Your Guide to Total Knee Replacement
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INTRODUCTION

Welcome to Health Sciences North / Horizon Santé-Nord. Together with your surgeon, you have decided that a Total Knee Replacement is necessary to alleviate the symptoms you are now experiencing. This booklet is designed to provide you and your family with the information that you will need in order to have a successful surgical experience. It is very important that you read and understand the information provided in this booklet. You do not need to memorize it. Active involvement in your care is essential for a healthy recovery and obtaining a good working knee.

Read this booklet before your hospital stay and write down any questions that you may have. Bring this booklet with you when you come to the hospital. It should also accompany you to Physiotherapy in the community once you are discharged from hospital.

QUESTIONS TO ASK

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WHAT IS A TOTAL KNEE REPLACEMENT?

A Total Knee Replacement (TKR) is an operation that replaces the damaged knee joint with an artificial one called a prosthesis. The knee joint is made up of the thigh bone (femur), which has a rounded end that fits onto the shin bone (tibia). Both ends of these bones are covered in cartilage, which can be compared to a Teflon coating, allowing smooth movement to occur at the knee. The kneecap (patella), which is attached by thigh muscles, is in front.

The three things that help the healthy knee work smoothly and without pain are:

- The smooth coating over the bones.
- The slippery fluid inside the joint called synovial fluid.
- The muscles, ligaments and tendons which support and move the knee.

The three things that make the damaged knee painful and hard to move are:

- The smooth coating gets rough and worn away.
- The slippery synovial fluid begins to dry up.
- The muscles weaken and the knee gets stiff.

The three parts of the new implanted artificial knee are:

- The part that fits over the end of the thigh bone.
- The part that fits into the end of the shin bone.
- A small button on the under surface of the kneecap.
WHAT TO EXPECT

KNEE REPLACEMENT SURGERY PATIENT CHECKLIST

With knee replacement surgery, the surgery itself is just one component of the whole process. In order for the surgery to be successful there are things that you can and should do to be adequately prepared.

It is important to discuss with your family and friends your decision to have surgery and how they may be of assistance to you before, during and after surgery. Things to consider and arrange are:

☐ I am aware that discharge **HOME** is 2-3 days after surgery. Discharge is by 11:00 AM.
☐ I have made arrangements for transportation in an appropriate vehicle to take me home and to my appointments such as to my family Physician, Physiotherapist and Surgeon.
☐ I have arranged for help at home (e.g. grocery shopping, meal preparation, house cleaning, laundry and general errands) following discharge.
☐ If I am unable to manage at home, I have made arrangements for alternate discharge destination such as convalescent or respite bed, or a relative’s or friend’s home.
☐ I have signed up for the Pre-surgery Knee Education Class at the hospital by calling 705 675-4772.
☐ I wrote down all my information on insurance coverage, medical history and any legal arrangements and will bring to hospital.
☐ I have a written list of my current medications I take on a regular basis including vitamins and mineral supplements or other over-the-counter medications
☐ I have arranged the following:
  o Walker (with wheels) and cane
  o Other:

CLINICAL PATHWAY

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>✓ Breathing exercises</td>
<td>✓ Sit up in chair for 30 minutes in AM &amp; PM</td>
<td>✓ Sit up in chair for meals</td>
<td>✓ Continue with activity as per Day 2</td>
</tr>
<tr>
<td>✓ Ankle pumps</td>
<td>✓ Basic exercises</td>
<td>✓ Basic exercises in AM &amp; PM</td>
<td>✓ Continue practising getting in and out of bed, walking, getting dressed</td>
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<tr>
<td>✓</td>
<td>✓ Walk with walker in AM &amp; PM</td>
<td>✓ Walk with walker in AM &amp; PM outside room</td>
<td>✓ Practise stairs before discharge</td>
</tr>
<tr>
<td>✓</td>
<td>✓ Walk to the bathroom</td>
<td>✓ Complete activities of daily living (e.g. lower body dressing)</td>
<td>✓ Discharged HOME</td>
</tr>
</tbody>
</table>
**DISCHARGE PLANNING**

