

# Knee Replacement Surgery at Crystal Clinic



## Important Phone Numbers

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CCOC HOSPITAL: 330-670-1005

OSI: 330-668-4040

SCHEDULING EXT: 16034

MEDICAL RECORDS: 330-670-4076

PRE ADMISSION TESTING: 330-670-3508

BILLING CONCERNS: 800-818-0886

PHYSICAL THERAPY: 330-668-4040

COMMUNITY OFFICES:

- Ashtabula: 440-641-0004

- Barberton: 330-670-4111

- Canton: 330-670-4006

- Cuyahoga Falls: 330-929-9136

- Fairlawn: 330-668-4040

- Green: 330-644-7436

- Hudson: 330-475-1631

COMMUNITY OFFICES CONT:

- Independence I: 216-357-4440

- Independence II: 216-369-2830

- Kent: 330-673-6299

- Lyndhurst: 440-460-0454

- Medina: 330-721-8232

- Solon: 440-349-7137

- Wadsworth: 330-335-1586

- Warren: 330-394-8181

## Watch "How to prepare for your Knee surgery" video

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In addition to reading this booklet, your clinical team asks that you watch an informative video about your surgery to help prepare you for your procedure.

### Here's all you need to do:

**1** Go to: [www.CrystalClinic.com/patient-information/surgery-education](http://www.CrystalClinic.com/patient-information/surgery-education) or scan the QR Code with your smart phone.



- 2** Select the video that matches the procedure you are having and click on the link, "Watch: How to prepare for your knee surgery."
- 3** View the video. Ideally someone who will be helping you throughout recovery should read this booklet and view the video with you.
- 4** If you have any questions after reading the booklet or watching the video, our staff will be happy to help you.

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# Driving Directions to Crystal Clinic Hospital

## FROM THE NORTH:

Take I-271 South to exit 10 for I-77 South. Exit at 137-B for OH-18 W/ Medina Rd toward Medina. Turn right at first cross street onto Crystal Lake Rd. Turn right onto Embassy Pkwy. Pass the first two Crystal Clinic offices at 3975 and 3925 and continue on. Turn left into 3557 Embassy Pkwy.

## FROM THE EAST:

Take I-76 West to I-77 North. Exit at 137-B for OH-18 W/Medina Rd toward Medina. Turn right at first cross street onto Crystal Lake Rd. Turn right onto Embassy Pkwy. Pass the first two Crystal Clinic offices at 3975 and 3925 and continue on. Turn left into 3557 Embassy Pkwy.



## FROM THE WEST:

Take US-224 East. US-224 East and I-76 East merge. Continue to exit 13-B to merge onto OH-21 North. Keep left at the fork and follow signs for I-77 North/OH-21/Cleveland and merge onto I-77 North/OH-21 North. Exit at 137-B for OH-18 W/Medina Rd toward Medina. Turn right at first cross street onto Crystal Lake Rd. Turn right onto Embassy Pkwy. Pass the first two Crystal Clinic offices at 3975 and 3925 and continue on. Turn left into 3557 Embassy Pkwy.

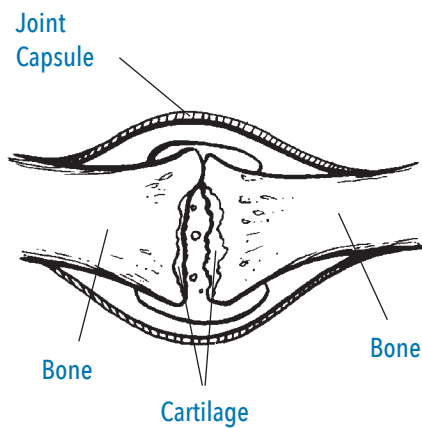
## FROM THE SOUTH:

Take I-77 North to Montrose-Ghent. Exit at 137-B exit for OH-18 W/Medina Rd toward Medina. Turn right at first cross street onto Crystal Lake Rd. Turn right onto Embassy Pkwy. Pass the first two Crystal Clinic offices at 3975 and 3925 and continue on. Turn left into 3557 Embassy Pkwy.

# What is a Joint?

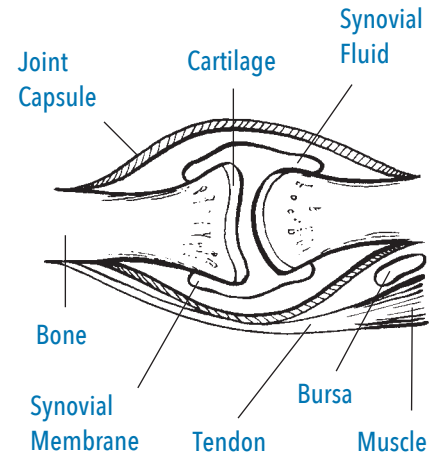
Joints are formed when two or more bones come together. With the aid of muscles, tendons and ligaments, joints enable us to move about.

There are different kinds of joints, often classified according to the type of motion that they permit. The knee and elbow are called "hinge" joints, primarily allowing motion back and forth. The hip is a "ball and socket" joint with a multi-directional, circular range of motion. The shoulder is a complex variation of a ball and socket joint.



Joint with Osteoarthritis

Inside each joint, the surfaces of the bones are covered with a tough, smooth material called *articular cartilage*. The joints are surrounded by a strong envelope of connective tissue called a *capsule*. The inner lining of this capsule is called the *synovial membrane*, which secretes a slippery fluid (*synovial fluid*) that keeps the joint surfaces moist and lubricated. When all parts of the joint are healthy, normal motion and weight bearing should be pain-free.



Healthy Joint

# What is Arthritis?

## Osteoarthritis (OA)

*Osteoarthritis* is also known as degenerative joint disease. It affects the smooth, elastic *cartilage* that is on the ends of bones. It is one of the most common forms of arthritis. Factors that are thought to contribute to the development of OA are age, heredity, overuse, injury, obesity (for OA of the knees) and other diseases.

Osteoarthritis is considered a "wear and tear" type of arthritis. The smooth cartilage becomes worn away and no longer allows smooth movement in the joint. Without healthy cartilage acting as a cushion, *bone rubs against bone* causing pain and stiffness.

If you have this type of arthritis you may experience a "grinding" sensation when you move the joint, or feel a dull, persistent ache. Swelling and loss of function are common as the cartilage continues to wear away, and the bones in the joint grind against each other.

Osteoarthritis tends to affect weight-bearing joints, such as the hips, knees and spine. The shoulder joints and certain finger joints may also be affected. Usually the problem is localized to just a few specific joints.

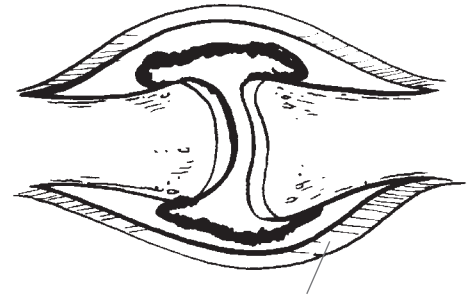
## Rheumatoid Arthritis (RA)

This type of arthritis represents a more complicated joint problem. It is a systemic disease, which means it affects the entire body. RA is thought to be a disease in which the immune system – which normally protects the body from disease – turns against the body. It is thus often called an “autoimmune” disease.

While the effects of rheumatoid arthritis can be seen in many body structures, joints seem to be especially susceptible. But instead of primarily affecting the cartilage (which occurs in osteoarthritis), rheumatoid arthritis affects the *synovial membrane*, or inner lining of the joint capsule.

In RA, the synovium becomes inflamed (hot, swollen and painful). Cartilage, bone and other joint structures are gradually destroyed by disease. Joint deformity may result.

The symptoms of rheumatoid arthritis usually include joint and muscle pain, tenderness and swelling which are apparent in several joints throughout the body. Morning stiffness is common. There may be slight fever, fatigue, decreased appetite and weight loss.



Inflamed Synovial Membrane

Joint with  
Rheumatoid Arthritis

## What Can Be Done for Joint Pain?

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Physicians generally try to treat joint pain with non-surgical approaches first. This may include rest, physical therapy, applications of heat or cold, splinting and medication. Commonly prescribed are “non-steroidal anti-inflammatory drugs” (NSAIDs). Ibuprofen and naproxen are two familiar generic drugs of this type. Low-dose forms are even available over the counter (Motrin®, Advil®, Aleve®, etc.).

Sometimes injections of a cortisone-like drug directly into a joint can reduce pain and inflammation.

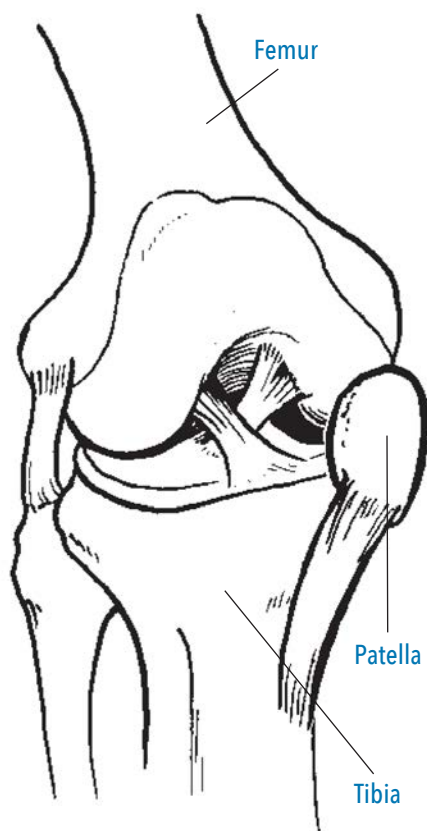
If the above methods are not adequate, surgery may be indicated. For many individuals, joint replacement surgery can successfully reduce pain and restore function when other approaches have failed to bring relief. New techniques and technology can offer patients not only increased mobility, but also increased independence.





# Understanding Knee Replacement

The knee is made up of three bones: the *femur* (thigh bone), *tibia* (lower leg bone) and *patella* (kneecap). Each of these bones is covered with a special smooth tissue called articular cartilage. This cartilage is designed to cushion the weight-bearing surfaces of the bones and to provide a smooth covering that glides effortlessly.

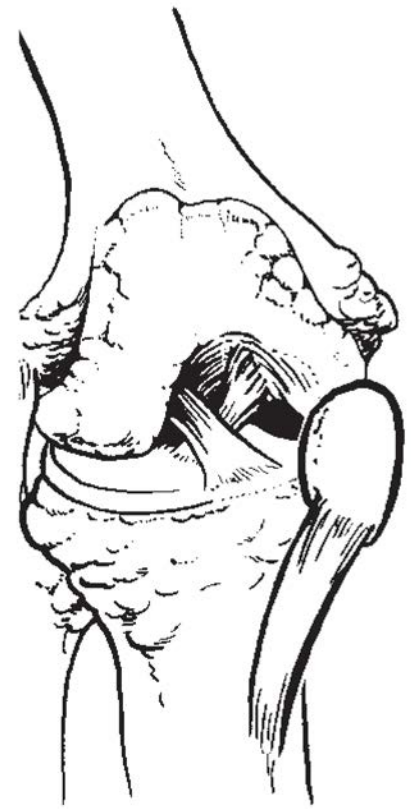


Healthy Joint

Over time, there is a gradual wearing away of the articular cartilage, or the lining of the end of the bone. As this cartilage becomes rough, the lubrication and the shock absorption diminishes. This is called *osteoarthritis*. Once this happens, movement in the joint is "bone on bone" causing deep aching pain and decrease in function. At this point, replacement of the joint surfaces is required to permit increased movement and decrease pain

Joint replacement surgery, or *arthroplasty*, involves removing the diseased or damaged portion of a joint and replacing the joint surfaces with synthetic materials. The new components, called prostheses or implants, are made of high-impact plastics and/or metal alloys. They have smooth surfaces for comfortable movement when healing is complete.

Special cements are sometimes used to attach the implants to the patient's healthy bones. Some implants are made of a porous material that allows the patient's own bone to grow into the prosthesis. This greatly increases the strength and durability of the implant.



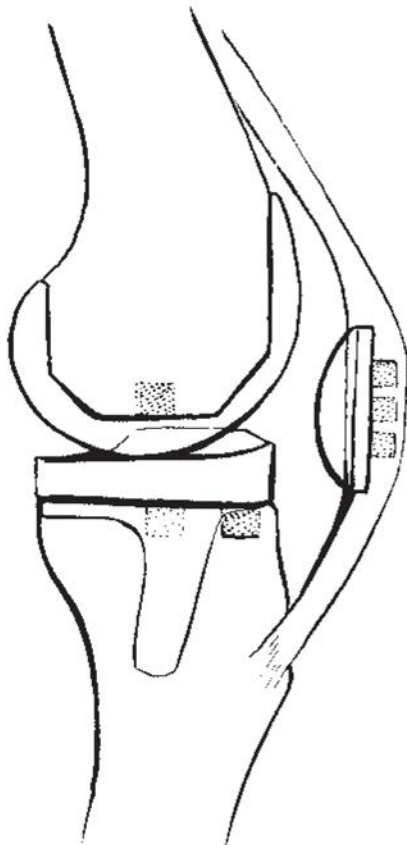
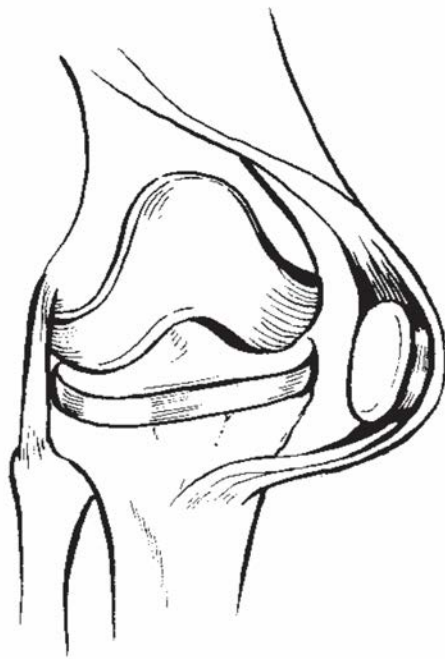
Joint with Osteoarthritis

## What are the Benefits of Knee Replacement?

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Your new knee will reduce the amount of pain you've been experiencing. It will also increase your range of motion, allowing you to return to most of your daily living activities.

In total knee replacement surgery, the damaged ends of the bones that meet at the knee and underside of the kneecap are replaced with an implant.



## How Long Will the New Joint Last?

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Modern joint replacements have a well-established record for longevity and durability. However, they need to be closely followed for signs of wear or loosening. New prosthetic components and surgical techniques enable safe and effective correction of potential

problems before they get out of hand. For this reason, it is recommended that you get a periodic check-up with X-rays so that your new joint can be monitored over time.



# Your Health Care Team

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*You and your orthopaedic surgeon have determined that a total joint replacement is the best solution for your joint problem.*

Before, during and after your surgery, a number of health professionals will play an important role in your care. Each of these individuals is highly skilled in his or her specific area of expertise and will provide an essential component to your surgery or recovery process. It will be important for you to follow their instructions – and to feel free to ask questions about things which you may not totally understand.

Your Total Knee book will be used as a reference from now until 3-6 months after your surgery.

## Orthopaedic Surgeon

Your orthopaedic surgeon is a physician who specializes in the care of injuries and diseases involving bones, joints and other parts of the musculoskeletal system. He or she performs the actual surgery and also supervises your overall care.

## Anesthesiologist

The anesthesiologist is responsible for administering and monitoring the anesthesia during your surgery. He or she carefully reviews your medical records and works with your physician to make sure that the right type of anesthesia is given for the particular procedure being performed. The anesthesiologist may also write medication orders for your surgery.

## Hospitalist

The hospitalist is a physician that will follow you medically through your hospitalization if ordered by your orthopaedic surgeon.

## Midlevel Practitioners

Your surgeon may also work with an associate such as a physician assistant (PA) or nurse practitioner (NP). He or she often assists the surgeon in the operating room and helps to oversee your care through your recovery.

## Nursing Team

While you are in the hospital, nursing care will be planned and provided by a nursing team. These professionals may include a registered nurse (RN), a licensed practical nurse (LPN), and support personnel. The nursing manager coordinates overall functioning of the nursing unit and supervises your nursing care.

## Physical Therapy

The physical therapy department provides specialized care that is designed to help you recover and return to function. Therapists will work with you and teach you how to do the following:

- Transfer from a chair or bed
- Perform exercises to improve motion and strengthen muscles
- Walk with crutches or a walker
- Go up and down stairs
- They may also assist you with purchasing equipment with an insurance approved vendor.

Physical therapy plays a big role in your recovery. If you are able to accomplish all that your therapist instructs you to do, you are likely to have a quicker recovery and a shorter hospital stay.



