming, water aerobics, stationary cycling, or chair aerobics. If exercising is new to you, **consult your family doctor to ensure there are no health concerns before starting.**

**Avoid activities that increase pain in your joint.** Your activities should be as pain-free as possible.

## Mental Wellness

Anxiety or worry related to an upcoming surgery is normal. There are ways to decrease your anxiety, which can improve your surgical experience and even your recovery.

Some people do best when details and information regarding their surgery are clear to them. Do you have outstanding questions that your care team can answer?

1. \_\_\_\_\_
2. \_\_\_\_\_

Some people do best when they have distractions to take their minds off their upcoming surgery. Some healthy distractions and coping strategies that may be helpful are:

- Deep breathing
- Relaxation methods (mindfulness, grounding & progressive muscle relaxation)
- Quiet activity: reading, puzzles, listening to music, movies, visiting with friends / family, time with pets, being outdoors, meal prep / baking, self-care i.e. hair cut, shave, bath, massage, sleep, light exercise, yoga.
- Limit the time you spend worrying
- Consider what you would say to a friend in the same situation

My healthy distractions:

1. \_\_\_\_\_
2. \_\_\_\_\_

## **Community Resources**

### **Helpful Websites:**

Anxiety Canada

<https://anxietycanada.com/>

Canadian Mental Health: Bounce Back program

Google search: Positive Coping with Health Conditions

## **Smoking Cessation**

Smoking / vaping is bad for your health. What you may not realize is smokers who have surgery are twice as likely to have major complications. You can change this!

If you stop smoking before surgery and during recovery you will:

- Heal faster
- Improve your breathing
- Improve blood / oxygen flow to, and reduce stress on your heart
- Shorten your hospital stay, GET HOME SOONER!!

An effective way to quit smoking is a combination of counselling and Nicotine Replacement Therapy. Talk to your care team about the best plan to quit. This will significantly improve your chances of having a smooth recovery.

## **Community Resources**

Quit Now! Phone 1-877-455-2233 or Text: QUITNOW to 654321

[www.quitnow.ca/join](http://www.quitnow.ca/join)

Access a free 3 month supply of either nicotine gum or patches, or a free prescription for smoking-cessation drugs, with a Pharmacist or physician's prescription.

# **Healthy Eating**

## **Nutrition**

Preparing for surgery is like training for a race. Having surgery is stressful on your body. Good nutrition is important to help prepare your body for surgery and to help with healing afterwards. Eating a healthy diet rich in protein and with enough energy, can prevent complications. Choose a variety of healthy foods.

## **Protein**

- Choose 2 to 3 servings of meat or alternatives each day (meat, eggs, nuts, seeds, beans, tofu)
- Choose 2 to 3 servings of dairy products each day (milk, yogurt, cheese)

## **Energy**

- Eat 3 to 6 times per day, spread across the day
- If you have a poor appetite or have been losing weight, try:
  - Eating small amounts more often
  - Include a fat source at each meal such as oil, butter, margarine, cream, sweet treat and nuts
  - Drink energy rich beverages between meals, such as milk, juice or nutritional supplement drink such as Ensure, Boost, Carnation Instant Breakfast or Glucerna
  - Avoid foods labelled "light", "low calorie", "Reduced Fat", "fat-free", "reduced sugar". Choose full fat yogurt and cheese, whole milk. Unless you have been told you need to lose weight.
  - Have ready-made frozen meals and prepared snacks on hand (i.e. granola bars, cheese and crackers, pudding, nuts, trail mix)

## **Diabetes**

- Wounds take more time to heal for people who have diabetes. You can optimize your healing by improving your blood sugar management.
- Goal for blood sugar levels should be 4 to 10 mmol / L.
- Goal for HgA1C (3 month average) is less than 7%

## Community Resources

Call 8-1-1 Dietitian services at HealthLink BC

Diabetes Canada: <http://www.diabetes.ca>

Meal delivery Service: <http://www.bettermeals.ca>

## Healthy Eating for Everyone

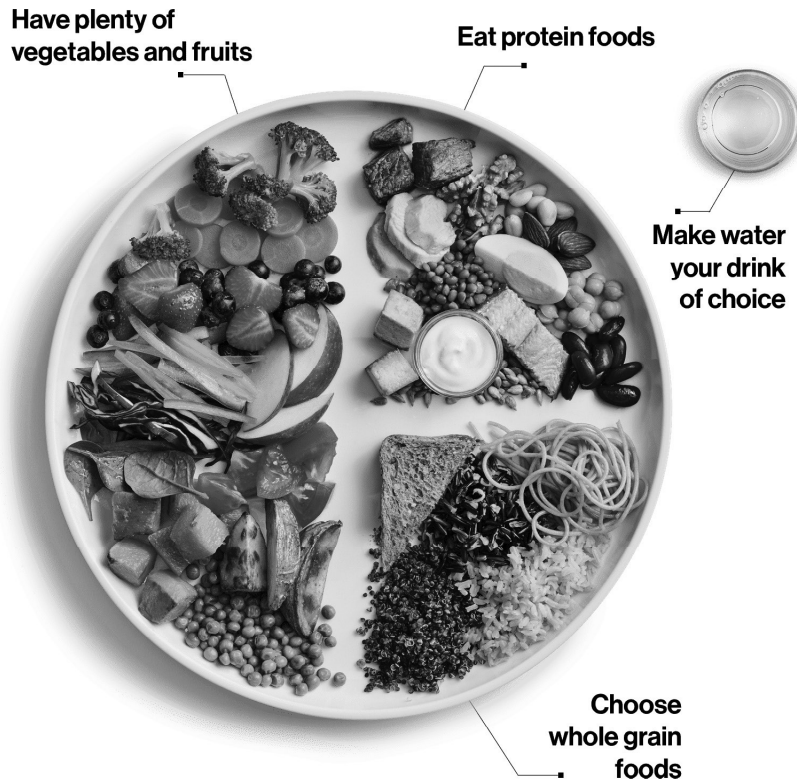


Image courtesy of  
[food-guide.canada.ca](http://food-guide.canada.ca)

## The following are important:

**Iron** is needed to build up hemoglobin. Hemoglobin in your blood carries oxygen through your body. If your hemoglobin is low (anemia), you may feel tired, dizzy and weak or get short of breath easily. Good sources of iron include meat, beans, tofu, some green leafy vegetables and fortified whole grains.

**Calcium** heals your bones and keeps them strong. Good sources of calcium include: dairy, dark leafy greens and nuts. Note: Drinking more than 4 cups of coffee or caffeinated products each day will take calcium from your body so limit these items.

**Vitamin D** helps your body absorb calcium. Look for vitamin D-fortified foods and get 15 minutes of sunshine every day.

**Vitamin B12 and folate / folic acid** prevent some types of anemia. Good sources of vitamin B12 include: meat, dairy and eggs. Good sources of folate/folic acid include: leafy green vegetables, beans, fortified grains and orange juice.

**Protein** is needed for healing. High protein foods include: meat, dairy, eggs, beans and nuts. Include protein at every meal.

**Bowel health:** Constipation is a common side effect of pain medications and less activity. You should take enough fibre (from plants) and fluids to keep your bowels moving.

## Healthy Weight

If you are overweight, you can safely lose about 2 pounds a week. The best weight loss is through healthy food choices and activity.

[ 1 extra pound = approximately 3–6 POUNDS OF FORCE on your knees and hips ]

Being too thin can make it harder for your body to heal.