Start to plan for your discharge from hospital now. Total Knee Replacement patients are discharged HOME from hospital 2-3 days after the surgery. It is important to include your family and friends in your discharge planning. A suggestion is to make a checklist which includes:

**Assistance:**
Many people live alone. If you are one of these people, arrange now to have someone stay with you (or you could live with them) for 2-3 weeks after your surgery. If you have no one to stay with you, there are Respite Beds (short term room and board) available at some retirement homes in the Sudbury region. You must make the respite bed arrangements yourself before admission to hospital.

**Living arrangements:**
After surgery, most will have trouble going up and down stairs. It is best to arrange everything at home to avoid stairs as much as possible. This may mean moving your bed to the main level of your home. After surgery, you will also need extra equipment (walker, crutches). Consider if using this equipment in your house will be problematic. Setup a ‘recovery centre’ where you will spend most of your time. Things like the phone, television remote control, radio, facial tissues, waste basket, pitcher and glass, reading materials and medications should all be within reach.

**Meals:**
Prepare meals and freeze them ahead of time. Meals-on-Wheels is another option. Make a schedule for friends and family to deliver meals. Ask your local supermarket about having groceries delivered.

**Housework/Yardwork:**
Do any big cleaning ahead of time. Contact friends and family to help you after surgery.

**Transportation:**
If you will need transportation for appointments or outings, you could access Greater Sudbury Trans Cab services or Sudbury Handi-Transit services. Call 311 or visit [www.greatersudbury.ca](http://www.greatersudbury.ca) for fares and schedules. Red Cross (705 525-1244) also offers door-to-door transportation for a fee. If you do not already have a parking permit for accessible parking, you may want to apply for a temporary permit several weeks prior to your surgery. Visit a Service Ontario centre for an application form or access their website for online application at [www.serviceontario.ca](http://www.serviceontario.ca)

**Care-Giving:**
- Consider getting the Senior’s Help Line (705- 523-7000)
- Consider signing up for on-line banking.
- Consider who will care for your pet(s).
- Consider who will care for your significant other if you are a caregiver for someone else.
POSSIBLE COMPLICATIONS

Medical Health Concerns:
Heart disease, diabetes, chronic lung disease, smoking, anemia, rheumatoid arthritis, obesity, and other medical problems may slow your recovery.

Infection:
The infection rate is less than 1%. If infection occurs, the artificial components may need to be removed and replaced after the infection has been controlled.

Late Infection:
Be careful to avoid infections (sinus, chest, dental, skin, etc.) and get treatment quickly. Infection can settle into your new knee with very serious results. We recommend that your dentist follow the Canadian Dental Association (CDA) guidelines for preventative antibiotics with dental work.

Blood Loss:
You may lose a large amount of blood during or after the surgery. This is rare but you may need a blood transfusion. There is a very small risk that you can get an illness from a transfusion. The blood conservation nurse will meet with you during your pre-admission visit to discuss this further.

Pain:
Pain following knee surgery varies with each person. It is important to keep your pain under control in order to be able to participate in therapy after surgery. It is better to treat your pain when it is mild rather than waiting for it to become severe.

Stiffness:
Some experience more stiffness than others in their knee after surgery. It is important to attend physiotherapy and be compliant with your home exercise program to obtain adequate range of motion (bending and straightening).

Bruising or Bleeding:
Sometimes blood can collect in the wound after surgery. Your body will eventually reabsorb this. Blood from your incision or dark bruising may occur. Nurses will teach you how to monitor this.

Blood Clots (Deep Vein Thrombosis or Pulmonary Embolus):
Harmless blood clots in the veins of the legs can occur in as many as 40% of knee or hip replacement surgeries. It is rare for them to travel to the lungs (less than 1%); however, if this occurs it could result in death. Blood thinning medication is required for a minimum one to three weeks post surgery to prevent clots from forming. This is achieved with pills or needles. Injections are given under the skin of the abdomen. The hospital nurse will teach you and your caregiver how to do this at home.