## Occupational Therapy

Occupational therapists will teach you how to take care of yourself at home and safely resume normal daily activities. Many activities that we take for granted when we are well are difficult after joint surgery until recovery is complete. The occupational therapist will show you how to get dressed, bathe and do household tasks with minimum pain and fatigue and without damaging the new joint.

## Dietitian

Upon physician referral, a dietitian will be available to talk to you. The dietitian will analyze your diet and determine if you need to make any changes to help in your recovery. Together you'll examine what foods you usually eat, whether you have special dietary needs and whether you are getting adequate nutrition. Your first meal will be after surgery and will consist of clear liquids (juice, tea, broth, gelatin, and a nutritional supplement). Your doctor will switch you to a regular diet as you are able to tolerate it. If you have any questions or requests, please ask your nurse to notify the dietary department.

## Discharge Planner or Social Worker

To make your discharge from the hospital go smoothly, a discharge planner and social worker are available. If your doctor orders, the discharge planner will come speak with you.

We anticipate the majority of patients will go directly home after discharge. If other arrangements would become necessary, the discharge planner will work with you to coordinate.

## Respiratory Therapy

A respiratory therapist may come to your room the first day after surgery. He or she will monitor your respiratory status and help if there's a need for oxygen. You will be taught how to use your spirometer.

## Spiritual Support

All patients will be asked at the time of registration who they would like called in the event that they desire this service. Please bring that source and number with you to the hospital. The nursing staff will be able to coordinate this if it becomes necessary.



# Getting Ready for Surgery: Matters of Safety & Convenience

To help you with a speedy recovery and to prevent problems after your surgery, there are things you can do to get both yourself and your home ready.

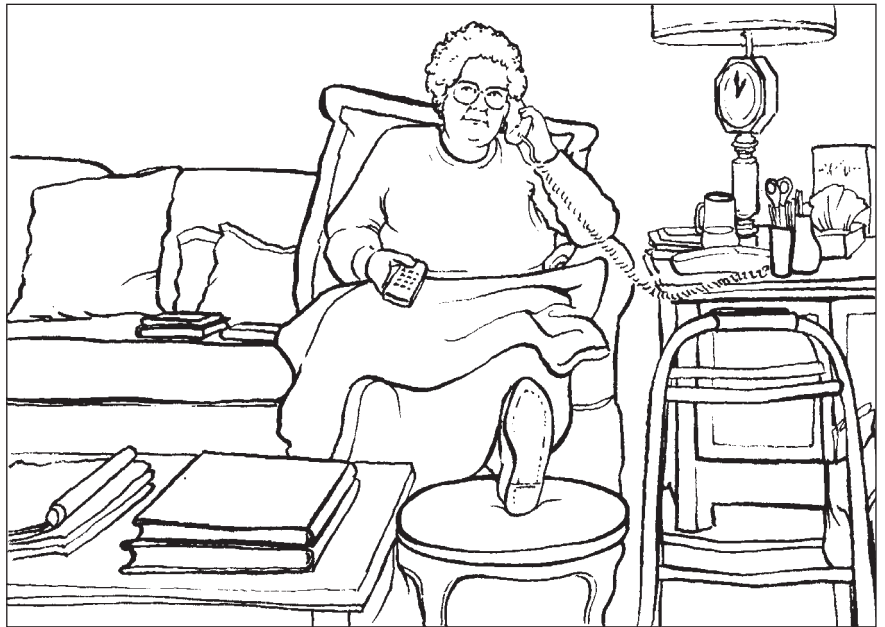
## For Your Safety:

- Tape down or remove any electrical cords or wires.
- Remove all throw rugs and small items from the floor.
- Keep your pets in another area of the house until you get settled after surgery.
- Have someone move your furniture to allow you more space to walk.
- It may be recommended to move your bed downstairs.

## For Your Convenience:

Arrange things you might need so you can reach them easily:

- medications
- magazines
- telephone
- phone numbers of friends and relatives, and your doctor
- cooking/eating utensils



You may need the following supplies after surgery:

- raised toilet
- walker
- reaching tool
- oral thermometer
- chair of recommended height with arms to help you get up and down easily
- nutritious meals or frozen dinners you can "heat and eat"
- tub/shower seat

Make arrangements to go home from the hospital in a four-door car with bench seats instead of bucket seats.

Plan to rest for at least one hour, twice a day. Limit phone calls, visitors, TV, etc., during rest periods.

It's a good idea to have important phone numbers by each phone in case of an emergency.

# Preparing Your Home for After Surgery

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To help you recover safely and prevent problems after surgery, there are many things that you can do to prepare your home and yourself.

## Floors and Walkways:

- Remove all throw rugs if possible. This will help to prevent tripping.
- If your throw rugs cannot be removed, use rugs with non-skid backing to help prevent slipping.
- Repair or replace torn carpeting to prevent tripping.
- DO NOT wax wood or linoleum floors, to prevent slipping and falling.
- Remove or securely tape down any cords or wires.
- Keep pets in another area of the house until you are settled after surgery.

## Bathrooms:

- Use an elevated toilet seat or commode if you need support getting on or off the toilet.
- Install grab bars around the toilet if you need more support getting on and off the toilet.
- Have a tub or shower chair available to use when bathing. Use a long-handled sponge to wash your legs and feet, or have someone help you.
- Use a rubber bath mat or install skid-proof strips to help prevent slipping.
- Install grab bars in the shower or on the side of the tub to help you keep your balance.
- DO NOT use soap dish or towel bar for balance as they can easily pull out of the wall.
- Soap-on-a-rope is a good way to keep your soap from dropping. Keep your bath items in a basket or bag within easy reach.
- Use hand-held shower if available.

## Kitchen:

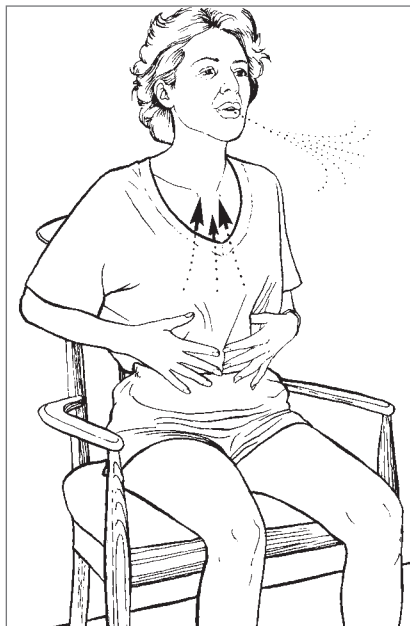
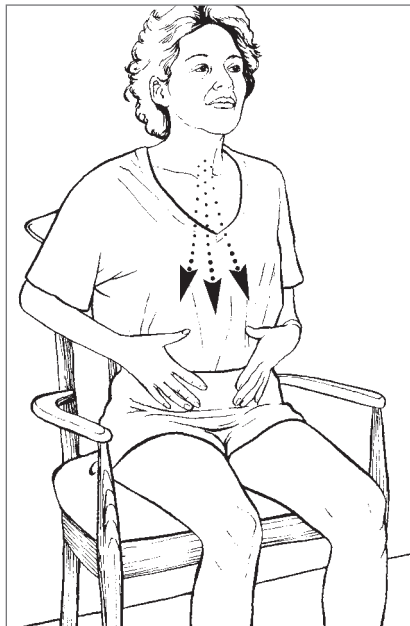
- Cook and freeze several meals or purchase healthy, frozen dinners before your admission to the hospital. They will lessen the amount of time you need to stand during meal preparation.
- Items that you use often can be moved into the kitchen to an easily reached shelf, cupboard, or onto the counter. A safe level at which to store these items is between the shoulder and knee level.
- Keep your cleaning supplies in a basket that you can reach easily.
- Keep your dishes, spices and utensils within easy reach.
- Keep your pots and pans within easy reach.
- When cooking, do not lift pans and heavy items across the counter or stove. Instead, slide them across. This will put less strain on your joints and help to prevent twisting.
- DO NOT use a step stool or chair to reach items. If you cannot reach it with your grabber, have someone help you.
- Consider keeping a box of baking soda by the stove in case of fire.

# Your Pre-Operative Exercise Program

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## Deep Breathing And Coughing

Your lungs consist of many tiny air sacs that fill with air when you breathe. In these air sacs, the oxygen from the air moves into your blood circulation.



After surgery, because of medications and inactivity, you may not breathe as deeply as you should. This may cause mucus to build up in the air sacs.

This in turn makes breathing more difficult. To clear the mucus, you will be instructed to “cough and breathe deeply.”

## Procedure

- 1 Sit upright in a chair, feet flat on the floor. (Or, while in bed, lie on your back with both legs straight.) Place your hands on your lower rib cage and abdomen.
- 2 Take in a deep breath through your nose. Try to make your ribs move outward and your stomach bulge out.
- 3 In a long, slow manner, blow the air out of your lungs. When you breathe out, push the air out by making your ribs move in and your stomach sink inward.
- 4 Repeat steps 2 and 3 three times.
- 5 On the fourth breath, hold your breath for a count of three to five. Then cough deeply three times in a row.

## Pre-Operative Exercises

The most important muscles responsible for your speedy recovery are:

- Thigh muscles (quads)
- Muscles of the buttocks (gluteals)
- Stomach muscles

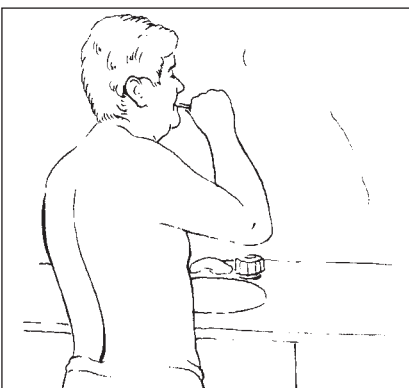
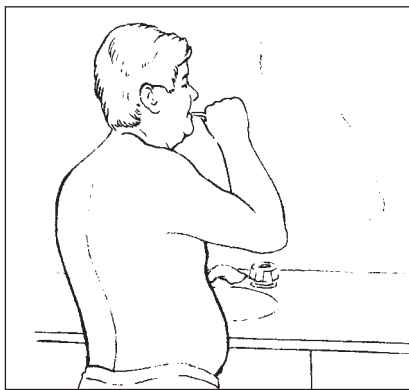
Maintaining the strength of these muscles will greatly assist you in your recovery.

### STOMACH MUSCLE STRENGTHENING

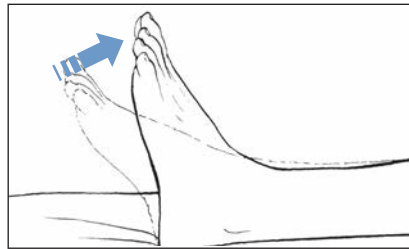
The stomach (abdominal) muscles are very important for sustaining proper posture.

While standing, pull your stomach in and away from your belt line. Hold for a count of five to ten and relax.

**Don't hold your breath!**

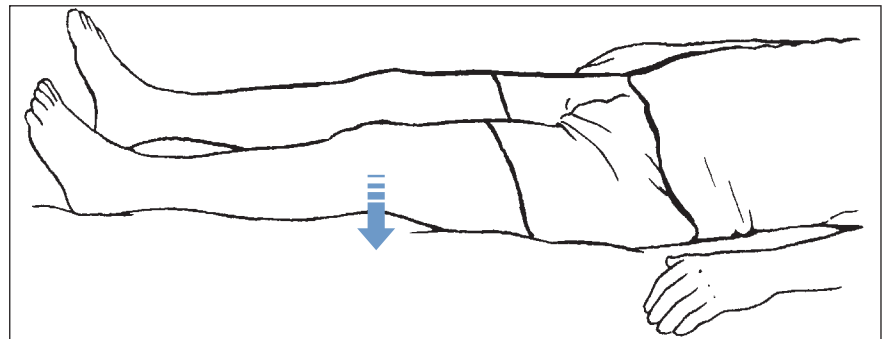


Do each exercise ten times, once or twice a day before surgery, as instructed.



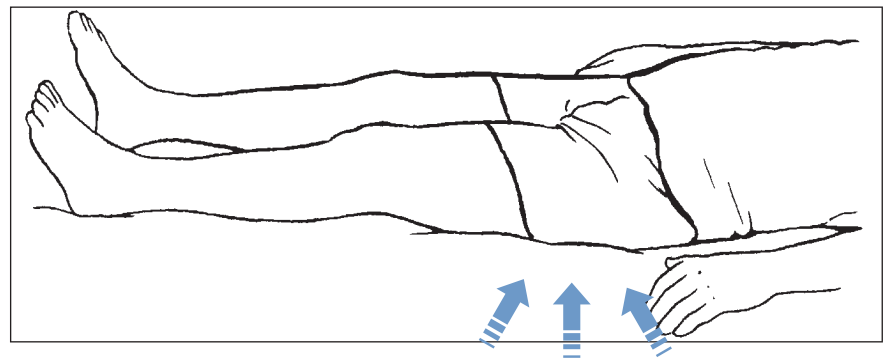
### ANKLE PUMPS AND CIRCLES

While sitting or lying, move your foot and toes up and down (like pumping a gas pedal). Try to keep your knee flat against the bed. Relax and repeat.



### QUAD SETS

Lie on your back with your legs out straight. Tighten your thigh muscles by pressing the back of your knee down into the bed, keeping toes toward the ceiling. Hold for a count of five.



### GLUTEAL SETS

While lying on your back, squeeze your buttocks together tightly. Hold for a count of five. Or, while standing, squeeze your buttocks together and hold for a count of five.

**Note: Stop exercising if you experience pain at any time.**



Do each exercise five to ten times, two or three times a day before surgery, as instructed.

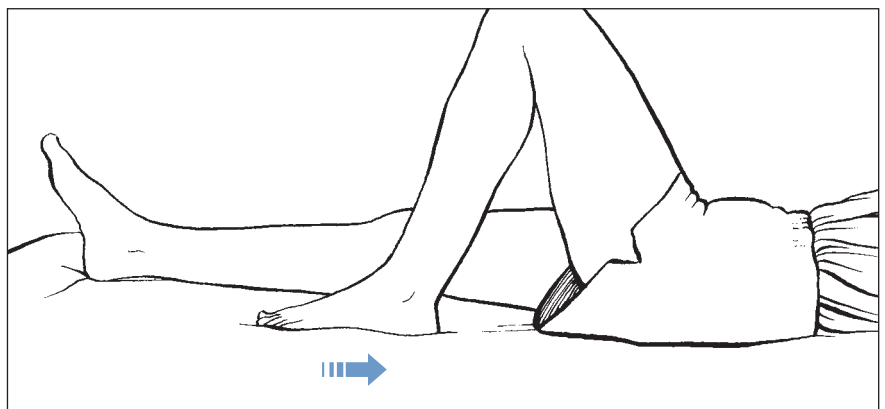
### STRAIGHT LEG RAISES

While lying on your back, slightly bend the right knee to support your low back. Point your left toes up to the ceiling and tighten your thigh muscle. Slowly lift your left leg straight up, then lower slowly back to the bed. Let your leg muscles relax. Repeat as above, then switch legs



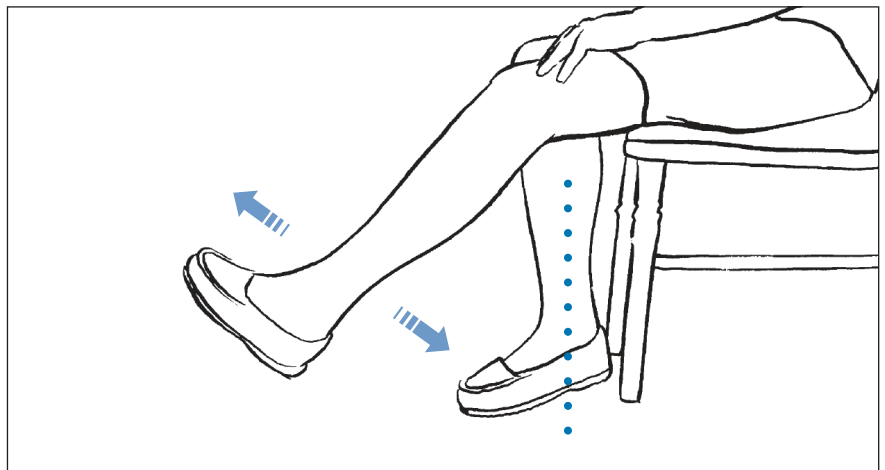
### HEEL SLIDES

Lie on your back with your legs straight. Begin to bend your left knee, sliding your heel toward your body. Slowly slide your foot down, away from your body and straighten your leg. Repeat as above, then switch legs.