Talk to a dietitian if you are overweight or too thin. To find out more information on nutrition or specific nutrients:

Call 811 to speak to a dietitian or go to [www.healthlinkbc.ca](http://www.healthlinkbc.ca)

Dietitians of Canada Website: [www.dietitians.ca](http://www.dietitians.ca)

## Planning for Discharge

You will require help with shopping, meals, housekeeping and sometimes personal care. **You MUST identify someone as your support person to help you after discharge.** Someone **MUST** stay with you 24 hours a day, for at least the first 3 days, and be available for 10 – 14 days after this.

You **MUST** arrange transportation home from the hospital. If family or friends can not help, you may choose to contact a private agency (listed under Home Support in the yellow pages). If you are having difficulty managing at home now, or are concerned about managing at home after your surgery call BC Healthlink at 8-1-1 for information about local resources.

## Helpful Hints

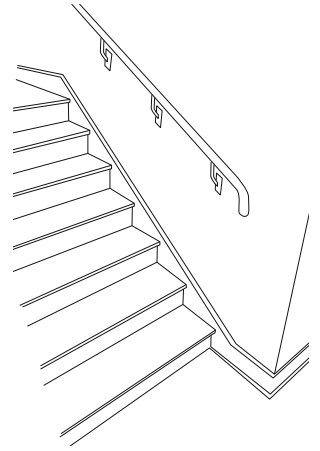
- Arrange for someone to look after your home (i.e. water plants, care for pets and pick up mail)
- Your ride home should have space for you to sit in comfort in the passenger seat
- You may be eligible to use HandyDART, for more information – See “Transportation”, page 38

# Preparing Your Home

You need to make changes in your home BEFORE surgery.

## Stairs and hallways

- Install a railing along inside and outside stairs
- Remove rugs, cords, clutter and anything that could trip you
- Remove all plant items from steps
- Remove mildew or ice/snow from outdoor steps
- Have good lighting and use night lights to show a clear path to the bathroom



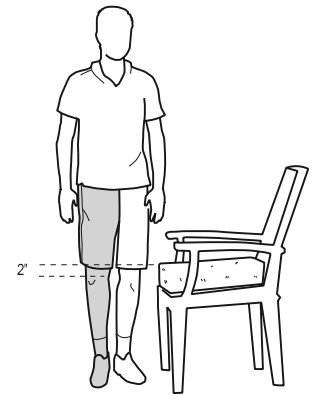
## Bathrooms

- Install a grab bar or hand rail in your shower or bath
- Remove sliding glass doors from bathtubs and install a shower curtain
- Be sure that your shower or tub has a non-slip coating or mat
- Install a hand-held shower head
- Use a raised toilet seat



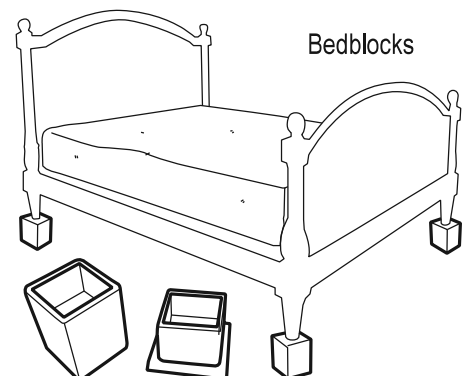
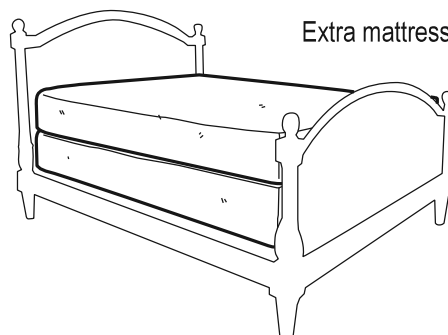
## Kitchen

- Move items you use often to be safely reached.
- Buy frozen meals or freeze your own. Stock up on canned food and other basic items. See "Health Care Resources", page 38, for more information on Meal Catering
- Have a high stool for sitting when doing activities at a counter



## Furniture

- Add extra firm cushion or raise height of chairs (chair should have a firm back and arm rests)
- Check that the top of your mattress is at least as high as your knee. If it is too low place the frame on blocks or add another mattress.



## Equipment

You will use a walker or crutches to get around, and everyday activities such as using a toilet, dressing, cooking or carrying items may be difficult.

### **You may need the following:**

- long-handled reacher (grabber)
- long-handled shoe horn
- sock aid
- loose, comfortable clothes
- extra-firm cushion – 4 in. x 16 in. x 18 in.
- safe supportive shoes that either slip on or do up with elastic laces or velcro
- raised toilet seat
- long handled bath sponge
- bath transfer bench/shower seat



Your occupational or physiotherapist will show you how to use these devices in your education class or in the hospital.

## How to Get Equipment

**Red Cross Depots** or service clubs/health units have crutches, walkers, canes, raised toilet seats and grab bars to borrow free of charge for 3 months. You will require a referral from your health care team to borrow equipment. Medical supply stores have most equipment you need if you wish to purchase.

**At least one week before your surgery**, arrange purchase or pick up your equipment from the Red Cross or service club/health unit. There are Red Cross Depots throughout Interior Health.

## Preparing Yourself for Surgery

### **The Pre-Surgical Screening (PSS) Program will ensure you have:**

- a review of your physical history and medications
- screening tests completed
- teaching about what to expect before, during and after your surgery
- a chance to ask questions so that you feel ready for your surgery

**Anesthesia** - Your anesthetist will discuss options with you to help choose the best anesthetic. Options include:

- **Spinal anesthetic** blocks feeling from the waist down. You may also be given a drug to help you relax.
- **General anesthetic** puts you to sleep during the surgery.

**Delirium** - Notify your healthcare team if you had delirium (confusion) with other hospital stays.

If you drink alcohol regularly, you are at risk for delirium related to **alcohol withdrawal**. For six weeks before surgery, limit alcohol to no more than one drink (8 ounces of beer, 3 ounces of wine or 1 ounce of spirits per day).

**Infection** - Call your surgeon's office if your surgery is within a few days and you think you have an infection (e.g. sore throat, infected cut, bladder infection, boil, etc.).

**Blood Clots** - Tell your surgeon and health care team before surgery if you have had a clot in the past.

**Medications** - One week before surgery, stop or adjust medications, vitamins, and supplements as you were told in your pre-surgical screening call or visit.

**Hair Removal** - **DO NOT** remove hair in any area of your surgery for 7 days PRIOR

## **Getting Ready for Surgery – A Checklist to Help you Prepare**

**As soon as you have seen your surgeon, begin working on the following:**

- ☐ Consult a physiotherapist or fitness instructor for an exercise program
- ☐ Begin a healthy eating plan.
- ☐ Contact your family doctor if:
  - pain is altering your sleep, appetite or activity.
  - difficulty walking due to severe pain or unsteadiness.
  - feeling depressed or sad for longer than two weeks.
  - having trouble dressing, bathing, preparing food, etc.
  - prepare your home for easy use and safety.
- ☐ Consider who will support you when you go home. You will need someone in your home for the first 72 hours and then available for 10 to 14 days until you can move around easily.

### **3 months prior to surgery:**

- ☐ Make plans with your support person.
- ☐ Have a check up with your family doctor and have your hemoglobin checked. If you have any medical issues, see your specialist to ensure that you are in the best possible shape.
- ☐ Take any iron supplements ordered by your doctor. Eat iron rich foods.