Nerve or Blood Vessel Damage
Nerve or blood vessel damage is rare. If nerve damage occurs, it may leave numbness, weakness, or paralysis in the foot. Damage can be short term to permanent. A brace or sometimes additional surgery may be required.
Swelling (Edema)
The normal healing process **will** cause swelling in your knee and lower leg. This may last several weeks or months. Swelling will often improve if you elevate your legs and pump the ankles. Call the surgeon’s office if the knee becomes very painful or swelling continues to increase despite elevation.

Delirium
Short-term confusion, called delirium, following the surgery may be due to age, medication, anaesthesia, or medical conditions. It usually resolves after a day or two. Alcohol or drug use before surgery can make post-operative delirium worse.

Urinary Problems
During surgery you will have a catheter inserted in your bladder. This is usually removed the first day after surgery. When it is removed, some may have trouble passing urine. Inform your nurse if you have difficulty, pain and/or burning when urinating.

Slow Wound Healing
Because the skin, tissues, ligaments, or bones are cut during surgery, sometimes healing is slow. This may give some short-term local pain and swelling. Healing occurs with time. Those who are smokers or those with medical issues such as diabetes will experience slower wound healing. Eating healthy, vitamin and protein rich foods will promote wound healing.

Constipation or Ileus
After surgery, people are prone to constipation because of factors like decreased mobility, side effects of pain medications and anaesthetic. You will be started on laxatives right after surgery and your bowel function will be monitored. Continue to maintain a high fibre diet and **drink plenty of water.**
PREPARING FOR SURGERY

WEEKS BEFORE SURGERY

- You and your caregiver/coach MUST attend the Pre-surgery Education Class for total knee replacement. Sign up by calling (705) 675-4772. They are offered every 2nd and 4th Friday of the month from 1 to 2:30 pm at the hospital. You are required to attend only ONE session. People who attend this education session have a significantly better outcome.

- Arrange for someone to assist you with recovery and rehabilitation. They should attend the pre-admission visits and pre-surgery class with you. This designated person should be available to help with exercises and any other needs for the first few weeks after you are discharged from the hospital.

Choose a designated family member/friend to act as your contact to receive information from the doctor and health care members. Your coach could be that same person.

- Arrange for someone to take you home from the hospital.

- Schedule dental work and other medical procedures (e.g. colonoscopy) well in advance of your knee surgery. Do not schedule any of these procedures, including routine cleanings, for 6 months after your surgery.

- You may want to get your hair, manicures or pedicures done ahead of surgery.

PRE-ADMISSION CLINIC (PAC)

Your surgeon’s office will call you to inform you the date of your surgery. The hospital will call you 2 to 6 weeks prior to your surgery to inform you of your appointment at the Preadmission Clinic (PAC). This is a half to full day session, where you can discuss current medical issues and have opportunities to ask questions. You will have medical testing and assessments completed. You may meet with the Blood Conservation Nurse who can help you with issues around blood transfusion. You may also meet with the Anaesthetist who will ask you questions pertaining to your medical history and will perform a medical exam. The Anaesthetist will discuss with you which type of anaesthetic is appropriate for your operation: an epidural/spinal or a general anaesthetic.

You should bring the following:

- Medications: bring the medications you currently take in the original prescription bottles. Don’t forget to include vitamin and supplements or other over-the-counter medications you take regularly. Your doctor may advise you to stop taking certain medications or supplements a week or two before surgery.

- Allergies / Reactions to Medications: Identify if you have had to medication and/or anesthesia issues in the past. Provide the name, why you were taking it, a description of your reaction and when this happened.

- Medical conditions / Previous surgeries: Identify all your past surgeries and any medical conditions.