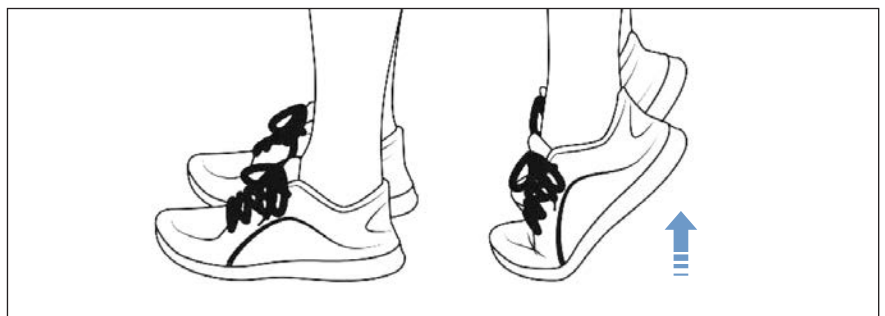
### LONG ARC QUAD SETS

Sit back on your bed or in a chair. Have your feet lightly touch the floor. Slowly straighten your left leg as much as you can. Hold for a count of five and then lower it back down. Relax and repeat as above, then switch legs.



### HEEL RAISES

Lift both heels up off of the floor shifting your weight to the balls of your feet. Hold onto a table or countertop as needed for balance. Repeat.



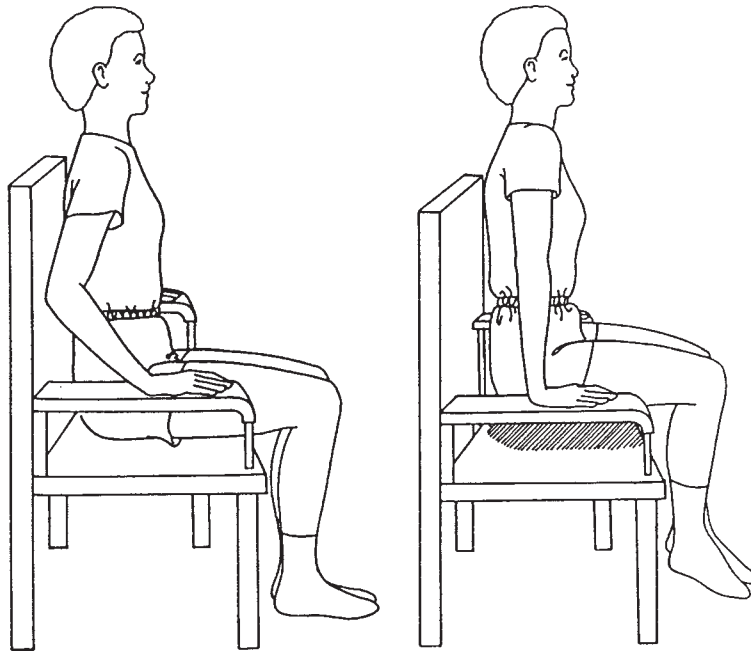
Do each exercise five to ten times, two or three times a day before surgery, as instructed.

### CHAIR PUSH-UPS

Hands on armrests. Straighten arms, raising your buttocks off of your chair. Hold for a count of 5. Repeat 10 times.

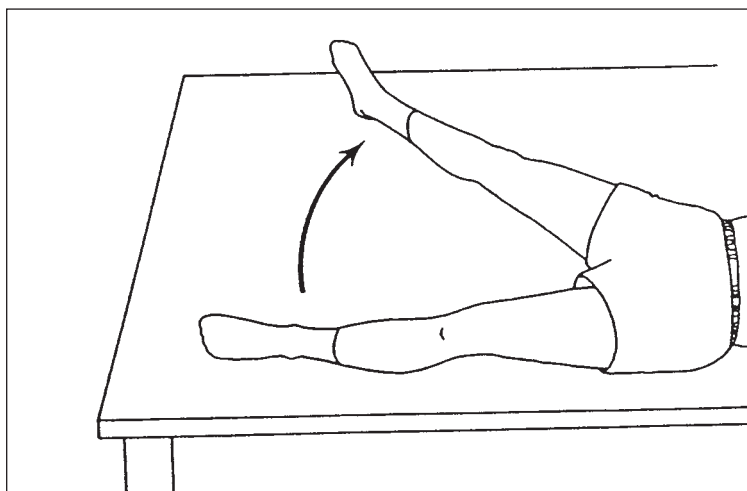
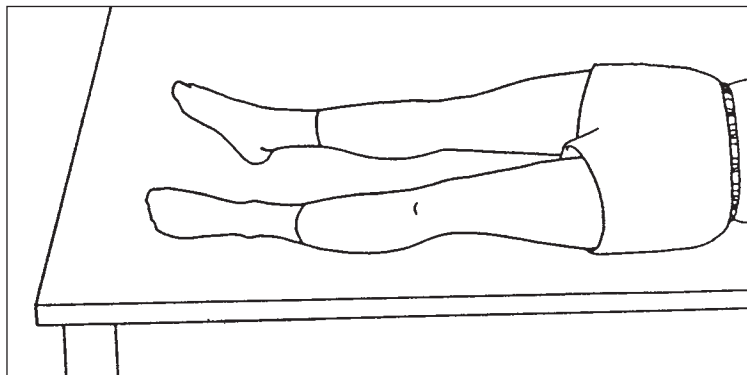
Be sure to keep your neck and spine straight while performing this exercise.

**If you have shoulder problems, talk to your physical therapist or physician before doing this exercise.**



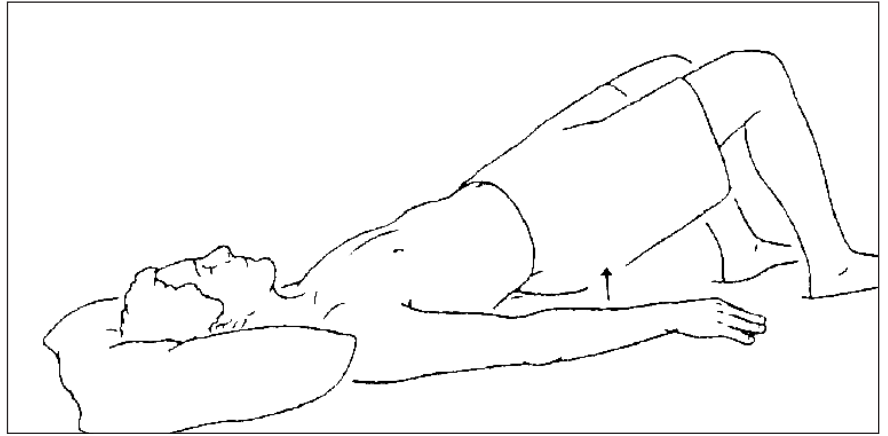
### HIP ABDUCTION AND ADDUCTION

Lie on back, slide right leg out to side. Keep toes pointed up and knee straight. Alternate and repeat 10 times.



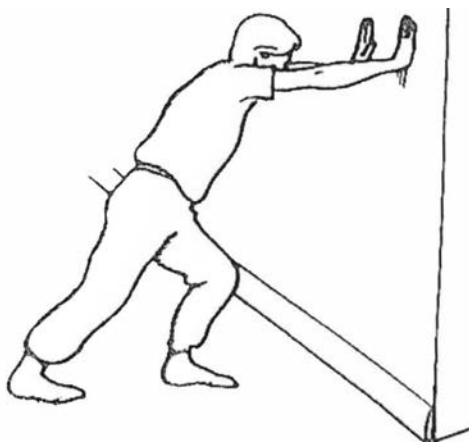
## LYING HIP EXTENSIONS

Lie on your back with your head supported by a pillow. Bend both knees up. Tighten your stomach muscles and slowly lift your hips up off the bed and tighten your buttock muscles. Hold for 3-5 seconds and slowly lower down to the bed. Repeat.



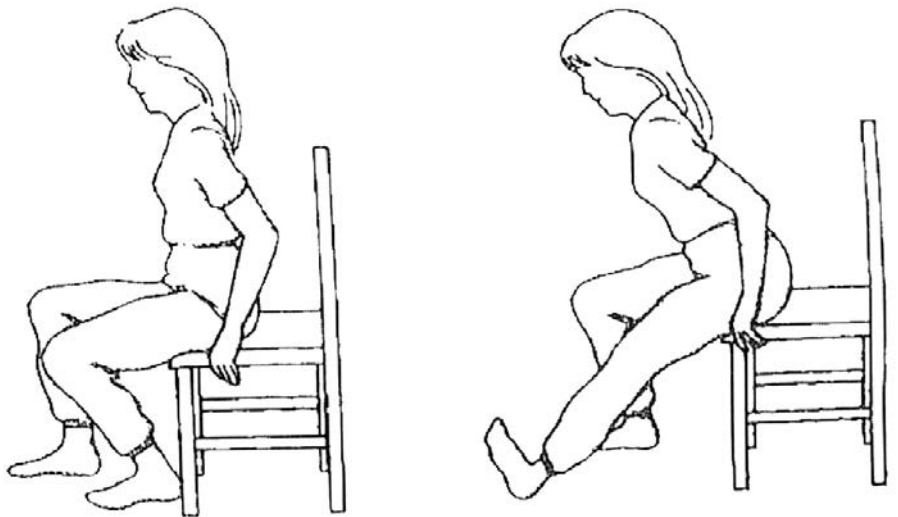
## CALF STRETCH

Facing a wall, stand with both hands flat against the wall. Extend your right leg straight back and lean forward, keeping your right heel flat on the floor, until you feel your right calf muscle stretching. Hold for 30 seconds, then come back up and repeat with your left leg. Do this stretch twice on each leg.



## HAMSTRING STRETCH

Sit on the edge of a straight-back chair, keeping both feet flat on the floor in front of you. Straighten your right leg until your right heel is resting on the floor. Slowly bend forward at the hips until you feel a stretch down the back of your right leg. Be sure to keep your back straight. Hold for 30 seconds, then sit back up and repeat with your left leg. Do this stretch twice on each leg.



# Pain: Patient Guide to Pain Management

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## Definition:

Pain is an uncomfortable feeling that tells you something may be wrong in your body. People used to think that severe pain was something they “just had to put up with.” But with current treatment, that is no longer true. Today, you can work with your nurses and doctors to relieve your pain.

## Pain Control Management:

Both drug and non-drug treatments can be successful in helping to prevent and control pain. Don't wait to report your pain. *Pain can be managed better if caught early.*

## Pain Relief Methods:

This information is provided to assist you to discuss pain control with your physician. Your doctors and nurses will discuss which of these treatments may best meet your individual needs.

## Pain Relief Medications:

Pain medications may be given in a variety of forms from topical patches and ointments to oral tablets and liquids, to injection into the skin, muscle or veins. The form of the medication is dependent on many factors.

Your doctors will discuss the form with you. Types of medications used for pain control include:

- Nonsteroidal anti-inflammatory drugs: acetaminophen, aspirin, ibuprofen, and other NSAIDS, which reduce redness, swelling and soreness and relieve mild to moderate pain.
- Opioids: Morphine, Oxycodone, and others are used for acute pain.
- Other medications: Other medications whose primary action is not pain relief but enhance pain relief or reduce side effects when used with opioids or on-opioids.
- Local anesthetics: Drugs given to block nerves that transmit pain signals.












## Non-Drug Pain Relief Methods:

These methods can be effective for mild to moderate pain and boost pain-relief effects of drugs.

- Relaxation techniques, breathing exercises, guided imagery, electrical stimulation, and therapeutic touch therapy can increase comfort.
- Physical agents: Cold therapy will be used often to control your pain. Your physical therapist will give you recommendations.

*Refer to The Role of Cold Therapy on page 42 of this book.*



COMPARATIVE PAIN SCALE CHART (Pain Assessment Tool)										
										
0 Pain Free	1 Very Mild	2 Discomforting	3 Tolerable	4 Distressing	5 Very Distressing	6 Intense	7 Very Intense	8 Utterly Horrible	9 Excruciating Unbearable	10 Unimaginable Unspeakable
<b>No Pain</b>	<b>Minor Pain</b>			<b>Moderate Pain</b>			<b>Severe Pain</b>			
Feeling perfectly normal	Nagging, annoying, but doesn't interfere with most daily living activities. Patient able to adapt to pain psychologically and with medication or devices such as cushions.			Interferes significantly with daily living activities. Requires lifestyle changes but patient remains independent. Patient unable to adapt pain.			Disabling; unable to perform daily living activities. Unable to engage in normal activities. Patient is disabled and unable to function independently.			

### Pain Reporting:

Tell the doctors and nurses about your pain. Don't worry about being a "bother." The nurses and doctors need to know about your pain and expect to help you with it.

Describe the intensity of your pain on the scale above.

An example would be: "My knee hurts on a scale of one to ten, moderately a 5." Or, "the pain in my knee is a 5." Describe the type of pain. Is it burning, stabbing, throbbing or a dull ache? "There is a burning pain in my knee."

Describe where the pain is located on your body. Point to it if you can. "There is a burning pain in my left knee."

If this is a new pain, let the staff know. "I now have a pain in my left knee that I did not have before."

### Questions?

#### What if I do not have pain relief?

If your pain is not relieved tell your nurse. The nurse will tell your doctor about your difficulty with pain control. As a team, we are here to assist you in managing your pain.

Though we cannot relieve all of your pain, we will work with you to get you to a comfortable level.

#### What if I am allergic or have side effects?

Your doctor has several options and alternatives. One of them will work for you.

#### What if I have a problem with drug/ alcohol dependence?

You may require careful assessment to manage withdrawal problems. Share your concerns with your nurse and doctor so that a plan specific to your need is developed. There are pain relief measures for you.

#### What if I am an older adult?

Medication may work differently in the older adults but your physician will be able to adjust the medication and dose.

#### How will my pain be managed at home?

When you are discharged your physician will help you to continue to have pain relief in the home setting.

#### How can I prevent post-op constipation?

Narcotic use after surgery can cause constipation. The nursing staff will assist you to minimize this through use of stool softeners. You can do your part by increasing dietary fiber, fluid intake and increased activity. *Begin stool softeners three days before surgery and continue until four to six weeks after surgery.*

## In the Operating Room

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The total length of time in the operating room is approximately two hours. You will also spend about two hours in the recovery room.

## Recovering in the Hospital

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During the first part of your recovery, a physical therapist and possibly an occupational therapist will help you get back on your feet. They'll also teach you the skills that will prepare you for recovery at home. You need to take an active role in this recovery process; it's your job to follow through with the rehabilitation program.

## Possible Complications

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You will most likely experience some discomfort during your rehabilitation. However, the pain should not prevent you from continuing the exercises that you have been taught. Feel free to call your surgeon if you have concerns about the level of your discomfort.

The particulars of your surgery and recuperation will vary depending on the severity of the disease, your age and any complications which might ensue. *Although complications are rare, some of the ones your doctor will watch out for include deep vein thrombosis (DVT), blood clots, dislocation, nerve involvement, urinary incontinence and infection.* For further information about these or other possible complications, talk with your physician.

Your physician and therapy staff will carefully monitor how well you regain your range of motion after surgery. Sometimes, despite diligent post-operative therapy, an operated knee will remain stiff. This is due to scar tissue. Gentle manipulation done under anesthesia may be necessary as determined by your doctor.

Less than one percent of patients having total joint surgery will have an infection, and extensive precautions are taken before, during and after surgery to prevent this. All total joint patients are placed on antibiotic therapy during their surgery and post-operatively. The antibiotics are administered intravenously and are used as a preventive measure.

On occasion, infection may occur as late as three to four years or more after the surgery itself. Joint infections occurring after six months are felt to be secondary to (resulting from) an infection occurring elsewhere in the body. Urinary tract infections are the primary cause. Infections should, therefore, be treated quite aggressively in an attempt to avoid the rare but always serious consequences of secondary total joint infections.

*After surgery you may need to take antibiotics before having certain medical and dental procedures done, including teeth cleaning, oral surgery, endoscopic procedures (bladder or colon). It will be important for you to tell your dentist or doctor that you have a total knee replacement. This precaution is necessary to prevent infecting your new joint.*

You may receive a total joint replacement card to carry with you. This instructs you to check with your surgeon's office before undergoing any invasive procedure such as those listed above.



# Preventing Complications

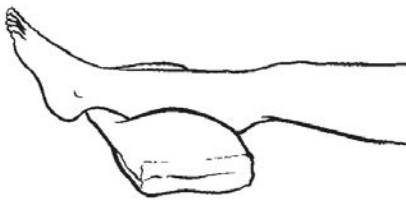
To decrease the chance of developing complications after surgery, such as stiff joints, blood clots, or pneumonia, it is important to follow the instructions of your doctor, nurse and therapist. Certain exercises and proper techniques for moving about will protect your new joint and help aid your recovery.

For example, your lungs must properly inflate to make sure that they return to normal function. The best way to do this is to use a spirometer to exercise the muscles responsible for breathing. *Use of this device will measure the air moving in and out of your lungs. Test yourself and work hard to increase your scores.*

**The techniques on the following pages will be taught to you by the therapists who work with you before and after your surgery.**

**Stay active and alert during the day.**

**Don't sleep your hospital stay away!**



Whether sitting or lying down, rest with a pillow beneath your calf only, so that your operated leg is straight.