**1 week before surgery:**

- ☐ Get all required equipment.
- ☐ Pack clothing for hospital stay.
- ☐ Confirm support person will be available on discharge

**Day Before Surgery:****Please carefully follow:**

- Instructions on when to stop eating and drinking before your surgery
- Instructions on which medications to take the morning of surgery
- Instruction on how to clean/prepare your skin
- Use a new bar of regular soap or liquid soap to shower or bathe the evening before and wash your hair

**DURING Your Hospital Stay****Day of Surgery:**

- Have a shower or bath before coming to the hospital
- **Do Not** wear any scented products, make-up, nail polish or jewellery
- Go to the Admitting/Registration area
- Bring all medications with you, as directed by Pre-Surgical Screening

**After Surgery****Recovery Room**

- You may need oxygen for a short time or overnight
- A nurse will check your pulse and blood pressure
- You will be given pain medications on a regular basis. **Tell your nurse if you have pain.**
- You may have leg massaging devices that gently squeeze your calf muscle to help with blood flow

**The Hospital Ward**

- Once you are ready, you will be taken to the surgical ward.
- You will be told how much weight you can put on your operated leg (weight bearing status).
- You will be helped to sit on the side of your bed, stand and/or walk the day of surgery. You will learn how to move on your own and walk more every day.

- A nurse will ask you if you have pain or feel sick (nausea).
- A nurse will check your blood pressure, temperature, oxygen levels as well as the colour, warmth, movement and feeling of your leg.
- You will use a commode or a raised toilet seat when you use the bathroom.
- You will have an intravenous (IV) in your arm to give you fluids and medications. Your IV will be removed when no longer needed.
- You will be given a blood thinning medication after surgery, see "COMPLICATIONS – How to Prevent Them", page 19.
- You should change position from your back to your side every 2 to 4 hours while awake to prevent skin or breathing issues.
- You may have devices to squeeze your calf muscles to stop blood clots from forming.
- A nurse will change your dressing and teach you how to care for your incision.

## **Exercise**

- Take 3-6 big deep breaths and cough to clear your lungs every hour, while awake. If you feel congested, do this up to 5 times per hour
- Move your feet and ankles at least every hour to help blood flow
- Your physiotherapist will teach you about exercises and give you a home exercise program.

## **Pain Control**

You should take pain medication regularly so that you can move and sleep well. Your pain will lessen over 6 weeks to 3 months.

### **Pain medication can be given:**

- by mouth or IV
- through a pain pump you control or
- through an epidural catheter (small tube) placed in your lower back

If your pain is not controlled, **tell your nurse.**

## **Preparing to go home**

- The occupational therapist will review the supplies that will help with your day to day activities.
- You will practice walking and doing stairs with the physiotherapist.
- **On discharge you MUST have someone to:**
  - drive you home
  - pick up your medications
  - stay with you 24 hours a day for the first 3 days and be available for 10 – 14 days after this to help you at home

## Length of Hospital Stay

Your time in the hospital is short. Your health care team will make sure you are stable and able to do daily tasks before you home. Discharge time is in the morning.

Day 0	SURGERY DAY
Day 1	discharge day
Day 2	DISCHARGE HOME

**Ensure your travel plans are in place before coming to the hospital.**

**Total Knee Replacement = ~~2~~ nights** (includes revision surgery)

plan to go home on the day of surgery (for a Uni or partial knee) or the following day

## Follow-up with Surgeon

If you did not receive an appointment on discharge, call your surgeon's office to schedule a follow up appointment when you get home.

## COMPLICATIONS – How to Prevent Them

All surgery comes with risk of complications. Complications may occur due to prior health problems, the anesthetic and disruption to the muscles, nerves and blood vessels that occur with the surgery. There is a lot you can do to prevent or lower complications.

### Low Hemoglobin (Anemia)

You may lose a large amount of blood during surgery. This can result in a drop in your hemoglobin (anemia), which is measured with a blood test. You may feel dizzy, weak and/or tired. You may require a blood transfusion and/or iron supplements.

### Blood Clots

Blood clots can form in your calves or thighs (which may move to your lungs), in the first weeks after surgery. See page 21 for more detail.

#### **Tips to Prevent:**

- Get out of bed often, move your feet and ankles, tighten and release your leg and buttock muscles every hour
- Your surgeon may order a leg massaging device for times when you are in bed

#### **Your surgeon will order blood thinning medication**

- Blood thinners (pills or injections) may be ordered for up to 35 days after surgery.

- You or a family member will be taught how to inject yourself before you go home.

## **Lung Complications**

Fluid in the lungs or infection (pneumonia) may occur after surgery if you are inactive.

### **Tips to Prevent:**

- Change your position every 2-3 hours when in bed, get up and move as soon as possible
- **Take 3-6 big deep breaths and cough every hour (or up to 5 times per hour) while awake**
- Brush your teeth every 4 hours while awake to prevent pneumonia
- People who smoke after surgery are at higher risk for lung problems

## **Delirium**

Confusion after surgery is called delirium. You may be forgetful, mixed up and see or say things that do not make sense. Delirium usually goes away in a few days but may last for a few weeks.

### **Delirium may be caused by:**

- anesthetics and medications
- lack of sleep
- pain
- infection
- alcohol withdrawal
- constipation
- low oxygen levels

### **The health care team will treat the cause of delirium when possible.**

- Wear your glasses and hearing aids.
- Get out of bed and move as soon as possible.

## **Infection**

Infection after surgery is rare but very serious. You may need antibiotics and/or more surgeries. You are more likely to get an infection if you are not healthy and strong.

### **Tips to Prevent:**

- Eat healthy foods
- Wash your hands often

- Avoid people with colds or infections
- Tell your surgeon right away if you think you have an infection (see "Signs and Symptoms of Infection", page 22)

## Caring For Yourself At Home

### Care of your incision

You may have some drainage while healing. A nurse will teach you how and when to change your dressing before you go home.

Once drainage stops, your incision may be left uncovered. If you find it more comfortable or the staples are catching, a new dressing may be used. You can buy these from a medical supply or drug store.

If you have staples, they will be removed 8 to 14 days after your surgery. You will be told where to have them removed. Small tape strips (such as Steri-Strips™) should be left until loose or fall off on their own.

DO NOT soak the incision (swim, bath, tub, pool or hot tub) until at least 48 hours after your staples have been removed **and the incision must be completely closed with no drainage or scab.**

Ask your nurse/surgeon when you can shower. While showering remove the dressing. After your shower pat the area dry with a clean towel (do not rub) and replace the dressing if needed.

### Changing your dressing

Follow surgeon's directions if different than below:

1. Wash your hands well before and after.
2. Remove tape/dressing and discard. Do not remove the Steri-Strips™. **If the dressing is stuck, moisten with normal saline and slowly remove.**
3. Check the incision for redness or drainage.
4. Clean the area around the incision with gauze soaked in normal saline (buy at a medical supply or drug store) or pat dry with a clean towel.
5. Apply a new dressing to the incision if needed.
6. **Do not** apply cream or ointments to the incision.
7. Tell your surgeon and family doctor **immediately** if you think you have an infection.