- Insurance coverage: Know your insurance coverage, including the name of the company, your plan or group number and contact information. Be sure to have your Health Card, Status Card and insurance cards to the hospital with you.

- Legal Arrangements: Information about any legal arrangements you have made, such as a living will or durable power of attorney. Bring a copy with you to the hospital.
• Coach: if you have one, bring them along if possible.

**DAY BEFORE YOUR SURGERY**

The 24 hours before your surgery will be busy. Use this checklist to make sure you don’t forget anything.

- Take a shower or bath with anti-bacterial soap the night before and morning of your surgery
- Do not shave the area of your surgery
- Do not wear any make-up, lipstick, nail polish or body piercing items
- Do not eat or drink anything after midnight the night before surgery
- Do bring a hospital bag. Items in your bag should include:
  - A pair of comfortable, well fitting shoes with non-skid soles
  - A knee-length robe or gown
  - Shorts or loose fitting jogging pants
  - List of medications your regularly take
  - Personal care items such as hair brush, denture case, toothbrush, toothpaste, soap, eyeglass case, contact lens case
- Leave your credit cards, cash and jewellery at home

**GET IN SHAPE FOR SURGERY**

The physical preparations you make can affect both the outcome of the surgery and your recovery time. Most of these suggestions are common sense, although some may surprise you.

- If you smoke, cut down or quit. Smoking changes blood flow patterns, delays healing, slows recovery, and increases risk of infection.
- Do not have any alcohol for at least 48 hours prior to surgery.
- If you use other controlled substances, tell your doctor. Narcotics and other drugs can have an impact on your surgery.
- Eat well. If you are overweight, try losing weight sensibly. Your doctor may recommend a weight loss program.
- It is particularly important to consume an iron rich diet to help restore blood levels. Please see [www.dietitians.ca](http://www.dietitians.ca) for food sources that are rich in iron.
- If able, keep active right up until the day of your surgery, including walking, swimming or cycling.
**PRE-OPERATIVE EXERCISES**

The following exercises will help you get into shape and prevent you from complications post operatively:

### Static Quadriceps Strengthening

- **Sit** as shown with small pad of towel under the operated knee.
- With operated knee straight, tighten muscles on top of your thigh while pressing the back of the knee into the bed.
- Hold ______ seconds. Repeat ______ times, _____ per day.

### Quadriceps Strengthening Over a Roll

- Lie as shown with 6-8 inch roll or coffee can under the operated knee.
- While pressing the knee into the roll, raise the heel up off the bed until the leg is completely straight.
- Hold ______ seconds. Repeat ______ times, _____ per day.

### Straight Leg Raise

- Lying as shown with operated leg completely straight and good leg bent.
- Raise operated leg up about 6-8 inches while keeping it completely straight.
- Hold ______ seconds. Repeat ______ times, _____ per day.
AFTER SURGERY

LEARNING TO MOVE

Continuous Passive Movement (CPM)

Your doctor may prescribe CPM, a post-operative treatment method that is designed to aid recovery after joint replacement surgery. This machine gently moves your knee at a constant speed to help bend and straighten your knee to increase range of motion and promote healing.

WEIGHT BEARING, WALKING, STAIRS

Weight Bearing

After your surgery, you will be able to put full weight on your operated leg when getting up and walking with crutches or a walker. Your physiotherapist will determine which aid is most suitable for your needs.

Walking

You will begin walking with a two wheeled walker or crutches.

- Move the walker or crutches forward first,
- Followed by your operated leg.
- Then move your good leg forward.
- Put your weight on the walker / crutches to take the weight off your operated leg when you step onto it.

Make sure to stay close to the walker when walking and avoid leaning forward.