You may use a towel roll on the outside of your thigh/hip to keep your operated leg from "rolling out" to your side.

**Do not rest with a pillow under your knee. Do not allow the operated leg to "roll out." Keep your knee cap and toes pointed toward the ceiling.**

## Use Your Spirometer Ten Times Each Hour While Awake

Do the exercises the physical therapist instructs you to do. These are explained in more detail on the following pages.

Follow the hospital staff's instructions for when and how to sit up in bed, how to "dangle" on the side of the bed and how to sit in a chair. These procedures are also explained in more detail on the following pages. *Do NOT attempt to do any of these on your own until you have been taught the proper procedure and have been given medical clearance.*



You may have to limit how much weight you put on your leg.

Do not pivot on your **operated** leg when walking. Take small steps to turn.

Your physician will specify how much weight you are allowed to put on your **operated** leg. Following is a list of commonly used terms:

**WBAT**      **Weight bearing as tolerated:** You may put as much weight on the **operated** leg as can be tolerated, including full weight bearing.

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**PWB**      **Partial weight bearing:** You may put 40 percent or less of your body weight on the **operated** leg.

---

**TDWB**      **Touch down weight bearing:** You are to put ten percent or less of your body weight on the **operated** leg.

Do NOT increase weight bearing until your doctor permits, even if it doesn't hurt.



# Exercising After Your Surgery

Exercising after surgery is important because:

## MUSCLE CONTRACTION

aids in movement of fluids.

## MOVEMENT OF FLUID

decreases pain.

## STRONG MUSCLES

help stabilize and protect injured body parts, improve function and minimize fatigue.

## MUSCLE CONTRACTION

prevents muscle atrophy (decrease in muscle size) which can result from inactivity.

**Your physical therapist will start these exercises with you as soon as possible after surgery.**

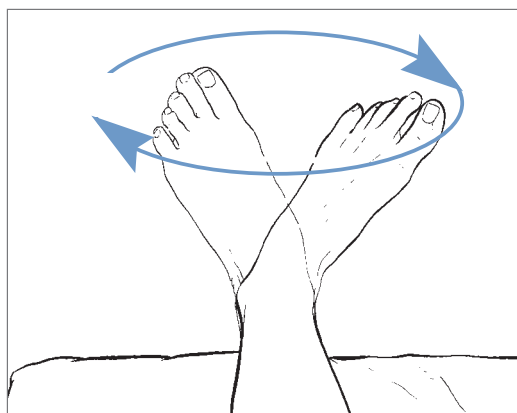
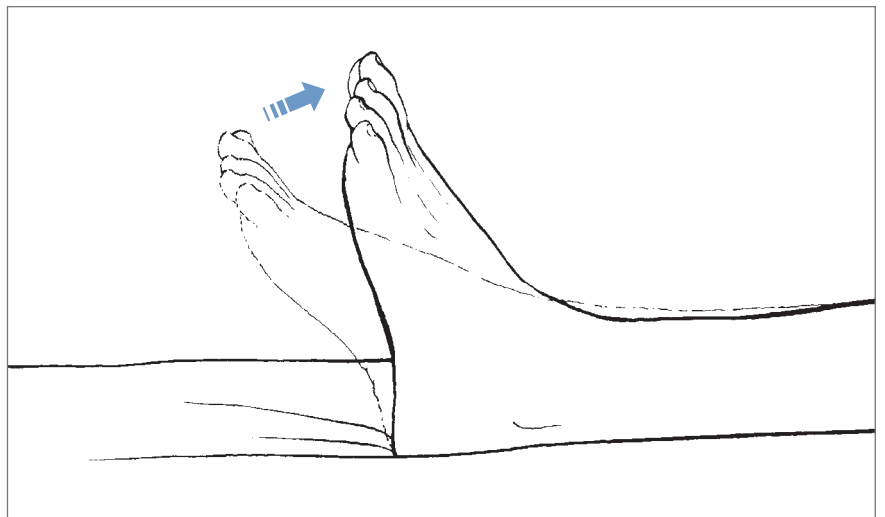
**You will also be expected to get up in a chair and walk to the bathroom with the help of the nursing or therapy staff while in the hospital.**

These exercises should be done on your own with both legs, 10 to 20 times every hour while you are awake. Do not hold your breath while doing the exercises. Remember to keep the kneecap up and toes pointed toward the ceiling.

Do the following exercises 10 to 20 times every hour while you are awake. Do not hold your breath while doing these exercises. Remember to keep your kneecap up and toes pointed toward the ceiling.

## ANKLE PUMPS AND CIRCLES

While sitting or lying, move your foot and toes up and down (like pumping a gas pedal). Relax and repeat.

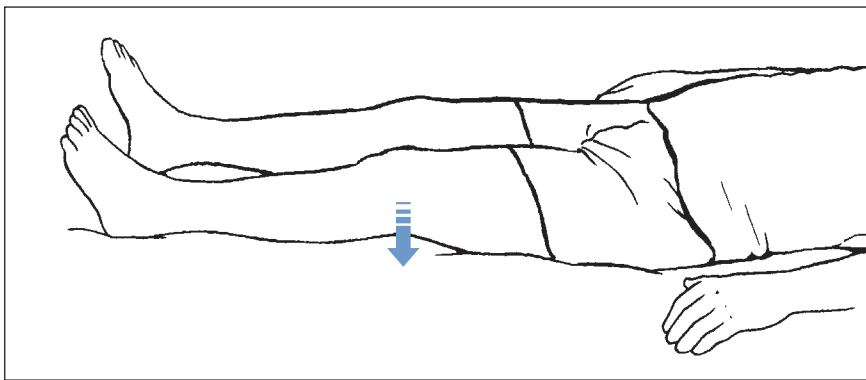
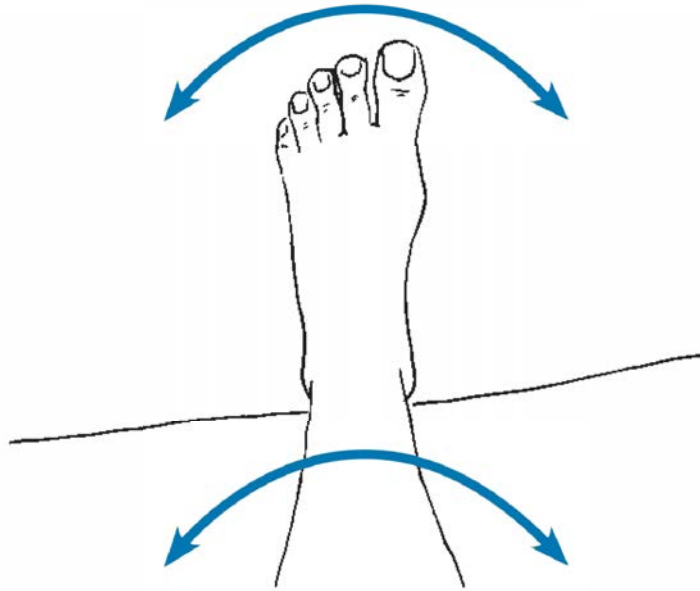


Move your foot in a gentle circle, moving at the ankle without lifting your heel. Relax, then repeat in the reverse direction.

These exercises aid fluid movement through your body tissues.

## LEG ROLLS

Keeping your **operated** knee straight, roll your entire leg in and out.

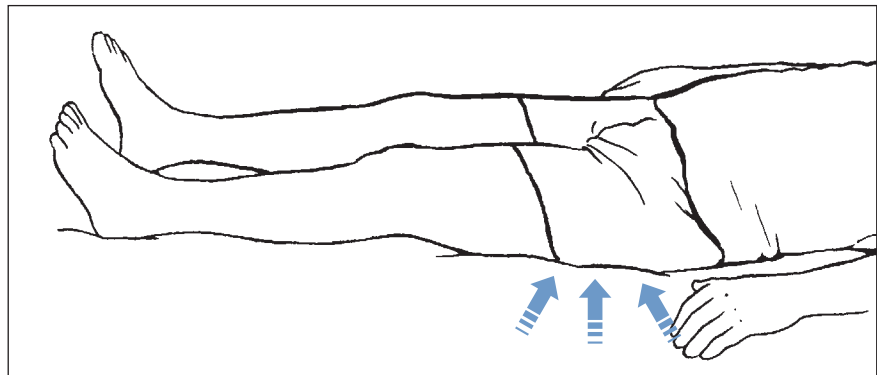


## QUAD SETS

While lying on your back with your legs out straight, push down with the knee on your operated leg and tighten your thigh muscles. Hold for a count of five. Relax and repeat. This exercise strengthens leg muscles to help regain function.

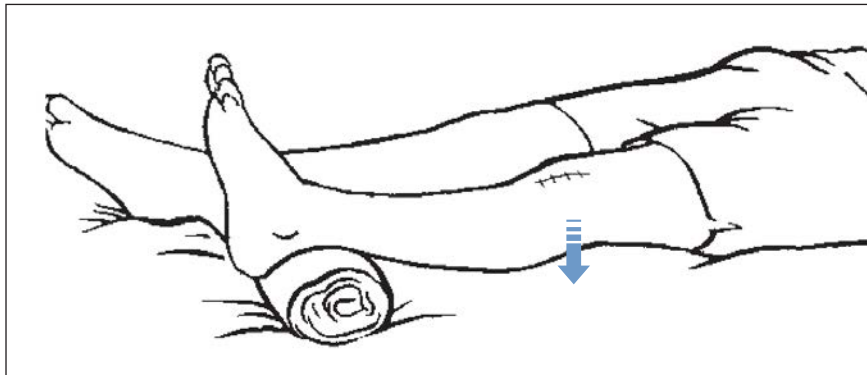
## GLUTEAL SETS

To retrain the muscles at the surgical site, squeeze your buttock muscles together. Hold for a count of five. Relax, then repeat.



You will also be taught strengthening and range-of-motion exercises while in the hospital.

You are to do each exercise 10 times, twice a day.

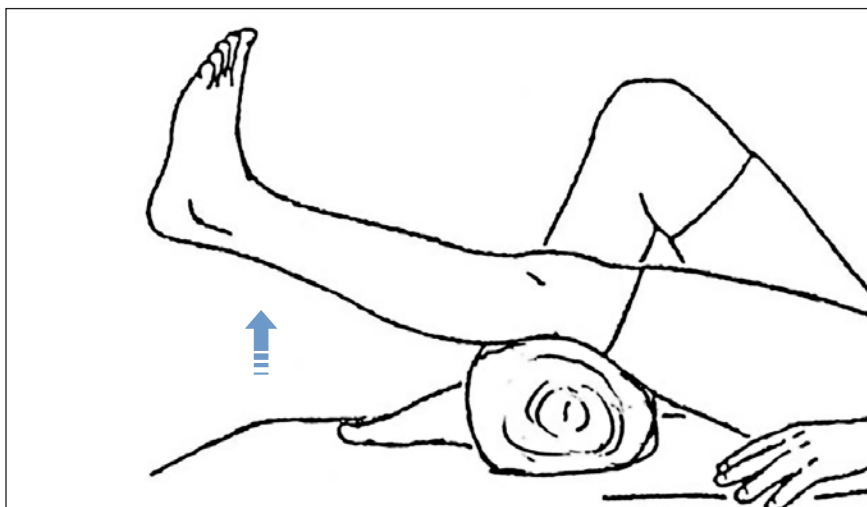
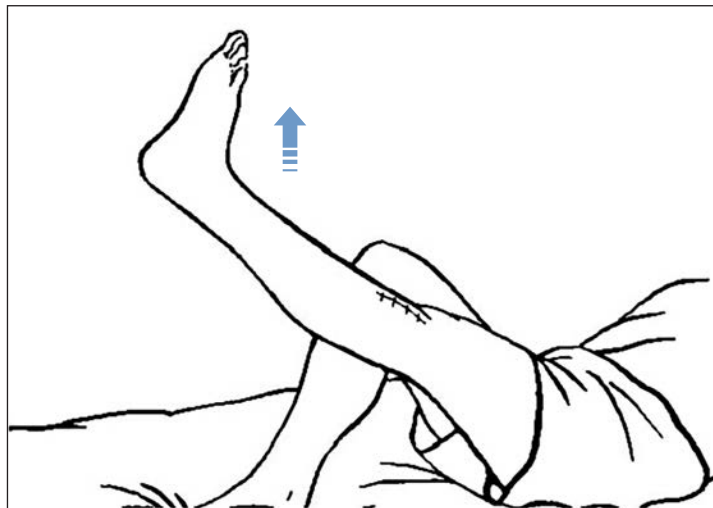


### QUAD SETS WITH A TOWEL ROLL

Place a small towel roll under the heel of your **operated** leg. Push down with your knee and tighten the muscle above the knee. Hold for a count of three to five. Relax for a count of five and repeat

### STRAIGHT LEG RAISES

Lie on your back. If able, bend the knee of your **non-operated** leg. Point your toes up to the ceiling, tighten your thigh, and slowly lift your **operated** leg straight up. Then lower slowly back to the bed. Allow leg muscles to relax. Repeat.

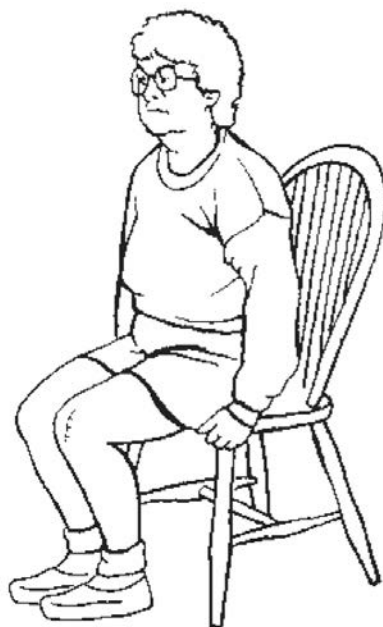
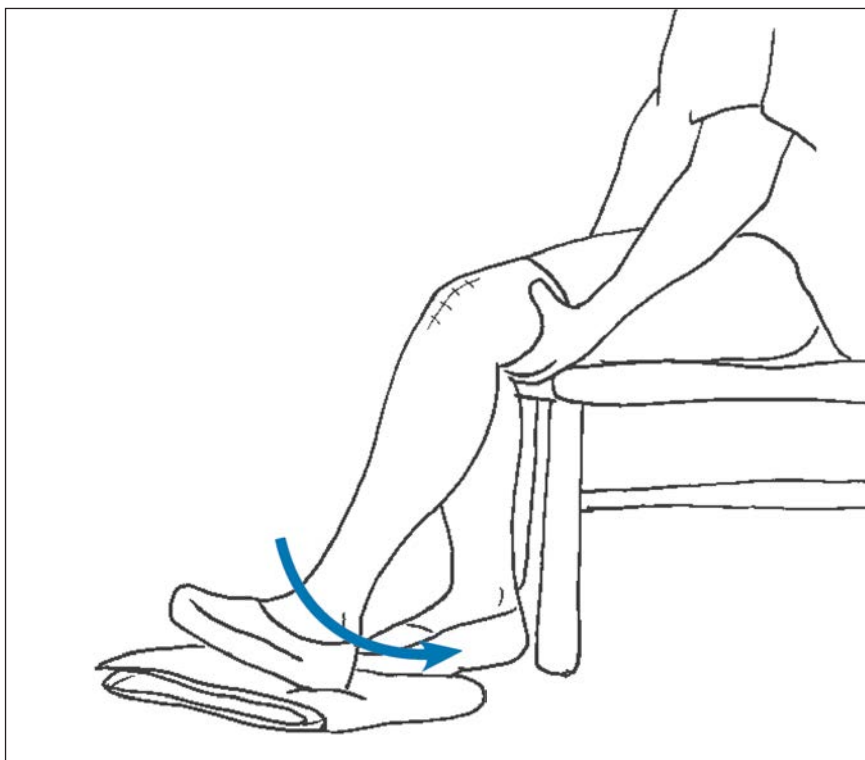


### SHORT ARC QUAD

Lie on your back with a firm blanket roll or bolster under your **operated** knee. Lift your heel up off the bed while keeping your knee on the blanket roll. Straighten your knee as far as you can. Concentrate on strongly contracting the muscles on top of your thigh (quads). Hold for a count of three to five, then slowly lower your heel back to the bed. Relax your muscles for a count of five. Repeat.

## ASSISTED KNEE FLEXION

Sit evenly on both hips and buttocks on the edge of the chair. Place a towel under your **operated** foot if on a wood/tile floor. You can use a plastic bag instead of a towel if on carpet. Keep your knee and your middle toes lined up. Use your hands to assist by lifting up your operated thigh. Slide your **operated** foot back toward the chair. Hold for a count of five. Relax and allow your **operated** foot to slide forward. Repeat.



## CHAIR SCOOT

To increase knee flexion, sit in a chair with your **operated** leg bent as far as you can tolerate. Slowly scoot forward in the chair, NOT moving your **operated-side** foot. Hold for 20-30 seconds, then slowly scoot back in the chair. Repeat 1-2 more times.