Please follow the hand out  
"Day 7 Mepilex Dressing Change"

## **Signs and Symptoms of Infection**

The incision and/or area is:

- Red
- Hot
- More swollen
- Draining more (soaking through dressing and/or clothes)
- Draining cloudy liquid that is white or yellowish/green in colour
- More painful (whole leg may hurt)
- Smelly

Or if you develop a fever (above 38°C or 101°F) that lasts over 12 hours

**Notify your surgeon and family doctor immediately if you think you have an infection**

## **Medications**

**Some over the counter and herbal products may raise your bleeding risk.**

**Talk to your Pharmacist before taking them.**

**You must ensure your prescription is filled. Carefully read and follow all instructions.**

Talk with your family doctor/surgeon or pharmacist about over the counter pain medications.

Medication can cause drowsiness and dizziness.

## **Controlling Pain**

- Take pain medication as ordered by your surgeon.
- Do not wait until the pain is bad before you take pain medication.
- As your pain improves, slowly lower your pain medications.
- Do not push yourself beyond your limit.
- Rest with leg up when you feel tired or sore.
- You may feel some pain when you do your exercises. If it is too painful, talk to your physiotherapist.
- Use ice packs after exercise to ease pain, if directed by surgeon.
- Distract yourself from pain (i.e. listen to music, visit with friends, breathing exercises, watch TV, etc.).

## **Signs of a Blood Clot**

You may have one or more of these signs:

- Red or change in color to either leg
- Leg feels hot
- Sudden increase in swelling and/or pain
- Calf pain that is worse when standing or walking
- Calf muscle is tender to touch
- Sudden shortness of breath and/or chest pain
- A temperature above 38°C or 101°F that lasts over 12 hours

**Notify your surgeon or family doctor right away if you think you have a Blood Clot. If you have a sudden onset of chest pain and / or shortness of breath, GO TO THE NEAREST EMERGENCY DEPARTMENT.**

## **Swelling**

For a number of weeks after surgery you will have some swelling.

### **Tips to Prevent / Reduce:**

- Lie down, put your leg up on a few pillows
- Do not sit for more than 30 minutes at a time **with foot down**
- Move your feet and ankles
- Ice your knee as ordered by your surgeon

## **Constipation**

### **Tips to Prevent:**

- Drink plenty of fluids
- Eat more fibre (i.e. bran, fruits, vegetables)
- Use fiber supplements if needed
- Take laxatives and/or stool softeners if needed **Don't forget to start laxatives!**

Tell your doctor or pharmacist if you have ongoing problems with constipation, nausea and vomiting.

Normal after knee surgery- intermittent  
Swelling to entire leg/knee/foot  
warmth to knee (even months after surgery)  
Bruising to entire leg/knee/foot

Pain!- aching and stiffness

Take meds, use ice, elevation, and do the bending exercises

It can be hard to sleep at night  
Take your pain medications regularly  
do knee bends, use ice,  
short walk in the house can help calm pain/aching so  
you can get back to sleep

## **Loosening and wear**

Over time, part(s) of the new joint may loosen and another surgery may be needed.

**To prevent loosening and wear, carefully follow the activity guidelines and precautions provided to you in this book. See “Daily Activity Tips”, page 25.**

## **Avoiding falls**

- Wear rubber soled shoes
- Use hand rails
- Do not lean against items that may move
- Wear your eye glasses
- Get up slowly and make sure you have your balance before taking a step
- If needed use a walking aid (walker, cane, etc).

See also “Preparing Your Home”, page 14

## **Traveling**

Avoid sitting as a passenger for periods greater than 2 hours in the first 6 weeks after surgery.

Do not drive for 6 weeks after your surgery. Check with your surgeon before you begin to drive.

Allow extra time to clear airport security and tell the officer that you have a joint replacement.

## **Exercise Guidelines**

**Exercise will help you recover the movement and strength of your knee and helps to:**

- Reduce swelling
- Prevent blood clots
- Control pain
- Prevent constipation
- Improve sleep



**Check with your physiotherapist for the best way to WARM UP your new joint, this may include:**

- Applying moist heat to the front and back of the thigh (NOT your knee) for 5-10 minutes to improve blood flow
- Walking or using a stationary bike for 5-10 min

You will go home with an exercise program.

- Use these exercises until you start therapy in an outpatient clinic
- Your program may last up to 8 weeks based on your progress
- Use your walking and/or other aids until your surgeon or therapist tells you to stop
- Talk to your therapist if you have concerns about doing daily activities

## **Daily Activity Tips**

*Choose a chair with arm rests and a high seat that is level with the back of your knee.*

### **To stand up:**

- Move yourself to the front edge of the chair or toilet and keep your operated leg out in front of you
- Slide your other foot back slightly and lean forward slightly while pushing yourself up using the arm rests, grab bars or stable surface
- Make sure you feel steady before starting to walk

### **To sit down:**

- Back up until you feel the back of your legs against the edge of the chair or toilet
- Slide your operated leg forward, lean forward slightly and reach back for the arm rests, grab bars or stable surface
- Lower yourself slowly, sliding your operated leg in front

### **To go up stairs:**

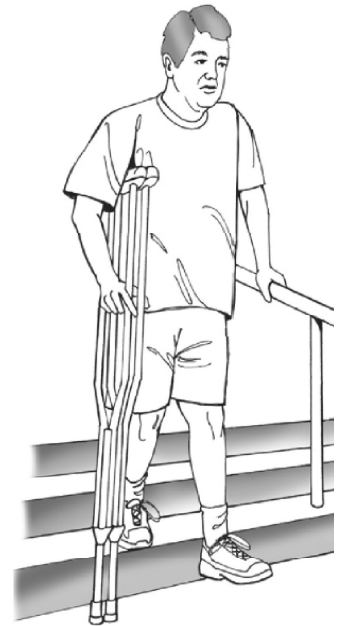
- Hold onto the railing with one hand and put the crutches or cane in the other hand
- **Step up with your good leg** and follow with your operated leg and walking aid
- If there is no railing, use a crutch under each arm or the cane on your non-operated side
- Put your weight on the walking aid and step up with your good leg
- Straighten your good leg and bring the walking aid and your operated leg up together



### To go down stairs:

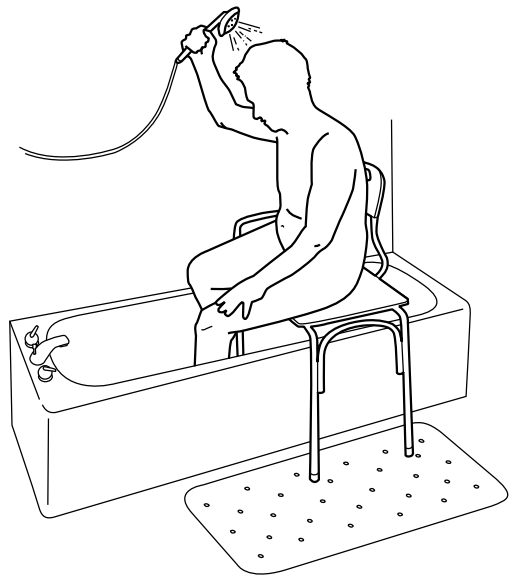
- Hold onto the railing with one hand and **place your crutches or cane on the stair below**
- **Step down with your operated leg** and follow with your good leg
- If there is no railing, use a crutch under each arm or the cane on your non-operated side
- Place the walking aid on the stair below and follow carefully with the operated leg
- Put your weight on the walking aid and step down with the good leg