Stairs

UP
- Use railing plus cane or crutch
- Lead with the GOOD leg while the cane/crutch supports the operated leg.
- Do one step at a time
- Progress to alternating steps when able

To go DOWN
- Use railing plus cane or crutch
- Lead with the cane/crutch and OPERATED LEG, followed by the good leg
- Do one step at a time
- Progress to alternating steps as tolerated
LOOKING AFTER YOURSELF AT HOME

Showering

- You can shower while your staples are still in. Pat dry the incision immediately.
- Use a long-handled bath sponge to wash your lower legs and feet if you cannot reach them on your own.
- You may need to obtain a bath chair, stool, board or bench if you have difficulty standing to shower or if you have difficulty lifting your legs back over the edge of tub. Avoid stepping over the edge of the tub as this will increase your risk of falls. The Occupational Therapist can review how to transfer over the edge of the tub with you.

Lowering body dressing: Pants, underwear, socks and shoes

- Gather your clothing and dressing aids (if needed). Place them within easy reach.
- Sit on a high chair
- Wear proper fitting, comfortable clothing
- Always dress your operated leg first.
- The Occupational Therapist may suggest devices like a reacher, sock-aid, long-handled shoe-horn and elastic shoe laces to allow you to get dressed on your own. These items are not typically required for long-term use unless you have other medical conditions that necessitate them.

Toileting

- You may begin using a raised toilet seat after surgery to make it easier for you to get from sitting to/from standing.
- This item may not be required when home. Check with your Occupational Therapist.

Pain Management

- Take your medications as prescribed by your surgeon. Managing pain allows you to perform your basic activities of daily living and do your exercises comfortably.
- Using ice often is an excellent way to manage pain and keep the swelling under control.

Knee Icing

Ice your knee for 15 minutes, 3-5 times per day. Keep your incision dry, and have a thin layer of material between your skin and the ice. The best icing methods are crushed ice with a little bit of rubbing alcohol in a baggie or small garbage bag. Wrap this with a thin layer of cloth and apply directly to the knee. The four normal sensations that you will feel when applying ice are: cold → burning → pain → numbness.

Footcare / Footwear

- You may have difficulty reaching your toenails to cut them when you first go home. If possible, have them cut before your surgery.
- Wear non-skid, supportive shoe such as a running shoe that provide support and cushioning for your new knee.
Homemaking Hints

- Use an apron with several pockets.
- Carry hot liquids in containers with covers.
- Slide objects along the countertops instead of carrying them.
- Sit on a high stool when doing countertop tasks.

Preventing falls

- Wear non-skid, supportive shoes. Shoes that lace up are good.
- Keep your home free of clutter. Remove all scatter rugs/mats.
- Keep your home well lit. Night-lights should be used especially if you go to the bathroom at night.
- Plan ahead before moving. Concentrate on walking. Do not lean on furniture. It is better to use a cane or crutch for support rather than holding onto walls or furniture.

Preventing Complications

Deep breathing and coughing are essential to prevent pneumonia and congestion in your lungs. The nurses will remind you to do this. Your surgeon may order you a blood thinner on discharge to help prevent the formation of blood clots in your legs during the recovery period. These anticoagulants are continued after you are discharged from hospital. Doing the ankle pumping exercises and walking as soon as possible will prevent clots from forming in your legs.

Constipation

Because your surgery makes you less active, it is easy to become constipated. Your pain medications can also constipate you. A gentle laxative can help. Other things you can do to help are to drink plenty of fluids, include fibre in your diet, eat lots of fruits and vegetables, and maintain regular exercise.

Skin

Lying in bed puts a lot of pressure on parts of your body that are not used to taking pressure for any length of time. Buttocks, ankles, elbows, shoulders and ears are especially vulnerable. Signs of pressure sores are burning, redness or pain. The best way to prevent skin problems is to move around and avoid lying in bed for long periods of time.