# Moving Safely After Surgery

Your therapist will request that a family member (or coach) be present for one training session prior to discharge from the hospital.

## How to Get In and Out of Bed

Follow your therapists' instructions for how to get out of bed. Initially, you may need someone to assist your surgical leg into and out of bed for you. This assistance is only temporary as you will be encouraged to move

the leg by itself once you have gained strength and have less pain.

The following pictures illustrate one way to get into and out of bed. Your therapist may suggest an alternative method based on your specific needs.



- 1 Use your elbows to come to a sitting position in your bed.
- 2 Slide your body forward toward the edge of your bed as you lower your legs out of bed.

- 3 Scoot to the edge of the bed, keeping your **operated** leg forward. Bend at the waist and push off the bed with both hands to stand up..

- 4 Place one hand at a time on the walker, keeping most of your weight on your **non-operated** leg.
- 5 Reverse these steps to get back into bed.

## How to Get On and Off the Toilet

You *may* need an elevated toilet seat with handrails, or a bedside commode. You will want to consult with your

physical or occupational therapist before obtaining the necessary items.



### Procedure:

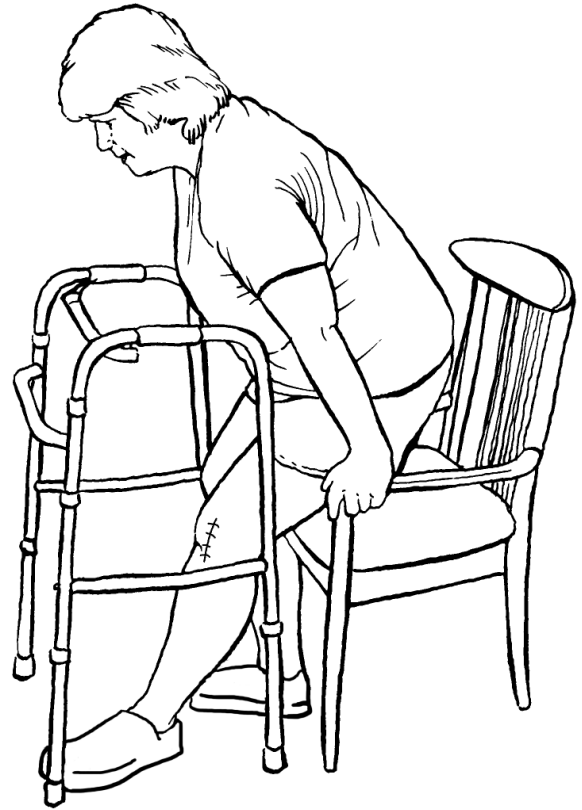
- 1 Back up until your legs are touching the toilet. Avoid twisting to look behind you.
- 2 For a short time you may need to position your **operated** leg slightly in front of you.
- 3 Slowly, reach back with one arm at a time and hold on to the toilet seat, railing or counter.
- 4 Slowly lower yourself onto the toilet seat, keeping your **operated** leg slightly in front of you.  
**Never use a towel bar, door handle, or toilet paper dispenser for support.**
- 5 To get up, reverse the procedure.

**If this procedure does not work for you, put one hand back (on the counter or toilet seat) and put your other hand on the middle of the walker with someone there to support the walker and keep it from tipping.**

## How to Use Your Walker

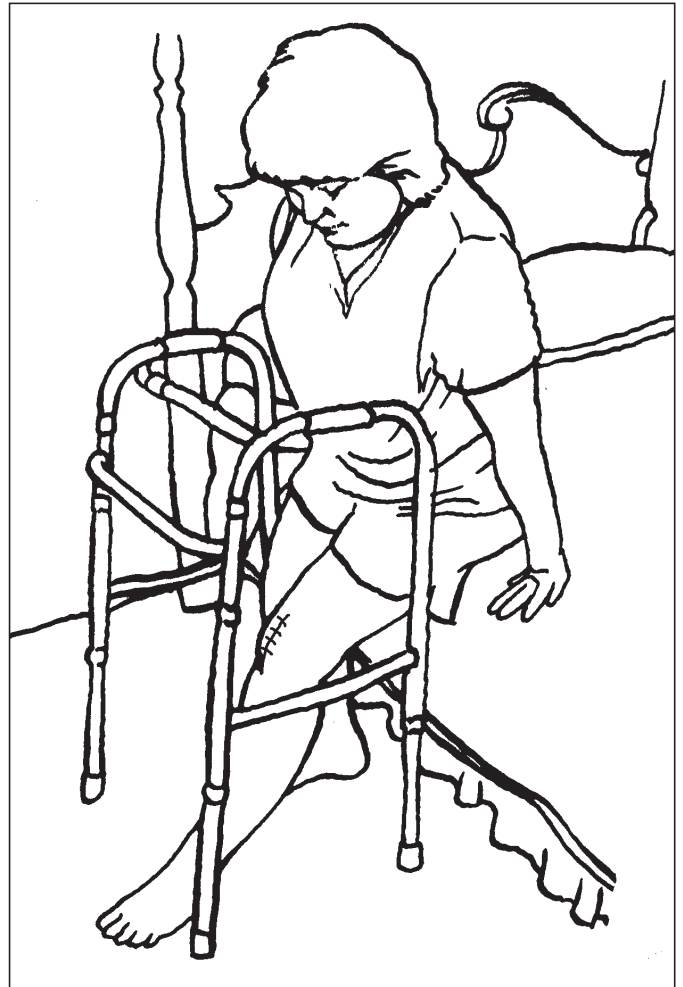
### STANDING - USING A WALKER

- 1 Move to the edge of the bed or chair. Have both feet on the floor.
- 2 Bend your **non-operated** leg back.
- 3 Slide your **operated** leg out in front of you.
- 4 Push from the arm rests or bed. Avoid bending your hip past 90 degrees as you stand.
- 5 Gain your balance **BEFORE** you reach for the walker. *Avoid pulling on the walker.*



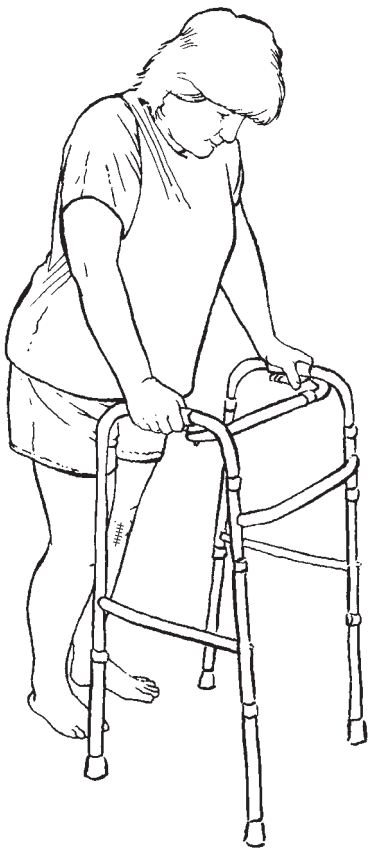
### SITTING - USING A WALKER

- 1 Turn and back up so your backside is toward the chair or bed. Do not pivot.
- 2 Back up until your legs are touching the chair or bed.
- 3 Reach back for chair armrests or the bed
- 4 Slowly lower yourself to the bed or chair, allowing your operated leg to bend as much as tolerated or slide it out in front of you

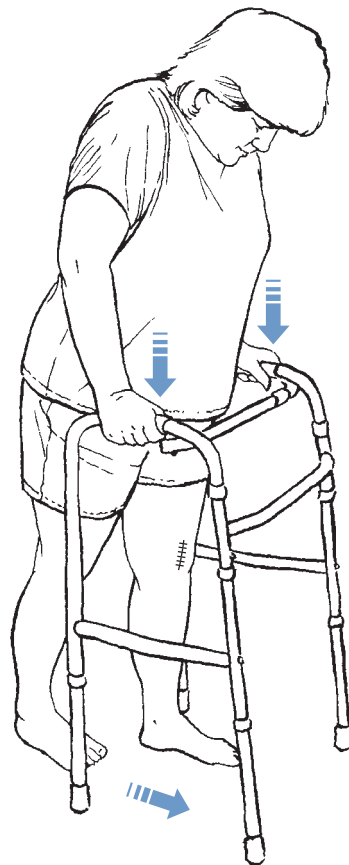


## USING A WALKER

Your nurses and therapists will start you off using a walker without wheels after surgery. You will progress to a walker with wheels as your weight bearing on your **operated** leg and balance improves.

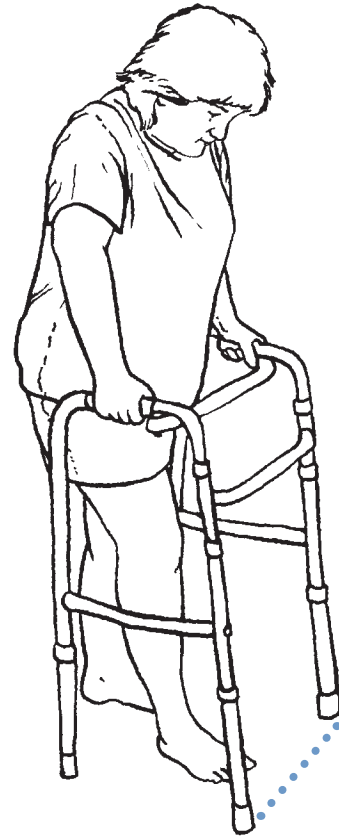


**1** Advance your walker about an arm's length in front of you, making sure all four walker legs are securely on the floor.



**2** Allow the knee to bend and step forward with your **operated** leg into middle of walker.

**3** Push down on the walker with your arms to avoid putting too much weight on your **operated** leg.



**4** Step forward with your **non-operated** leg.

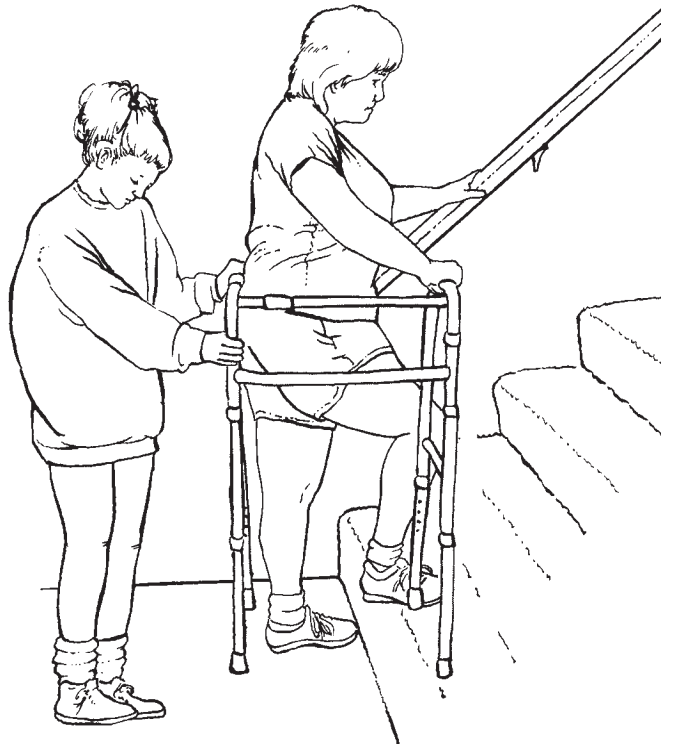
**5** Make sure your feet stay within the walker. Avoid stepping too close to the front of the walker as it may cause you to lose your balance.

## Going Up and Down Stairs With a Walker

There are no limitations to stair climbing unless instructed differently by your therapist. You must have someone with you to help. If there is no handrail, you may wish to have one put up. It is safer and easier to use the stairs with one.

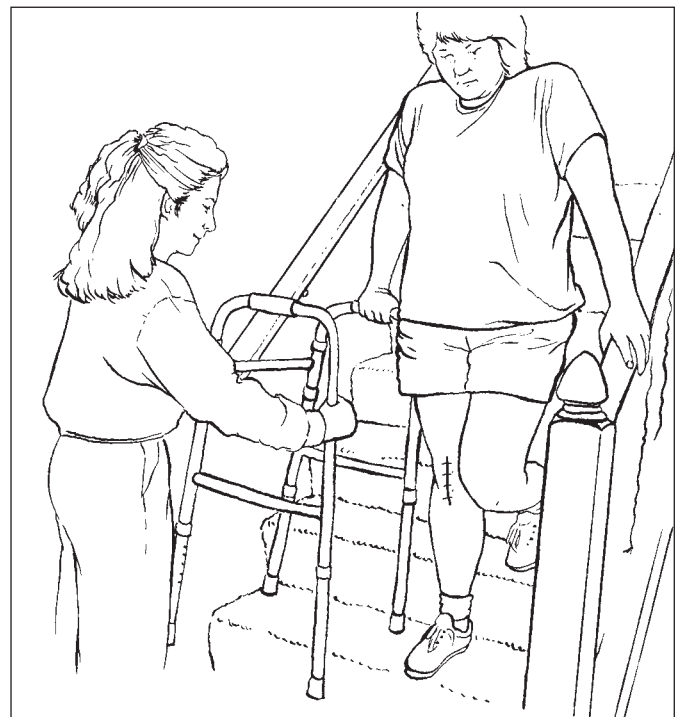
### GOING UP STAIRS

- 1 You should use both the handrail and the walker to climb stairs.
- 2 Turning the walker sideways, keep the open end of the walker facing you, and keep the walker parallel to the floor.
- 3 Put the front set of walker legs on the step you are going up.
- 4 Have your assistant stand behind you to stabilize the walker with both hands.
- 5 Step up with your **non-operated** leg first.
- 6 Follow with your **operated** leg, bringing it up to the same step.
- 7 Bring your walker up to the next step and continue up until you reach the landing.



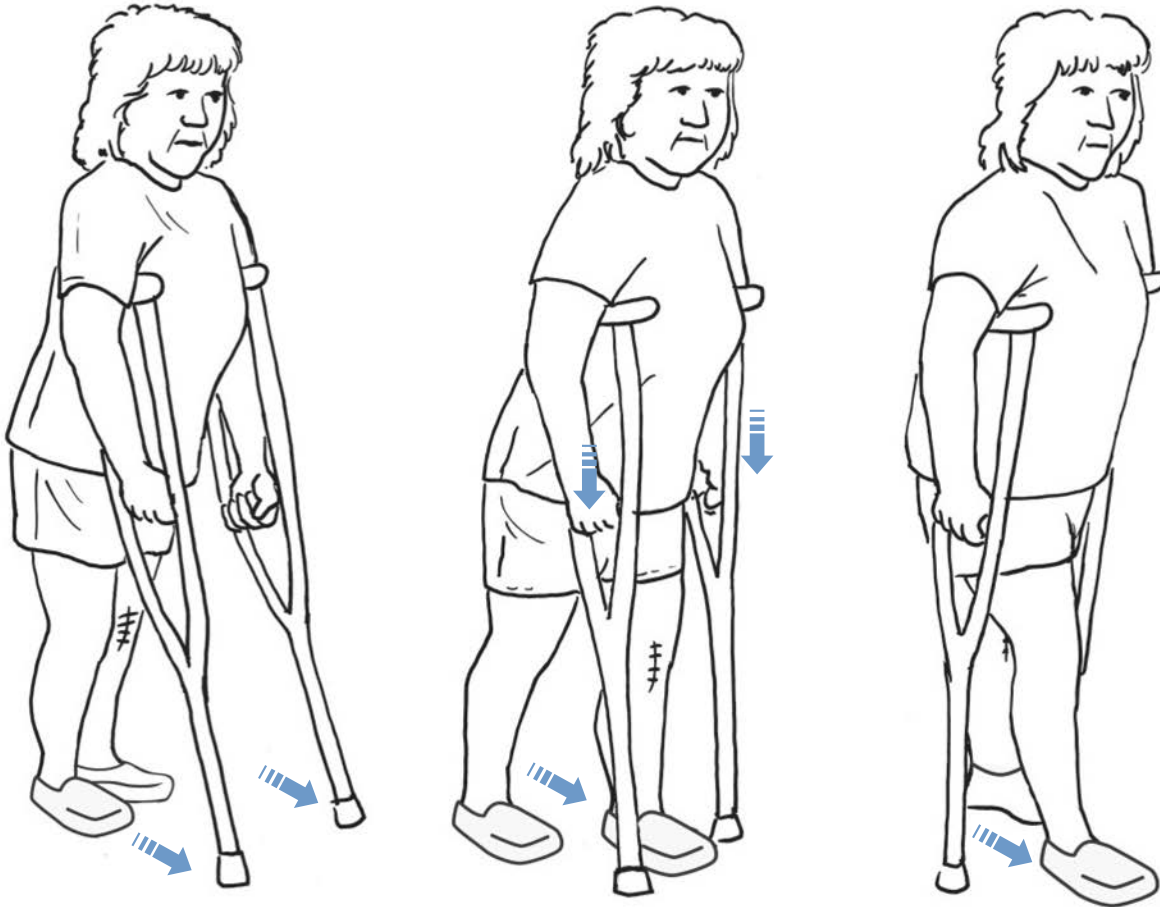
### GOING DOWN STAIRS

- 1 Turn the walker sideways. Put the back two legs of the walker down a step and keep it parallel to the floor.
- 2 Have your assistant stand in front of you to stabilize the walker with both hands.
- 3 Step down with your **operated** leg first.
- 4 Follow with your **non-operated** leg, bringing it down to the same step.
- 5 Move the walker down one step and continue down the stairs.