**Remember, "Up with the good, down with the bad."**



### To sit while showering:

- If you have a walk-in shower, place a high shower chair or stool in your shower stall
- Back up to the edge of the seat and reach back for the seat with one arm while holding onto a grab bar or other stable surface with the other hand
- Slide your operated leg forward and sit down slowly
- Use a hand held shower head
- Dry off well before getting out
- Use a non-slip bath mat inside and outside of the shower stall to prevent slipping on the wet surface
- Use a regular walker to get into and out of the shower



### To use the bathtub:

- Sliding doors should be removed
- Use a secure raised bathboard or transfer bench, a hand held shower head and long handled aids
- Back up to the edge of the seat and reach back for the seat with one arm while holding onto a grab bar or other stable surface with the other hand
- Sit down slowly, sliding your operated leg forward and slide back on the seat
- Lift both legs together over the side of the tub using a leg lifter if needed

**\* Have someone assist the first time you bathe or shower to make sure you are safe and comfortable.**

**If you have questions about the set up of your shower or tub, ask your occupational therapist.**

## **Getting dressed**

- Sit on a high bed or firm chair with arm rests
- A long-handled reacher, sock aid or shoe horn may be helpful to put on your socks, pants and shoes
- You will get dressed in the hospital before going home so an occupational therapist can give you tips if you are having trouble



## **Sleeping**

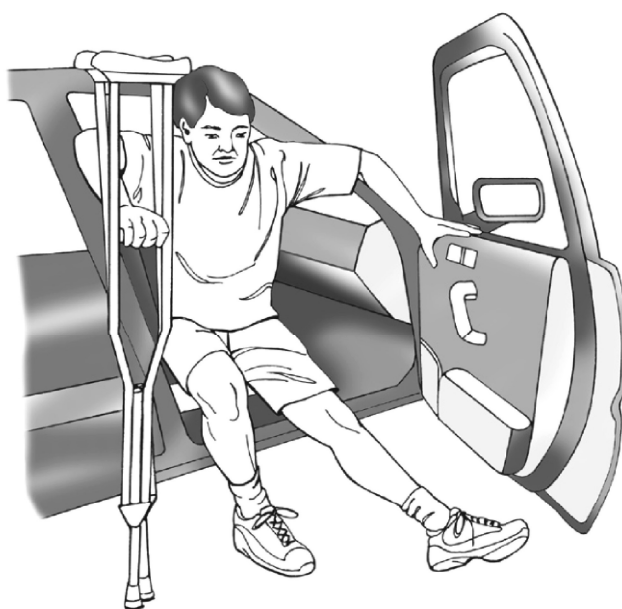
- For comfort, 1 or 2 pillows between your legs may be helpful when you are sleeping on your side



## **Getting in and out of a car**

- Park well away from the sidewalk or curb so you have room
- If you are going home in a high vehicle, you may need a footstool and help to get into and out of the vehicle
- Move the front passenger seat back as far as possible
- Back up to the seat and place one hand on the dashboard and the other on the back of the seat
- Lower yourself slowly while sliding your operated leg forward and slide back across the seat until you can swing your legs into the car
- To slide easier, put a plastic bag on top of the seat
- Use a firm, raised cushion with a smooth surface on the car seat if you find the seat is too low
- Reverse this process to get out of the car and have your walker or crutches ready when you stand up
- If you have concerns about getting in and out of your car, discuss this with your therapist

Continue to use any aids as told by your therapist.



## **Recreational Activity Guidelines**

Regular exercise is important. Activity should be done 4 – 7 days a week, to keep you moving and strong. Choose activities that have a low risk of injury or falling.

**Speak with your surgeon and therapist about any sporting activities that you wish to do.**

### **Recommended activities:**

- walking, using a treadmill (shock absorbing footwear)
- swimming, water aerobics, deep water running
- recreational cycling, using a stationary bike
- no impact aerobic dance (e.g. Joint Works)



### **Activities you may be able to do with caution:**

(discuss with your surgeon or physiotherapist)

- hiking easy trails
- downhill and cross country skiing
- dancing
- doubles tennis (avoid running & twisting)
- using a step machine or rowing machine
- weight lifting
- lawn bowling
- gardening / yardwork
- golf (using a cart)



### **Activities to AVOID:**

- running, jogging
- jumping (skipping rope)
- singles tennis, badminton, squash
- skating (inline and ice)
- contact sports (football, soccer, hockey)
- high impact sports (basketball, volleyball)



## **Sexual Activity**

Resume sexual activity when you are comfortable, some changes may be needed to avoid pain.

### **Some positions to try:**

- Lying on back with legs apart and operated leg straight or slightly bent
- Lying on your side with operated leg on top, bent slightly at the hip and knee and supported on a pillow or partner's thigh (partner also lying on their side)
- Care must be taken in the first 3 weeks to maintain wound healing

Discuss any concerns with your surgeon or therapist.

## **Living with your new joint**

Your new joint should last 15 – 20 years, if you avoid high risk activities and follow the tips in this book and from your therapist(s).

If you are having another surgery/procedure or dental work, tell your doctor or dentist that you have a joint replacement.

## **Consult with your surgeon if you are worried about:**

- Possible infection, see "Infection", page 20
- Loss of knee movement, strength, painful clicking or feeling unstable
- Unrelieved pain in your knee or leg that lasts more than a few days

## Goals following Knee Replacement Surgery

This table lists goals for set time frames. Each person heals differently and the time it takes to meet goals may differ. Also, the goals may differ if you had severe joint issues before your surgery. Talk to your surgeon or physiotherapist if you are concerned.

You may find that pain and swelling increases as you begin new exercises, improve movement in your knee or return to work. Continue to manage your pain and swelling; see "Pain Management – Before Surgery", page 5.

the goal is to be 90 degrees for your 2 week follow up with the surgeon

Focus Area	By the end of week 3
Range of Motion	<ul style="list-style-type: none"> <li>Bend your knee at least 90 degrees</li> <li>Straighten your knee so that no more than 3 finger widths can fit behind the knee on a hard surface</li> </ul>
Mobility	<ul style="list-style-type: none"> <li>Move your leg in and out of bed by yourself</li> <li>Move on and off a raised chair, bed and toilet without help</li> <li>Walk at home using a walker, cane or crutches</li> <li>Use the stairs safely with cane or crutch</li> </ul>

Focus Area	By the end of week 6
Range of Motion	<ul style="list-style-type: none"> <li>Bend your knee 105 – 120 degrees</li> <li>Fully straighten your knee</li> <li>Straighten your knee so that no more than 2 finger widths can fit behind the knee on a hard surface</li> <li>Full ankle range of motion</li> <li>Ride a stationary bike</li> </ul>
Mobility	<ul style="list-style-type: none"> <li>Walk and go up and down stairs normally</li> <li>Be able to sit and stand from an average chair</li> <li>Walk up to 20 minutes with a gait aid</li> </ul>

Focus Area	By the end of week 12
Range of Motion	<ul style="list-style-type: none"> <li>Bend your knee 105 – 120 degrees</li> <li>Fully straighten your knee</li> </ul>
Mobility	<ul style="list-style-type: none"> <li>Walk longer distances without a limp</li> <li>Walk more than 30 minutes without a gait aid</li> <li>Stand on the operated leg with good posture</li> </ul>

# Exercise Guide

You are about to have knee replacement surgery. Patients who prepare for surgery and take part in their care can recover in less time and with less pain.

You may get different instructions from your surgeon, doctor or physiotherapist. Always follow the directions of your care team.