Incision Care / Suture Removal

As your incision heals, the staples in your incision will need to be removed 2-3 weeks after your surgery. This will likely be done in the Ambulatory Care Unit of the hospital. Keep the wound clean and dry. Eating nutritious foods will speed healing. Watch for these signs of infection:

- Increased redness and warmth around the incision
- Uncontrolled swelling or puffiness
- Drainage from incision
- Increased pain, especially at rest
- Fever

If you have any of these signs, tell your doctor and health professional immediately. Bacteria in your blood can get into your new knee and cause infection. You must have any infection treated right away. Tell your dentist or other doctors that you have a knee replacement. Your doctor may decide that you need antibiotics before some treatments or dental work.
**PREVENTING POST-OPERATIVE COMPLICATIONS**

If you should experience any of the following symptoms or have any concerns, call your surgeon’s office or go to the emergency department of your local hospital:

- Increased pain in the calf or thigh of either leg
- Constant, unrelenting pain in the operated leg.
- Increased swelling, tenderness or redness of either leg
- Temperature above 38.5 degrees Celsius
- Increased drainage from the incision, redness or opening of the incision edges
- Shortness of breath
- Chest pain or tightness

**GUIDELINES FOR RESUMING AN ACTIVE LIFESTYLE**

Walking is an excellent activity and you are strongly encouraged to gradually increase your walking distance after you leave hospital.  Walk outdoors as long as sidewalks are dry.  Consider going to a mall to walk when the sidewalks are wet and slippery.

The following types of physical / sporting activities listed below are based on surgeon consensus as well from scientifically based evidence.

<table>
<thead>
<tr>
<th>Recommended / Allowed</th>
<th>Allowed with experience</th>
<th>Not recommended</th>
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</thead>
<tbody>
<tr>
<td>Low-impact aerobics</td>
<td>Road bicycling</td>
<td>Racquetball</td>
</tr>
<tr>
<td>Stationary bicycling</td>
<td>Canoeing</td>
<td>Squash</td>
</tr>
<tr>
<td>Bowling</td>
<td>Hiking</td>
<td>Rock climbing</td>
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<tr>
<td>Golf</td>
<td>Rowing</td>
<td>Soccer</td>
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<tr>
<td>Dancing</td>
<td>Cross-country skiing</td>
<td>Singles tennis</td>
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<tr>
<td>Horseback riding</td>
<td>Stationary skiing</td>
<td>Volleyball</td>
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<tr>
<td>Croquet</td>
<td>Speed walking</td>
<td>Football</td>
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<tr>
<td>Walking</td>
<td>Tennis</td>
<td>Gymnastics</td>
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<tr>
<td>Swimming</td>
<td>Weight machines</td>
<td>Lacrosse</td>
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<tr>
<td>Shooting</td>
<td>Ice skating</td>
<td>Basketball</td>
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<tr>
<td>Shuffleboard</td>
<td>Roller blade/inline skating</td>
<td>Handball</td>
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<tr>
<td>Horseshoes</td>
<td>Weight Lifting</td>
<td>Jogging</td>
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<tr>
<td></td>
<td>Hockey</td>
<td>Kayaking</td>
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<td></td>
<td>Downhill skiing</td>
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<td>(surgeon dependant)</td>
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# EXERCISES

## IMMEDIATE POST-OPERATIVE EXERCISES

### DEEP BREATHING AND COUGHING

Until you are up and moving well it is important for you to take 10 deep breaths and cough every hour you are awake.

The following exercises are designed to improve your mobility and muscle strength postoperatively. Repeat exercises 10 times. Do 2 – 3 sessions per day.

1. **Foot and ankle pumps**
   - Point your foot up and down.
   - Make ankle circles.

2. **Static Gluteal/Hamstring Strengthening**
   - Tighten your buttock muscles while pressing your heel into the bed. Hold for a count of 5 seconds.

3. **Static Quadriceps Strengthening**
   - Tighten thigh muscles while pushing your knee into the bed. Hold for 5 seconds.

## POST-OPERATIVE EXERCISES

1. **Assisted knee bending with towel**
   - Sitting as shown with holding towel around ankle
   - Bend the operated knee with assistance from hands.
   - Hold ______ seconds. Repeat ______ times, ______ per day.