## How to Use Crutches (3-Point Gait)

You should not progress to crutches until your therapist assesses you.



- 1 Advance your crutches about a foot in front of you.
- 2 Step forward with your **operated** leg first.

- 3 Push down on the hand grips of your crutches to avoid putting too much weight on your **operated** leg. Do not put your weight through your armpits.

- 4 Step through the crutches with your **non-operated** leg.
- 5 Maintain a "tripod position" with your crutches slightly in front of your feet. Don't line up your feet exactly with the crutches, since this will throw you off balance.



## Going Up and Down Stairs with Crutches

### GOING UP STAIRS USING BOTH CRUTCHES AND NO HANDRAIL

- 1 Have your assistant stand behind you.
- 2 Keep the crutches under your arms, pushing down on the hand grips.
- 3 Step up with your **non-operated** leg.
- 4 Follow with your **operated** leg.
- 5 Lift both crutches up to the same step.
- 6 Continue up until you reach the landing.

Our therapists recommend you use a handrail on one side.



### GOING UP STAIRS USING THE HANDRAIL AND CRUTCHES

- 1 You should use both the handrail and the crutches to climb stairs.
- 2 Have your assistant stand behind you to stabilize you.
- 3 Put both crutches together and place them under one arm, holding onto the hand grips.
- 4 With your free hand on the railing, push down on the hand grips and step up with your **non-operated** leg.
- 5 Follow with the **operated** leg, bringing it up to the same step.
- 6 Lift your crutches up to the same step.
- 7 Continue up until you reach the landing.



## GOING DOWN STAIRS USING BOTH CRUTCHES

- 1 Have your assistant stand in front of you to help stabilize you.
- 2 Place the crutches down one step.
- 3 Step down with your **operated** leg.
- 4 Follow with your **non-operated** leg, bringing it down the same step.
- 5 If there is no railing, and you are unsteady using both crutches, you may use the arm of another person for support.

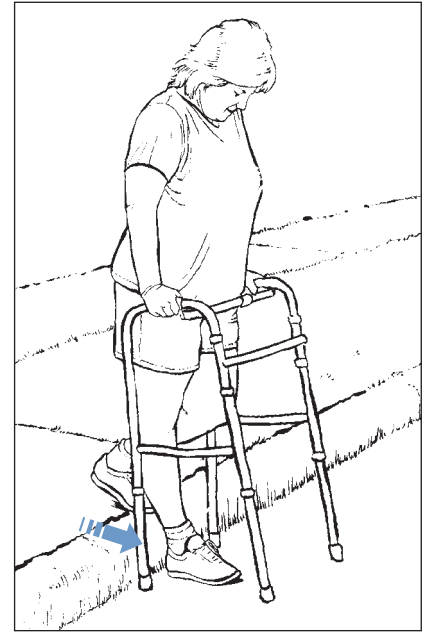
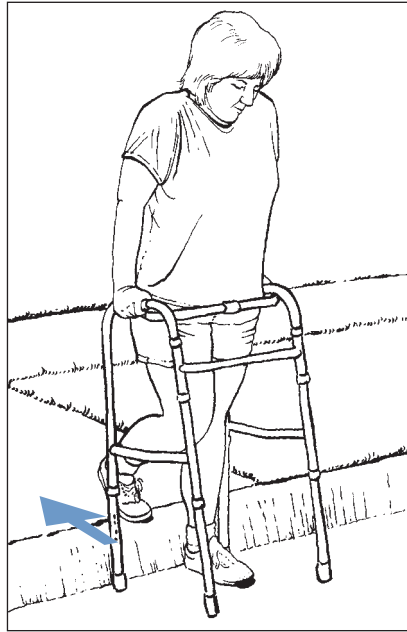


## GOING DOWN STAIRS USING ONE HANDRAIL AND CRUTCHES

- 1 Hold on to the handrail.
- 2 Put both crutches under the opposite arm.
- 3 Follow the same procedure as going down stairs using both crutches.



## How to Go Up and Down a Curb Step



### GOING UP THE CURB STEP

#### Front Approach:

- 1 Move walker as close as possible to the curb.
- 2 Place all four legs of the walker on the ground above the curb.
- 3 Lean on your walker, stepping up with your **non-operated** leg.
- 4 Follow with your **operated** leg.

*Procedure is the same when using crutches.*

### GOING UP THE CURB STEP

#### Backward Approach:

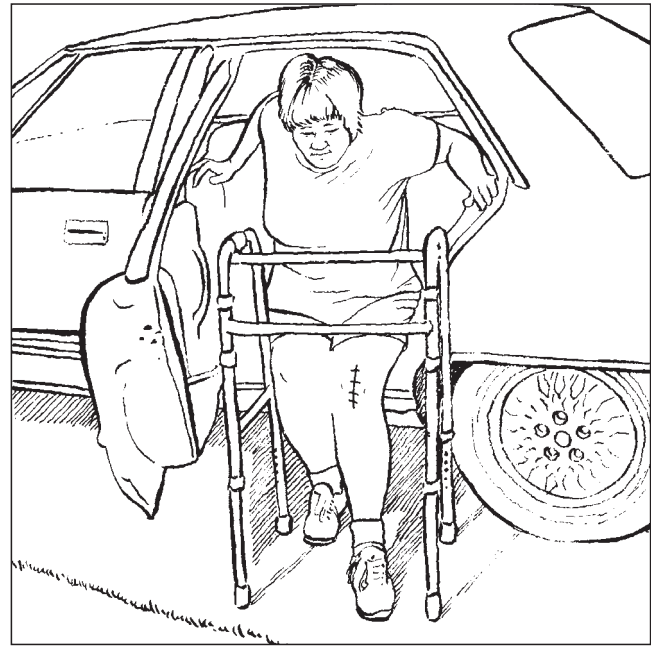
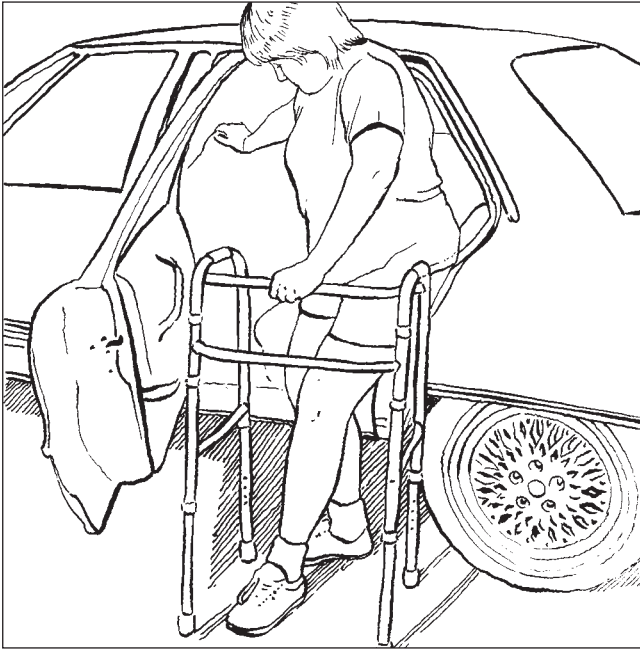
- 1 Back up to the curb. Keep the walker as close to your body as possible.
- 2 Hold on to the walker and lean forward on your arms.
- 3 Step up onto the curb with your **non-operated** leg.
- 4 Follow with your **operated** leg.
- 5 Take one more step back with each foot.
- 6 Lift the walker up and place it firmly on the ground in front of you.

### GOING DOWN THE CURB STEP

- 1 Go to the edge of the curb with the walker.
- 2 Lower the walker down onto the ground.
- 3 Step down with your **operated** leg first.
- 4 Follow with your **non-operated** leg.

*Procedure is the same when using crutches.*

## How to Get In and Out of a Car



- 1 With the door open, back up to the car with the walker in front of you. Step backward until your legs touch the car.
- 2 Place your hands on the car frame, seat or dashboard. **DO NOT** use the door for support, because it moves!
- 3 Keeping your **operated** leg in front of you, lower yourself to the seat.

- 4 Bring your legs into the car as follows:  
*If you are in the back seat, scoot back into the car. Sit sideways across the entire back seat, with your legs supported on the seat.*
- 5 *If you are in the front seat, slowly bring one leg in as you start to ease yourself around. Then bring your other leg in so you are facing forward.*

### Helpful Hints

- Your physical therapist will help you determine the best method for getting in and out of your car.
- The back seat of a four-door car is generally the easiest to get in and out of.
- It is recommended that you travel home in the back seat of a four-door car, sport utility vehicle or a van, so you can keep your operated leg elevated.
- If you must sit in the front seat, slide the seat all the way back before getting in or out of the car.
- If you have difficulty scooting at first, or have cloth seats, a plastic trash bag placed on the seat will aid in transferring in and out of the car the first few times.
- When traveling in the back seat, try to enter the same side of the car as your operated leg. For example, after left knee surgery, enter from the driver's side. After right knee surgery, enter from the passenger's side.

# Moving Safely After Bilateral Total Knee Replacement Surgery

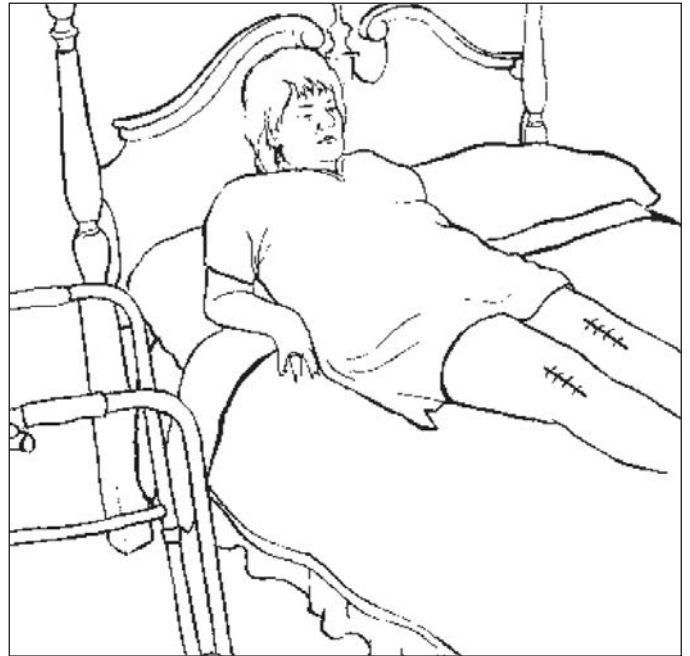
Preparation for having bilateral knee replacement is very important due to the increased demands on your arms to moving yourself around.

The exercises starting on pages 9-13 are very important to practice before surgery to facilitate your recovery.

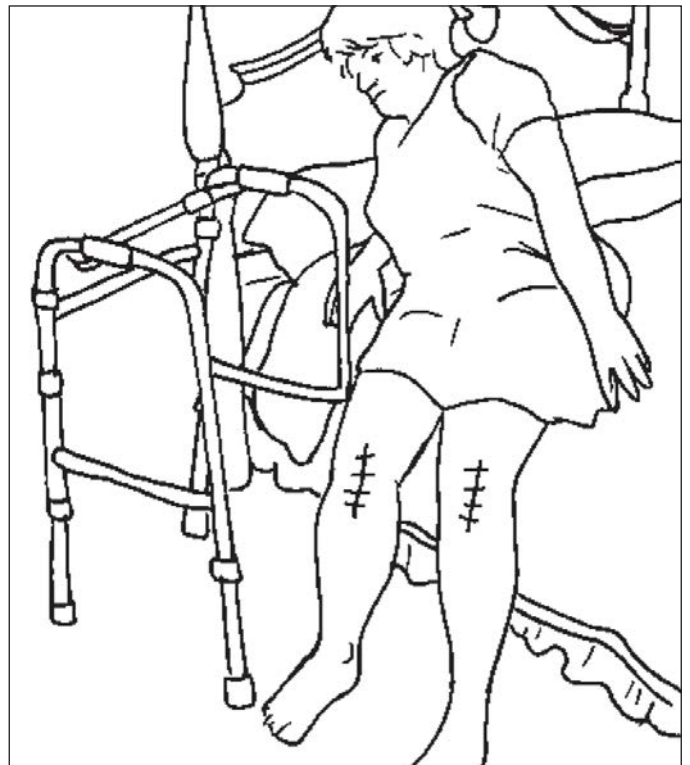
## How to Get In and Out of Bed

Remember to follow all your doctor's and therapists' instructions for how to get out of bed.

- 1 Use your elbows to come to a sitting position in your bed.



- 2 Slide your body forward toward the edge of your bed as you lower your legs out of bed.

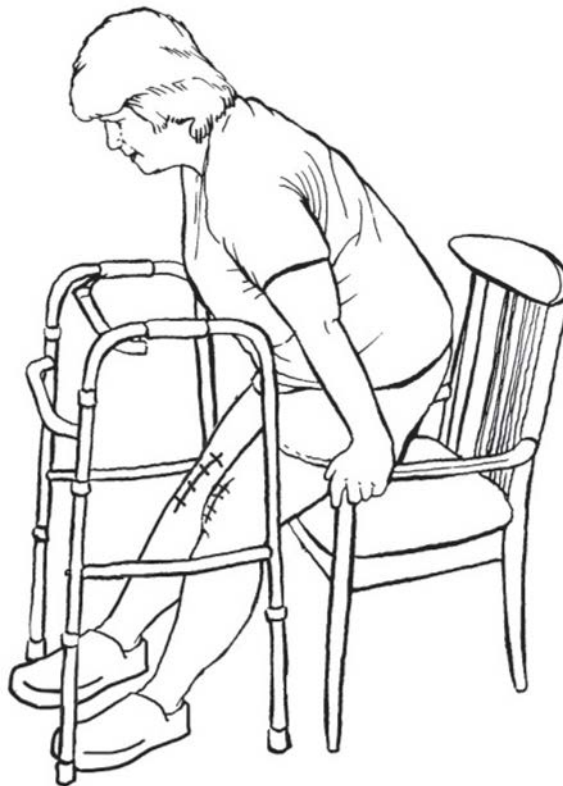




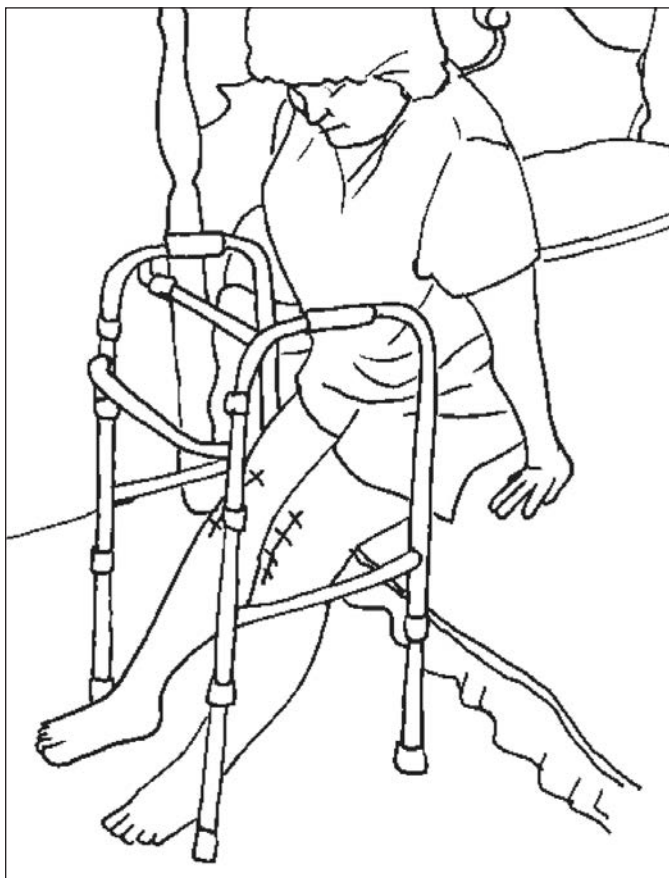
# Bilateral Knee Replacements

## STANDING – USING A WALKER

- 1 Scoot to the edge of the chair or bed.
- 2 Try to bend your knees to bring your feet back as much as possible.
- 3 Place your hands on the bed or chair.
- 4 Lean your head and shoulders forward by bending your waist (“nose over your toes”) and push down with your arms on the bed or chair.
- 5 As you lift your bottom off the chair/bed, walk your feet back toward the chair/bed staying in the bent position. Do this until your feet are underneath you supporting your body weight.
- 6 Reach up one hand at a time for the walker.
- 7 Use your arms to stand with upright posture
- 8 To sit down, reverse this procedure.