**Before starting any exercise program check with your physiotherapist or doctor. This guide is meant to be used under the direction of your physiotherapist.**

## **Caution:**

**If you have too much pain in your knee to exercise, or if any of the exercises cause more pain or swelling in your knee, stop. Tell your physiotherapist or doctor.**

**If your whole leg becomes swollen or hot, tell your doctor right away!**

## **General Guidelines: Before Surgery**

If you exercise before surgery you can have a faster and easier recovery. Exercise can help to keep your knee moving and get your muscles stronger.

It is important to find activities that keep you moving. A private practice physiotherapist can suggest exercises that are best for you.

## **Possible suggestions may include:**

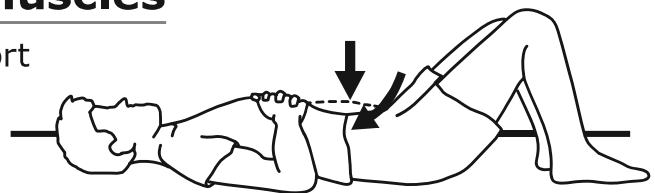
- swimming, water walking, water aerobics, water running
- cycling (stationary or bicycle)
- walking with a cane or walker, pole walking

## **To keep pain and swelling under control:**

- Put ice on your joint, if told to by your surgeon
- Pace yourself
- Use a walking aid such as a cane, crutches or walker
- Talk to your doctor or pharmacist about taking pain medications regularly

## **Learn to Turn On Your Core Muscles**

Core muscles are deep muscles that support your spine and pelvis. They provide stability, control and good posture when you move.



When your knee hurts too much to stand or walk, these muscles become weak and don't work well. This can lead to back pain, stiff back, stiff hips, and poor balance. With practice, they will turn on without you thinking about it.

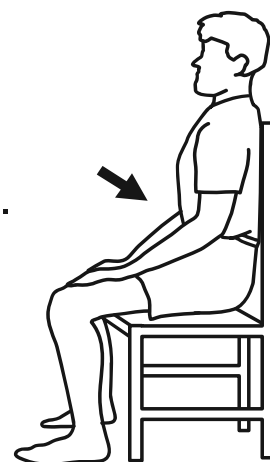
Learn to **turn on** these muscles **before** and **during** each exercise.

Pelvic floor (bladder muscles)

**Pull your bladder muscles to your belly button  
OR imagine you are gently trying to hold your urine.**

Hold for 6 seconds, then slowly relax

Repeat 6 – 8 times, 3 times a day



## **Lower abdominal muscles**

**Pull your belly button into your spine OR imagine slowly zipping up a tight pair of pants.**

- Hold for 6 seconds while breathing quietly, then slowly relax as if you unzip your pants. Keep upper chest relaxed. Repeat 6 – 8 times, 3 times a day

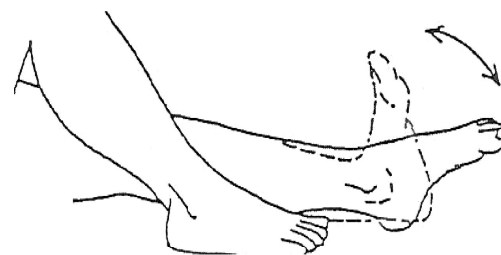
## **Exercises: After Surgery**

### **1. Deep Breathing and Coughing Exercises**

- Breathe deeply in through your nose and out through your mouth
- Do 3–6 big breaths in a row
- After the deep breathing, try to cough
- Repeat 1–5 times per hour

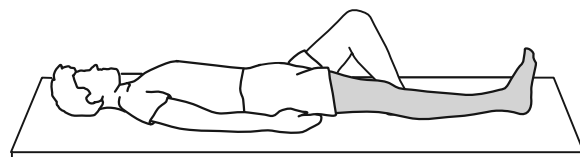
### **2. Ankle Pumping**

- Lying on your back, pump both ankles up and down as far as is comfortable
- Repeat often during the day



### **3. Static quads / Thigh muscle tightening**

- Lie on your back with your knee straight
- Gently tighten the front of your thigh
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day

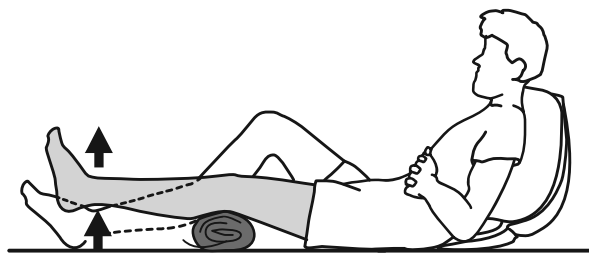


Do # 1- 4  
when resting



#### 4. Knee extension / Straightening over a roll

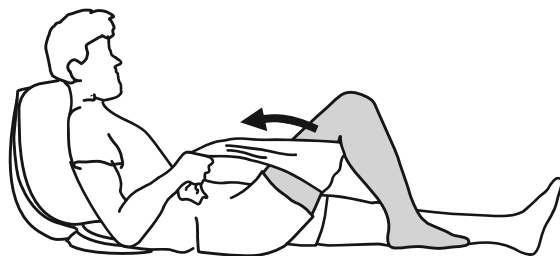
- Place large rolled towel under knee
- Keep back of knee on the rolled towel
- Straighten leg
- Hold \_\_\_\_ seconds
- Repeat \_\_\_\_ times
- Do \_\_\_\_ times per day



Do #5 through to #11 once home from the hospital - they help with pain and stiffness

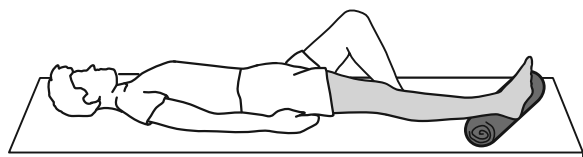
#### 5. Lying knee flexion / heel slides

- Lie on back and bend your knee as far as comfortable
- Use hand or towel behind thigh to pull heel towards bottom
- To avoid heel pain, try using a smooth surface or a garbage bag under your heel to make sliding easier
- Hold \_\_\_\_ seconds
- Repeat \_\_\_\_ times
- Do \_\_\_\_ times per day



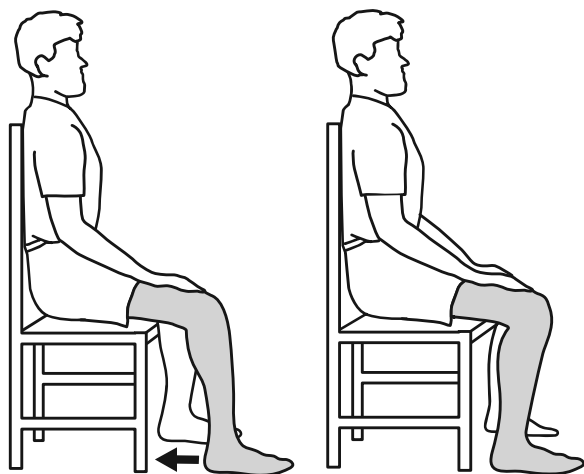
#### 6. Knee Straightening

- Place small rolled towel under heel
- Keep kneecap and toes facing ceiling
- If able, gently tighten muscles in front of thigh
- Hold \_\_\_\_ seconds
- Repeat \_\_\_\_ times
- Do \_\_\_\_ times per day