Note: The goal is to eventually decrease the dependency on the hands and towel
2. Quadriceps (knee straightening) over a roll with assistance
   - Lie as shown with 6-8 inch roll under the operated knee and towel around ankle
   - Straighten the knee and lift the heel up off the bed while using the hands to assist the movement.
   - Hold ______ seconds. Repeat ______ times, _____ times per day.

3. Heel slides
   - Bend your operated knee by sliding your heel as far as possible towards your buttocks.
   - Hold ______ seconds. Repeat ______ times, _____ per day.

4. Quadriceps (knee straightening) over a roll
   - Lie as shown with 6-8 inch roll or towel wrapped around coffee can under the operated knee
   - While pressing the knee into the roll, raise the heel up off the bed until the leg is completely straight.
   - Hold _____ seconds. Repeat _____ times, _____ per day.

Note: Initially you may not achieve full knee straightening but with effort and time, you will get there!
5. **Straight leg raise**
   - Lying as shown with operated leg straight and good leg bent
   - Raise operated leg up about 6-8 inches while keeping it **completely straight**.
   - Hold ______ seconds. Repeat ______ times, ______ per day.

6. **Extension stretch (knee straightening)**
   - **Sit** as shown with a pad of towel under the heel of the operated leg and hands above the knee.
   - Tighten thigh muscles and press the back of the knee into the bed.
   - Push down with your hands to increase the stretch.
   - Hold ______ seconds. Repeat ______ times, ______ times per day.

7. **Static Quadriceps strengthening + hip abduction**
   - Lie as shown with knees straight and toes pointing up on operated leg.
   - **Slide** operated leg outwards along the bed as far as possible and return while keeping toes pointed up.
   - Repeat _____ times, _____ times per day.
8. Knee bending (4 different methods)

**Sitting at edge of chair, slide heel along floor (using garbage bag if necessary) bending the operated knee as much as possible.**

Hold ______ seconds. ______times, ______ times per day.

**Cross ankles with good leg over the operated leg. Push backwards with the good leg to assist bending of the operated knee.**

Hold ______ seconds. ______times, ______ times per day.

**With your operated knee bent and foot planted on the floor, slide your hips forward to bend the knee as much as possible.**

Hold ______ seconds. ______times, ______ times per day.

**Use a belt to bend the knee as far as possible.**

Hold ______ seconds. ______times, ______ times per day.

9. Knee lunge (for Knee bending)

- Stand with foot of the operated leg up on an 8-12 inch stool or stair as shown. Hold for support on both sides.
- Lean forward leading with operated knee until a strong stretch is felt but not severe pain.
- Hold _____ seconds. Repeat _____ times, _____ times per day.
10. Gravity assisted knee stretch (for knee straightening)
- Lie as shown with ankles crossed (operated leg on top) at the side of bed with a pad of
towel under the thigh just above the operated knee.
- Uncross ankles and let the operated leg to hang over side of the bed. Allow the weight of the
foot and lower leg to stretch the operated knee straight.
- Hold ______ seconds. Repeat ______ times, ______ per day.

ADVANCED POST-OPERATIVE EXERCISES

1. Knee straightening in sitting
- Sit as shown with back straight
- Tighten thigh muscles and lift heel off the floor until the knee is completely straight.
- Hold ______ seconds. Repeat ______ times, ______ per day.

2. Hamstring Stretch (back of thigh)
- Sit as shown with back straight and operated leg straight
- Keeping low back arched, lean forward from the hips until a strong stretch is felt in the back
of the operated knee.
- Hold ______ seconds. Repeat ______ times, ______ times per day.
3. **Bending knee while in standing (Hamstring Curls)**
   - Standing at a counter or chair as shown, lift heel of operated knee towards the buttocks.
   - Do not allow the operated knee to move forward.
   - Hold _____ seconds. Repeat ______ times, ______ times per day.