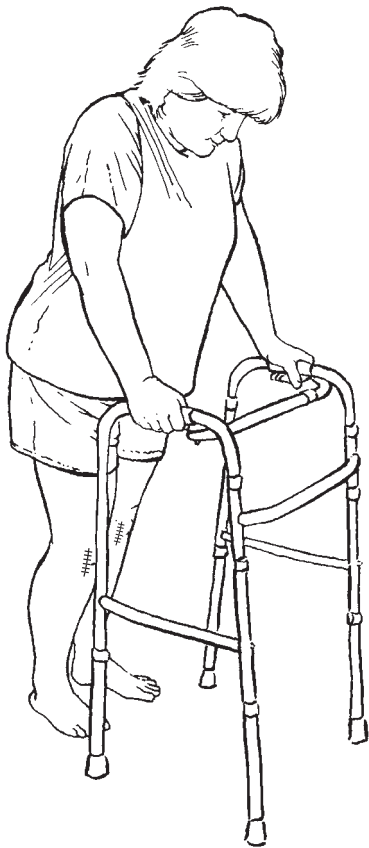
**When having bilateral knee replacements, you will almost always need a toilet riser with arm rests.**



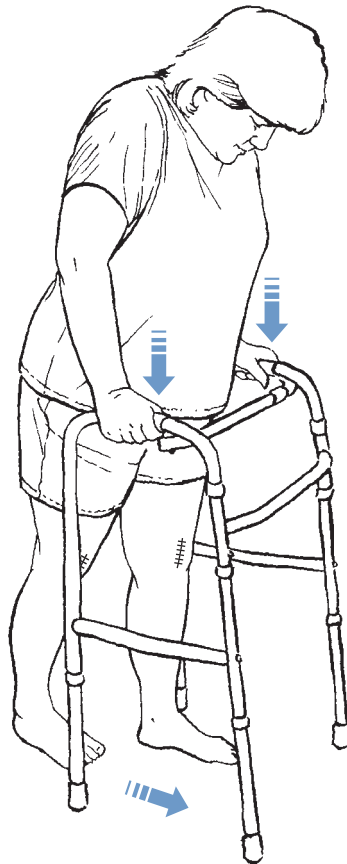


# Bilateral Knee Replacements

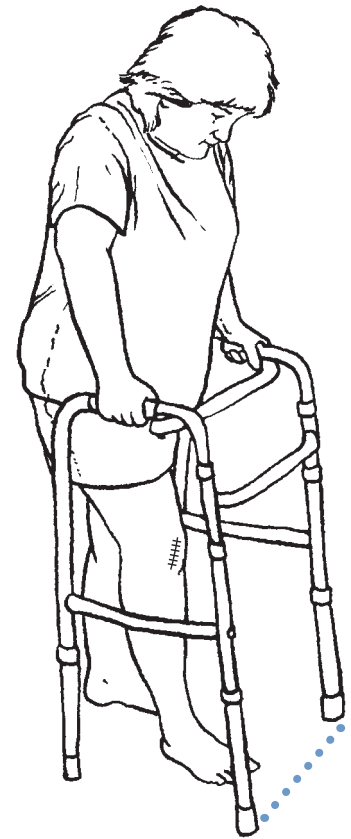
## USING A WALKER



1 Advance your walker so that back legs of walker are in front of your feet, making sure all four walker legs are securely on the floor.



2 Bend your operated knee and step forward with your more painful leg into middle of the walker.  
3 Push down on the walker with your arms to assist your **operated** leg.

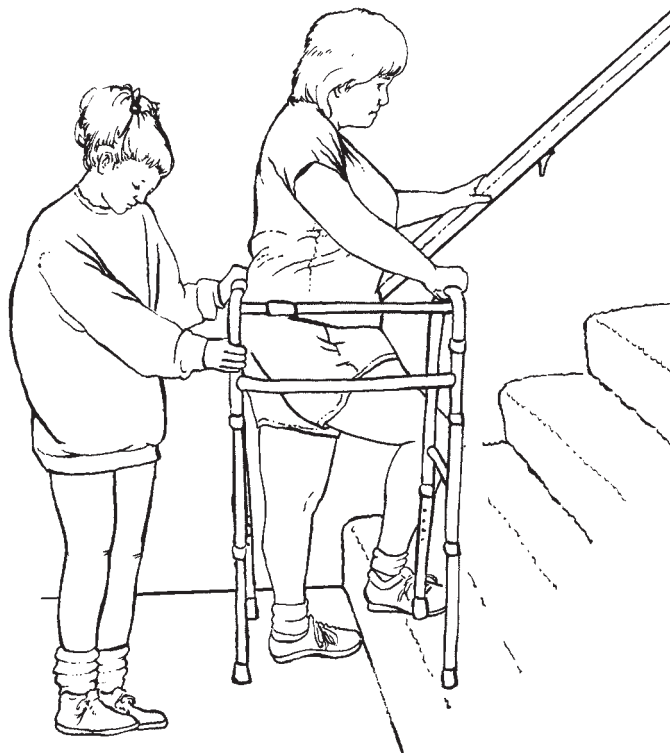


4 Step forward with your less painful leg.  
5 Make sure your feet stay within the walker. Avoid stepping too close to the front of the walker.

# Bilateral Knee Replacements

## GOING UP STAIRS

- 1 You should use both the handrail and the walker to climb stairs.
- 2 Turning the walker sideways, keep the open end of the walker facing you, and keep the walker parallel to the floor.
- 3 Put the front set of walker legs on the step you are going up.
- 4 Have your assistant stand behind you to stabilize the walker with both hands.
- 5 Step up with your **less painful** leg first.
- 6 Follow with your **more painful** leg, bringing it up to the same step.
- 7 Bring your walker up to the next step and continue up until you reach the landing.

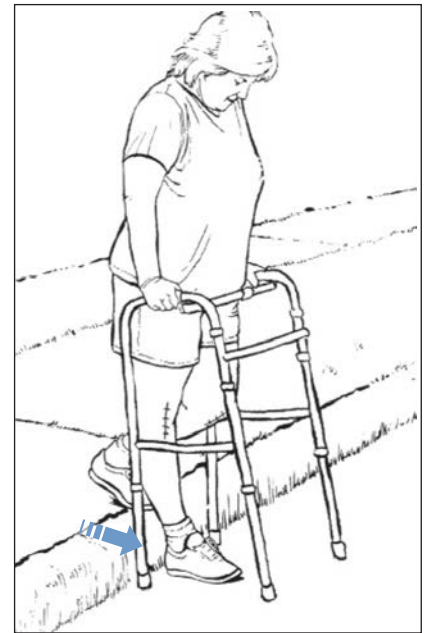


## GOING DOWN STAIRS

- 1 Turn the walker sideways. Put the back two legs of the walker down a step and keep it parallel to the floor.
- 2 Have your assistant stand in front of you to stabilize the walker with both hands.
- 3 Step down with your **more painful** leg first.
- 4 Follow with your **less painful** leg, bringing it down to the same step.
- 5 Move the walker down one step and continue down the stairs.
- 6 If there is no railing, use the arm of another person for support.



# Bilateral Knee Replacements



## GOING UP THE CURB STEP

### Front Approach:

- 1 Move walker as close as possible to the curb.
- 2 Place all four legs of the walker on the ground above the curb.
- 3 Lean on your walker, stepping up with your **less painful** leg.
- 4 Follow with your other leg.

*Procedure is the same when using crutches.*

## GOING UP THE CURB STEP

### Backward Approach:

- 1 Back up to the curb. Keep the walker as close to your body as possible.
- 2 Hold onto the walker and lean forward on your arms.
- 3 Step up on to the curb with your **less painful** leg.
- 4 Follow with your **more painful** leg.
- 5 Take one more step back with each foot.
- 6 Lift the walker up and place it firmly on the ground in front of you.

## GOING DOWN THE CURB STEP

- 1 Go to the edge of the curb with the walker.
- 2 Lower the walker down onto the ground.
- 3 Step down with your **more painful** leg first.
- 4 Follow with your **less painful** leg.

*Procedure is the same when using crutches.*

# After Surgery – What to Expect at Discharge

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## Nursing Instructions from the Hospital

At the time of discharge, a member of the nursing staff will review important instructions from your doctor including:

- Care of your incision.
- Pain management by medication, ice, and proper resting positions.
- Blood thinner medication if prescribed by your surgeon.
- Your approximate discharge time will be communicated to you by our care team. Discharge date and time are determined by the completion of your therapies and medical clearance.
- Our goal is to get you home as soon as possible. Please have your ride (family member or friend) available to pick you up on the day of discharge and no later.

## Discharge Plan

In most cases you will return to your own home after your hospital stay and continue further therapy.

Your final discharge plan and follow-up therapy will be discussed with your doctor while in the hospital. Hospital personnel will help you make arrangements as needed.

## Recovering at Home

If you are going directly home after the hospital, it will be important to have someone available to help you for 1-2 weeks. You will need assistance with meal preparation and your personal care.

You should continue doing the exercises you already know. As you progress, new exercises will be added by the physical therapist.

The goal is to maintain and increase activity, increase your ability to walk farther and better care for yourself. Your family and friends may be called upon to assist you with these home activities. Foremost is to make your home safe so you can go about your activities without risk of injury.



# Your First Few Weeks at Home

## The First Week

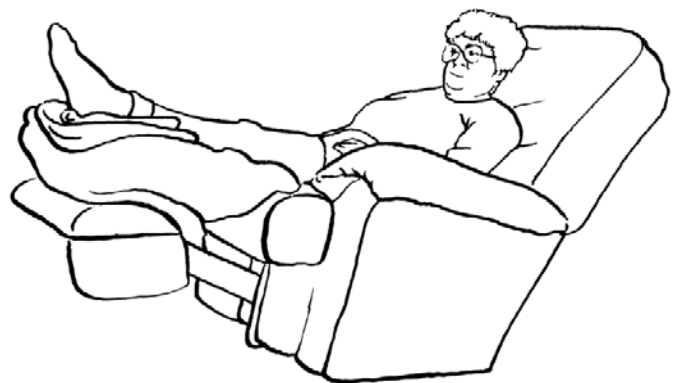
Your incision will be closed in one of several ways – sutures, which dissolve, or staples, which are taken out after 5-10 days. The incision is waterproof at discharge. It is safe to wash around the incision, unless there is some drainage or special precautions are to be taken.

You will most likely be uncomfortable for a short time and may require pain medication.

We discourage the use of sleeping pills which can make you unstable and tipsy, particularly if you have to get up at night for any reason.

You will start formal outpatient physical therapy soon after your discharge from the hospital.

You probably will need a nap in the afternoon. You should rest with your feet elevated. To help control swelling and pain, keep your **operated** leg straight and elevated with pillows under your leg from your thigh to your foot (see page 43 for specific instructions).



## Warning Signs

which require a call to the physician's office include:

- Severe and rapidly increasing pain, chills or fever (over 100 degrees).
- Drainage from the incision.
- A marked change in redness or swelling of the incision area.
- Calf pain, swelling or hot feeling in your leg.
- Any difficulty breathing, or pain in your side, back or rib area when breathing may also require a call to 911.

## Second Week

You should be reasonably comfortable and independent. Normal follow-up in the orthopaedic surgeon's office occurs approximately 2 weeks from the date of surgery. A follow-up x-ray may be taken to establish the baseline.

## Therapy after Discharge: What to Expect

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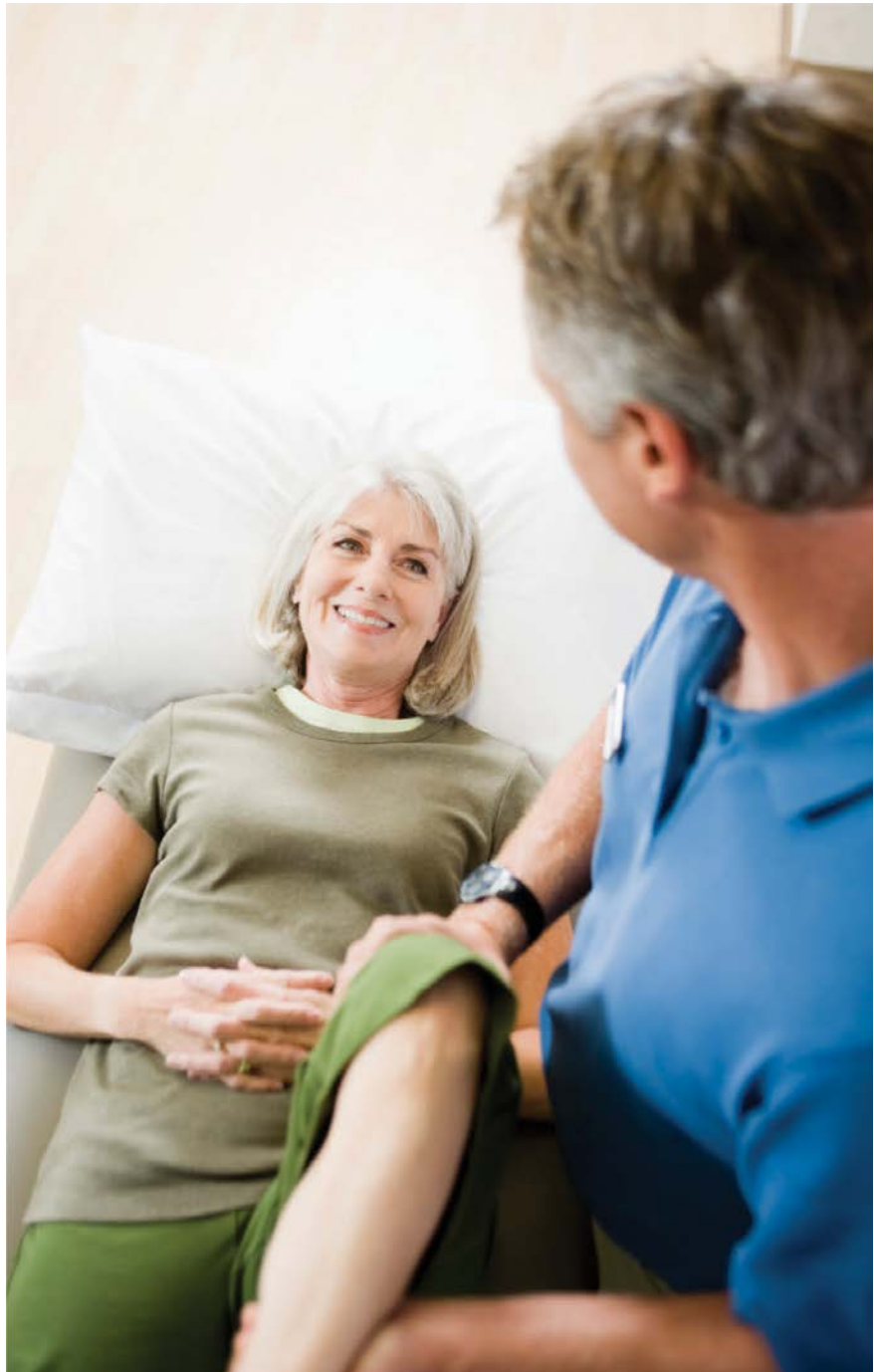
Your surgeon, in conjunction with the physical therapy team, has designed a treatment plan for you. The goal is to maximize your potential for recovery.

A physical therapist may come to your home or you may go to outpatient therapy for an evaluation.

The therapist will develop a plan to progress you through the rehabilitation process which will include:

- pain and swelling control
- progressing your exercise program
- improving your functional abilities

The frequency and duration of your physical therapy will depend upon your abilities and how quickly you achieve your goals.