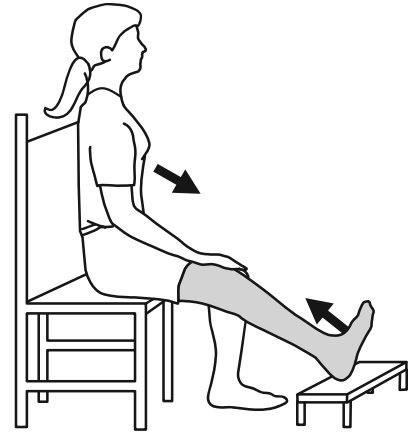
#### 7. Sitting knee flexion / knee bend

- Sit with feet on floor
- Slide heel back to bend your knee
- Hold \_\_\_\_ seconds
- Repeat \_\_\_\_ times
- Do \_\_\_\_ times per day



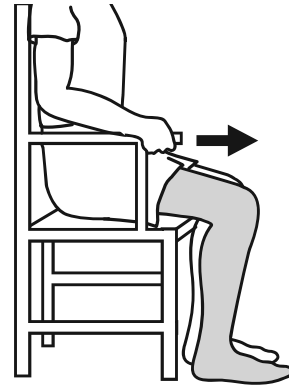
### 8. **Sitting hamstring / back of thigh stretch**

- Sit on edge of firm seat and place heel on step
- Straighten leg and pull toes towards you
- Keep back straight and bend forward until gentle stretch is felt on back of thigh
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



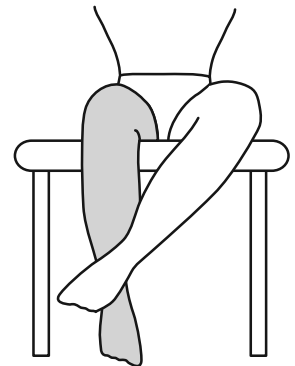
### 9. **Passive Knee Bend**

- Sit on chair with feet on floor
- Bring foot as far back as able
- Keep foot fixed on floor and slide buttocks forward on chair to bend knee
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times



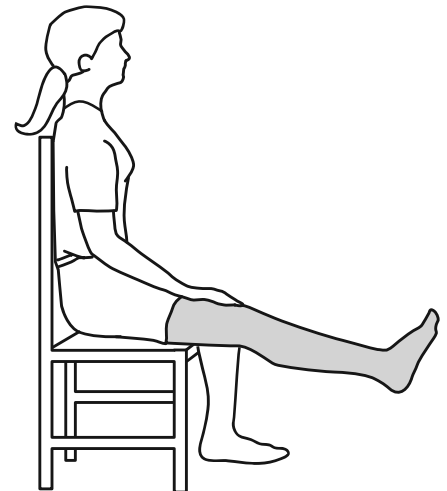
### 10. **Assisted Knee Bend**

- Sit on firm chair
- Cross non-operated leg over operated leg
- Gently push with non-operated leg until stretch is felt on front of operated knee
- Keep hips level on chair
- Keep good position of your operated knee - your foot should be under your thigh at all times
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times
- 



### 11. **Sitting Knee Straightening**

- Sit on firm chair
- Keep back of thigh on chair and straighten operated leg
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times

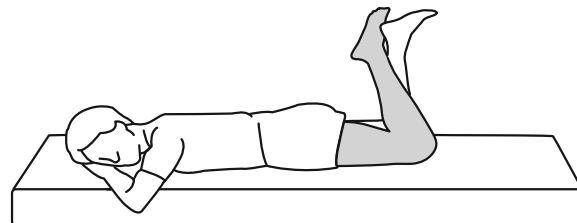
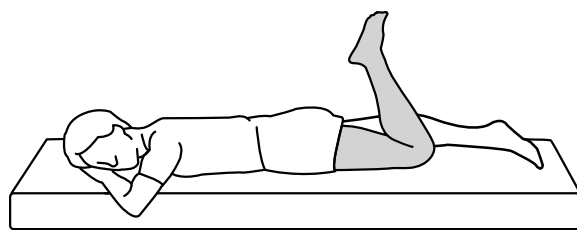


Do #5 through to #11 once home from the hospital -  
some may be difficult.  
It's ok just keep trying

physio will contact you 1- 2 weeks after surgery and advance your activity when appropriate

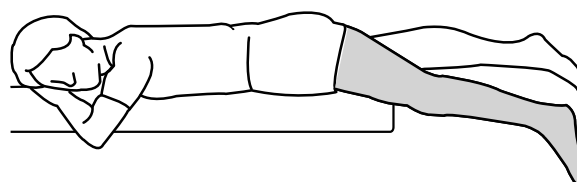
## 12. Active Knee Bend

- Lie on stomach
- Bend knee, bringing heel towards bottom
- Tip: Use non-operated leg to bend operated leg
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



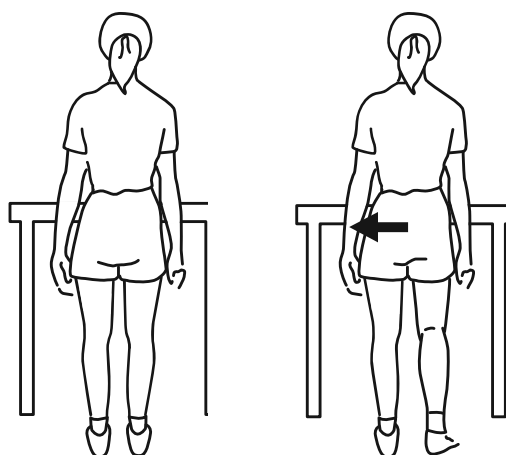
## 13. Passive Knee Straightening

- Lie on stomach
- Hang foot and ankle of operated leg over edge of bed
- Let gravity pull leg straight  
To make harder: work up to hanging kneecap over edge of bed
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



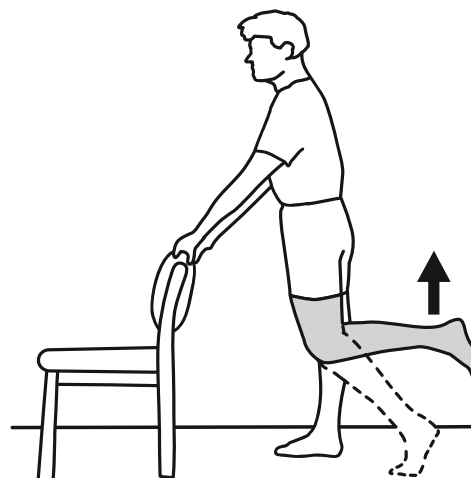
## 14. Side to Side Weight Transfers

- Stand facing counter or table
- Place feet hip-width apart
- Shift your weight gently side to side  
To make harder: lift feet and step from side to side
- Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



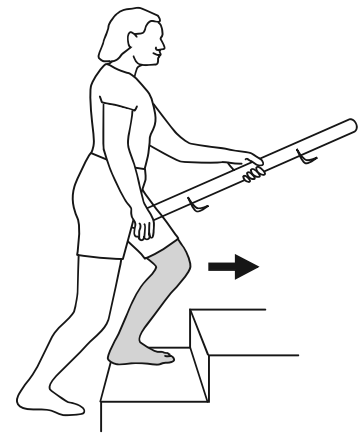
## 15. Standing Knee Bend

- Hold chair or firm counter for support
- Stand on non-operated leg
- Bend knee, bringing heel towards bottom
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