4. **Sitting to standing**
   - Sitting on a fairly high chair or at edge of bed, practise coming up to standing with only slight use of the arms.
   - Maintain a slight arch in your back and **lean forward** as you rise up.
   - Fully straighten your knees upon standing.
   - As you get stronger, try not using your hands and/or progressively lower chairs.

5. **Hip abduction in standing or side lying (moving operated leg sideways)**
   - Standing a counter or table, move operated leg sideways without raising your pelvis.
   - Keep the belt line level (left). This can also be done lying on your unaffected side (right).
   - Hold _____ seconds. Repeat ______ times, ______ times per day.
6. Wall Slides
- Lean back against a wall with heels shoulder width apart and about 6-12 inches from the wall as shown.
- Slide down the wall about ¼ or ½ way.
- Hold ______ seconds. Repeat ______ times, ______ times per day.

7. Step-ups
- Using a block or a stack of books about ______ inches thick, practise stepping up with your operated leg.
- Lead with your operated knee as you are stepping up. Feel your whole body moving forward and up.
- Hold ______ seconds. Repeat ______ times, ______ times per day.

8. Step-downs
- Stand on a small block or the bottom step with both legs.
- Practise stepping down with your good leg while your operated leg controls the descent.
- Repeat ______ times, ______ times per day.
9. Calf stretch
   - Holding onto support, place your operated leg back with the foot facing forward.
   - Lean forward and allow the good knee to bend while keeping the operated leg straight.
   - Feel the stretch in the calf of the operated leg.
   - Hold ______ seconds. Repeat ______ times, ______ times per day.

10. Heel raises
    - Standing, holding onto support, keeping equal weight on legs lift both heels off the ground
    - Hold ______ seconds. Repeat ______ times, ______ times per day.

11. Lateral step ups
    - Holding onto light support as needed
    - Standing with small step or stair at side of operated leg as shown, practice stepping up.
    - Hold ______ seconds. Repeat ______ times, ______ times per day.
12. Hamstring curls with resistance (band or tubing)
   - Anchor band or tubing around a stable object. Place heel of operated leg in band.
   - Starting with the leg in relatively straight position, bend the knee by pulling back on the band.
   - Hold ______ seconds. Repeat ______ times, ______ times per day.

13. Knee straightening with resistance
   - Standing as shown with operated knee slightly bent and band tight. Place majority of weight on operated leg
   - Straighten knee against resistance
   - Hold ______ seconds. Repeat ______ times, ______ times per day.

14. Standing on one leg
   - Practise standing straight on operated leg with only slight support from a chair or counter.
   - Hold ______ seconds. Repeat ______ times, ______ times per day.
   - Progress by standing on a pillow, cushion or other unstable surfaces.
   - Further challenge can be added by doing the above with no support and eyes closed.
15. Stepping Matrix

- Standing with feet shoulder width apart, imagine standing at the centre of a clock lying flat.
- Step forward to the 12 O’clock position with the operated leg with a slight lunge in the knee. Take majority of the weight onto the operated leg and then step back to the centre.
- Now step to the 1:30 position and return. Repeat to the 3:00, 4:30, and 6 o’clock positions.
- Progress to the 7:30, 9:00, 10:30 positions as balance and strength improves.
- Further challenge can be added by gradually taking longer steps to each position and with a deeper lunge.
- Repeat matrix ______ times, ______ times per day.

*This booklet is meant as general guide for your exercises and other aspects of rehabilitation. If you are unsure of a particular exercise, or how to progress the intensity, it is best to clarify it with your Physiotherapist*
Lower Extremity Functional Scale score | Range of Motion
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We hope this booklet has helped to give you the information you need on to get the best possible outcome after your total knee replacement. The information comes from the knowledge and experience of your health professionals. Special acknowledgment to Thunder Bay Regional Health Sciences Centre’s Total Joint Clinical Pathway Team as well as St-Joseph’s HealthCare Group in London for sharing their Total Knee Replacement booklet.

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