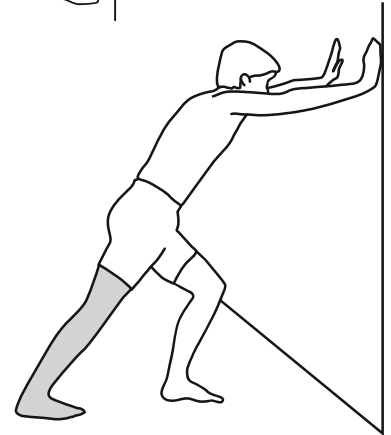
### 16. Step Lunge

- Place operated leg on a step
- Hold rail for balance
- Slowly bend knee forward until stretch is felt in the front of knee
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



### 17. Calf Stretch

- Stand at wall with one leg ahead of the other
- Keep back leg straight with heel on floor and toes pointing forward
- Lean into the wall until stretch is felt in the calf of back leg
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



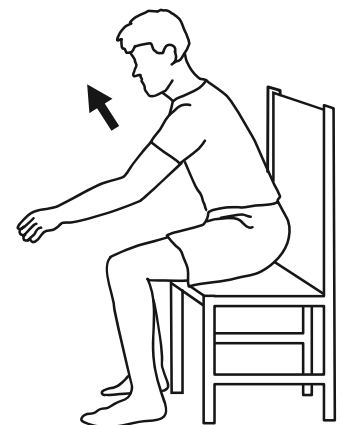
### 18. Mini Knee Bends

- Hold counter or table for support
- Stand tall with feet flat on floor
- Bend hips and knees slightly, keeping weight on your heels and knees over second toe
- Slowly return to start position
- Hold \_\_\_\_ seconds  
Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



### 19. Sit to Stand

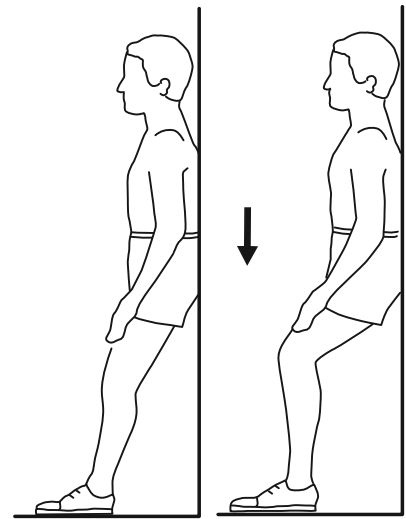
- Sit on edge of firm chair
- Lean forward until nose is over toes
- Press feet into the floor and stand up using legs, not arms
- Slowly sit back down on chair
- Repeat \_\_\_\_ times  
Do \_\_\_\_ times per day



20.

### Wall Slides

- Stand with back against wall
- Place feet shoulder-width apart and about 2 feet from the wall
- Bend your knees and slowly slide down wall, keeping knees over second toes
- Stop when you feel thigh muscle working
- Slowly slide back up the wall

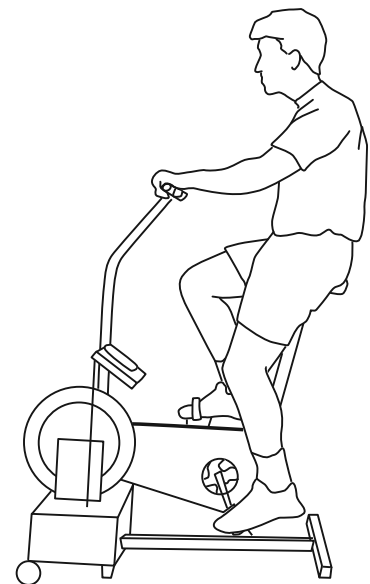


### 21. Stationary Bike

- Use a stationary bike (upright or seated) for 5-10 minutes

#### Tips for using a bike:

- Raise or lower the seat so your operated leg is almost straight
- Rock the pedals gently back and forth
- When you are ready, do a full circle
- Cycle forwards and backwards
- Slowly add light resistance
- Lower the seat as your knee range of motion improves
- If your exercise program includes a stationary bike, consider the following tips:
- Adjust the seat to allow for a comfortable knee bend (either upright or recumbent bike)
- Maintain a good posture
- Cycle forwards and backwards
- Slowly add light resistance or tension



**A balanced exercise program should include aerobic activities, strength training, balance exercises and stretching. Consult with a physiotherapist or a fitness instructor on developing an exercise program which includes these components.**

# Resources

## Health Care Resources

any questions after surgery.. call 811 or 711

*General Medical and Dietitian Information*

**HealthLink BC**

Phone: 811 or 711 (Hearing impaired)  
Web: [www.healthlinkbc.ca](http://www.healthlinkbc.ca)

**Dietitians**

Web: [www.dietitians.ca](http://www.dietitians.ca)

**Community Resources** – While in hospital you may ask to meet with a social worker to talk about resources you may access in your community.

**Meal Resources** – Search for companies that provide ready-to-eat or frozen meals.

**Help in your home** – Search under “home support services” or “home making” for a trained support worker to assist you with your personal care and/or cleaning.

## Transportation

*HandyDART Custom Transit\**

HandyDART service is available throughout some communities in the province. Book at least 3 working days in advance for rides during the week and 7 days in advance for weekend service. See: <https://bctransit.com>

*Disabled Parking Placards (SPARC)\**

Tel: 604-718-7744  
E-mail: [permits@sparc.bc.ca](mailto:permits@sparc.bc.ca)  
Web: [www.sparc.bc.ca](http://www.sparc.bc.ca)

**The application process takes 2-3 weeks if mailed in** or 10 minutes if done in person. The placard is good for use throughout BC.

\* An application form must be completed to qualify for these services. After completing the form, have your doctor or therapist confirm your need and then submit it to the appropriate office.

## **Stop smoking resources**

**QuitNow**



1-877-455-2233 (free call)  
[www.quitnow.ca](http://www.quitnow.ca)

**BC Cancer Agency**

[www.bccancer.bc.ca](http://www.bccancer.bc.ca)

**Health Canada**

[www.gosmokefree.ca](http://www.gosmokefree.ca)

## **Books**

**Total Knee Replacement & Rehabilitation, The Knee Owner's Manual:** 2011, Daniel J. Brugioni, Jeff Falkel.

## **Internet Resources**

**The Arthritis Society**

[www.arthritis.ca](http://www.arthritis.ca)

**The American Academy of Orthopedic Surgeons**

<http://orthoinfo.aaos.org/>

**National Institute of Arthritis,  
Musculoskeletal and Skin Diseases (NIAMS)**

[www.niams.nih.gov/hi](http://www.niams.nih.gov/hi)

**Dietitians of Canada**

[www.dietitians.ca](http://www.dietitians.ca)

**Osteoarthritis Service Integration System (OASIS)**

[www.vch.ca/oasis](http://www.vch.ca/oasis)

**Physiotherapy Association of BC (PABC)**

[www.bcphysio.org](http://www.bcphysio.org)

**Canadian Orthopedic Foundation**

[www.canorth.org](http://www.canorth.org)

**American Academy of Orthopaedic Surgeons**

<http://orthoinfo.aaos.org>

**Other Orthopedic Sites**

[www.myjointreplacement.ca](http://www.myjointreplacement.ca)  
[www.eOrthopod.com](http://www.eOrthopod.com)  
[www.mayoclinic.com](http://www.mayoclinic.com)

**Please note:** When looking for information on the internet, visit government, university and professional association web sites. Not all information found on the internet is credible, reliable or correct.

Additional resources are available for loan from the Arthritis Learning Center.

# Notes

[illegible]