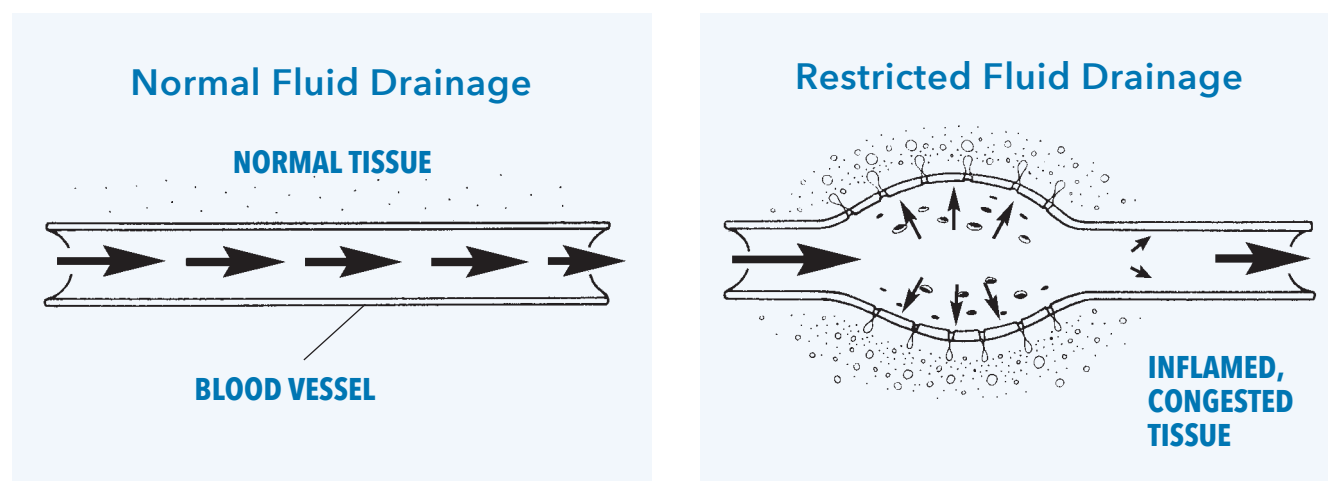
# The Healing Process

## Inflammation and Swelling After Surgery

Redness, increased heat and swelling all occur in the initial healing process. Inflammation (swelling) is necessary, and is due to an accumulation of special cells that are important for effective healing. This special fluid aids in blood clotting, growth of tissue such as skin, blood vessels and nervous tissue, and in repairing the injured area.

The healing process is similar to a factory that takes in raw materials to make a product and eliminates waste byproducts. When the many phases of production move smoothly and consistently, the process is an efficient one. The body performs in much the same manner, and relies on a consistent flow of nutrients for healing to occur (*see below left*).

The time for healing varies depending on the type of tissue involved. Tendons and ligaments heal much more slowly than skin and muscle. Healing relies on getting nutrients in and removing waste. Slowed drainage or trapped fluid (called "stasis") slows healing and decreases the chance for a return to complete function later (*see below right*).



## Ways To Improve Fluid Drainage and Healing

Proper drainage helps the blood and lymph circulation work more effectively and improves healing. The best ways to minimize trapped fluid are through muscle contraction, movement, cold therapy, and appropriate rest. The following is an explanation of each.

### Muscle Contraction

Throughout this booklet, you can see the importance of contracting muscles, from ankle pumps to isometric contractions of the thigh muscles. These are exercises that maintain strength and help increase fluid movement and maintain healthy tissue.

### Movement

After injury, movement is regained as the amount of swelling in the joints and tissues is reduced. In the exercise instruction portion of this booklet, you can see the exercises you should do in order to enable appropriate movement in the injured area.

## The Role Of Cold Therapy

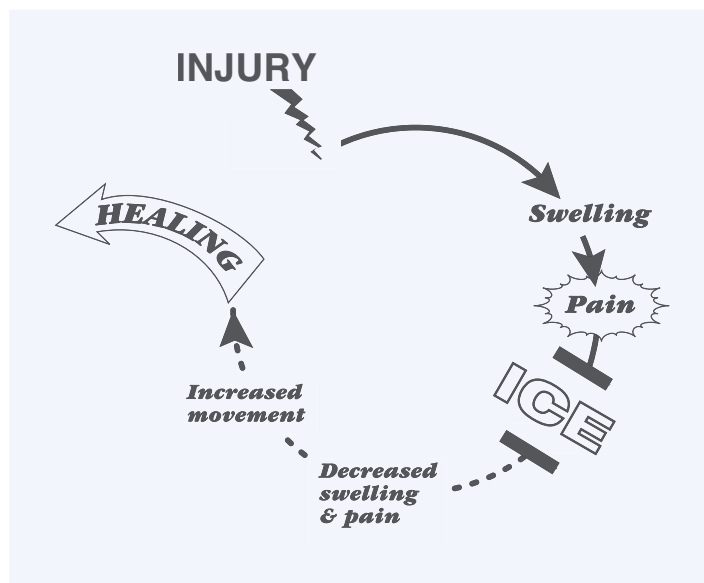
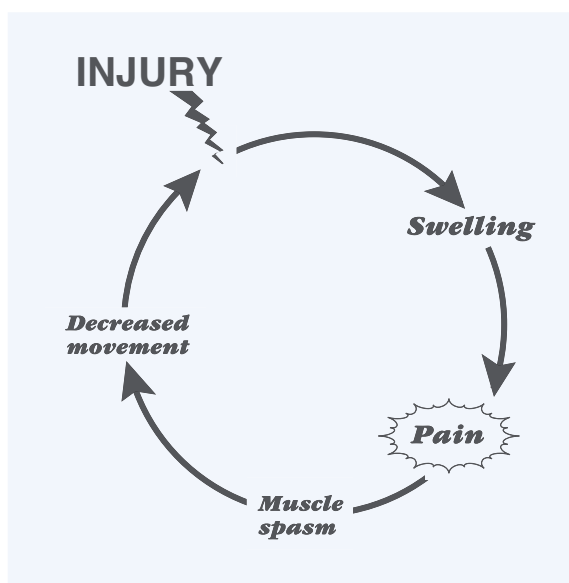
Using ice prior to exercise will temporarily desensitize the area, permitting easier motion. The application of ice can be helpful in the initial period after surgery because:

- ice decreases pain by reducing nerve activity in the injured area.

- ice decreases muscle spasm by decreasing sensitivity (pain).
- ice permits pain-free motion that helps decrease swelling.

The drawing to the left shows the pain cycle. Swelling after the injury causes pain, resulting in muscle spasm and a decrease in movement.

As shown below, ice interrupts the cycle, decreasing swelling, muscle spasms and pain, and increasing your ability to move more easily.



**Do NOT use heat until instructed by your physician.**

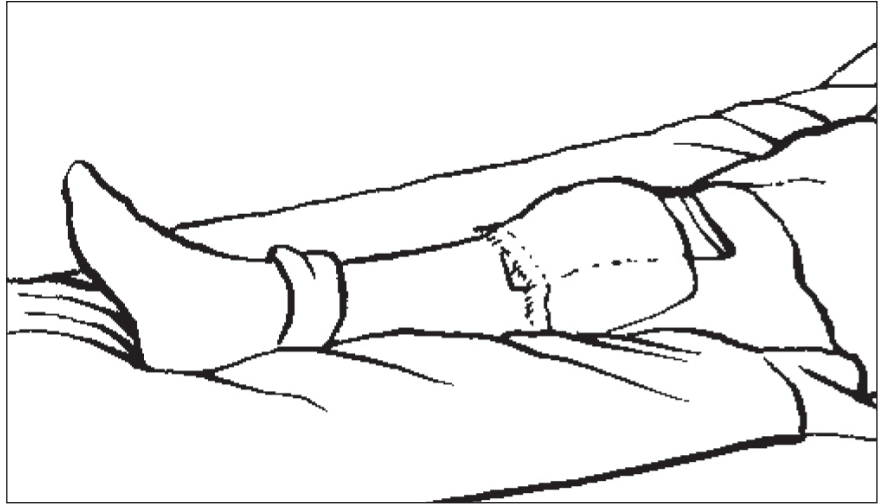
Remember, as you ice, the injured area needs to be resting comfortably so you can maintain this position for at least 20 minutes. It is recommended that you ice for 20 minutes at a time, as frequently as possible, but wait at least 30 minutes between each application.

## Techniques For Ice Application

### ICE PACK/BAG

- 1 Place a commercially available gel pack flat in the freezer. Most orthopaedic supply stores carry them.  
You may use a reclosable "zipper" bag and fill with crushed ice or a gel ice pack.
- 2 Have your leg in a supported position with your knee straight.

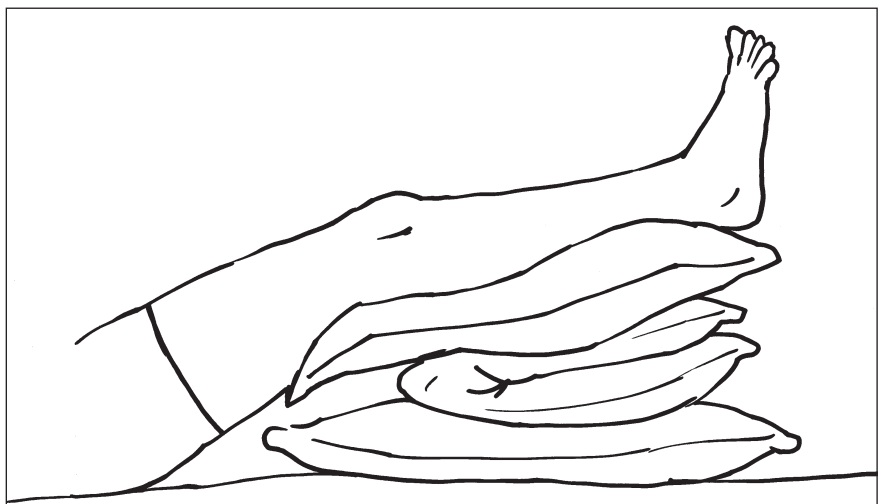
*NOTE: DO NOT place ice pack or bag directly on your skin. Place a clean towel or pillowcase in between.*



### CONTROL OF SWELLING

Decreasing swelling will reduce pain and facilitate the healing process.

- 1 Lay on your bed with one pillow under your head.
- 2 Place a pillow lengthwise from your buttocks toward your knee. Place another pillow lengthwise from mid-thigh toward your calf. Fold the third pillow and sandwich it between the other two pillows so that your ankle is above your knee and your knee is above your heart.



*Do this at least two to three times a day for at least 45 minutes.*



## Appropriate Rest

Lastly, healing and fluid drainage are improved by appropriate rest. Overuse or under-use of the injured tissues can extend the inflammation process through re-injury. It is important to find a balance of enough rest and enough exercise. Your rehabilitation team will help you with this.

You should try to rest at least *two - three times each day for at least 45 minutes*, with your operated leg in the most comfortable position. Make sure you follow the total knee precautions taught to you by your therapist. As you improve, you should progress toward shorter, more frequent periods of rest.

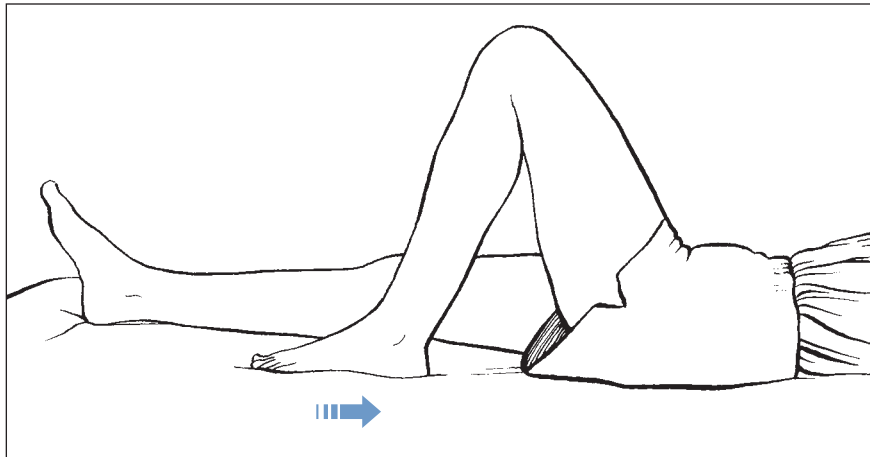
**You should get up and walk around after rest period to relieve stiffness and increase endurance.**

## Exercises Once You Get Home

These exercises must be done daily as prescribed. You should not take a day off in the initial period of rehabilitation.

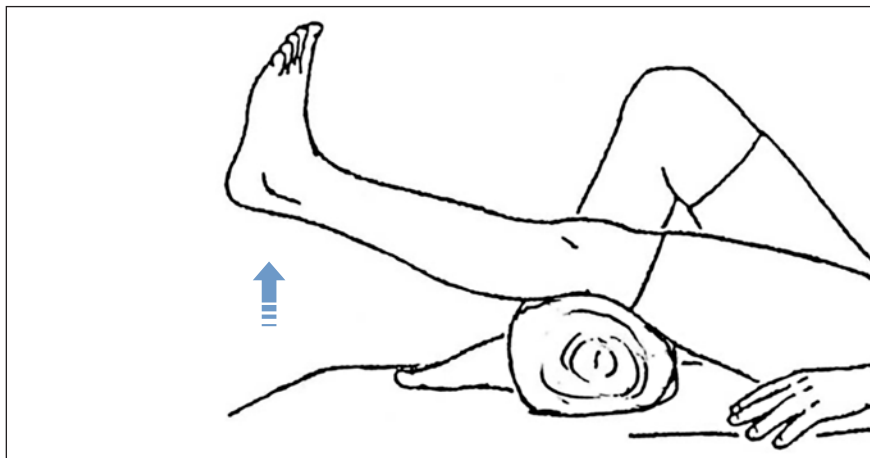
Your knee may become stiff and you can lose some of the strength and movement you gained in the hospital if you do not do your exercises.

*If you have any trouble or severe pain with any of these exercises, please contact your therapist.*



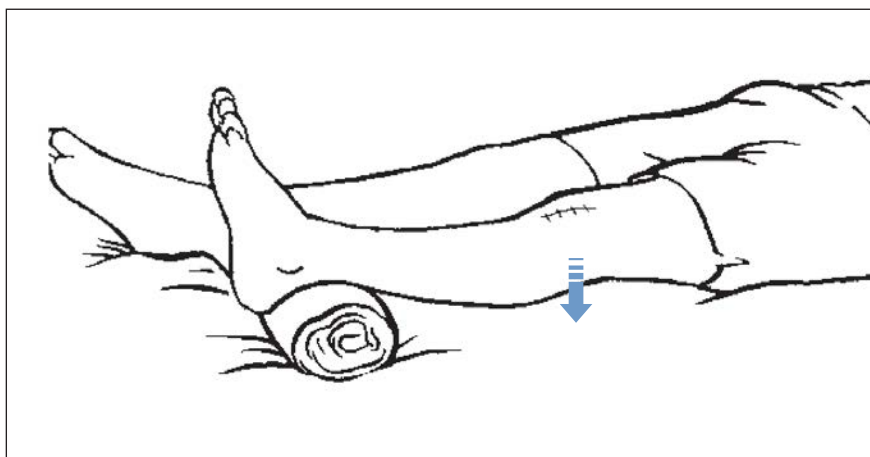
### HEEL SLIDES

Lie on your back. Slide the heel of your **operated** leg toward your buttocks, bending your knee and hip. Use a smooth motion, do not hold your breath, and stay within pain-free range of motion. Relax and repeat.



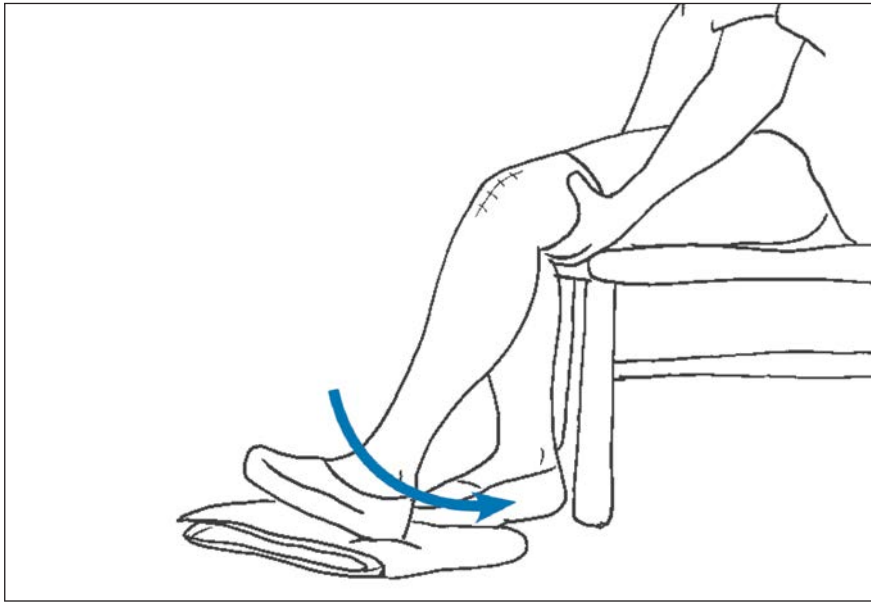
### SHORT ARC QUAD

Lie on your back with a firm blanket roll under your **operated** knee. Blanket roll should be 6-8 inches thick. Lift your heel up off the bed while keeping your knee on the firm blanket roll, straightening your knee as far as you can. Concentrate on strongly contracting the muscles on top of your thigh (quads). Hold for a count of three to five, then slowly lower your heel.



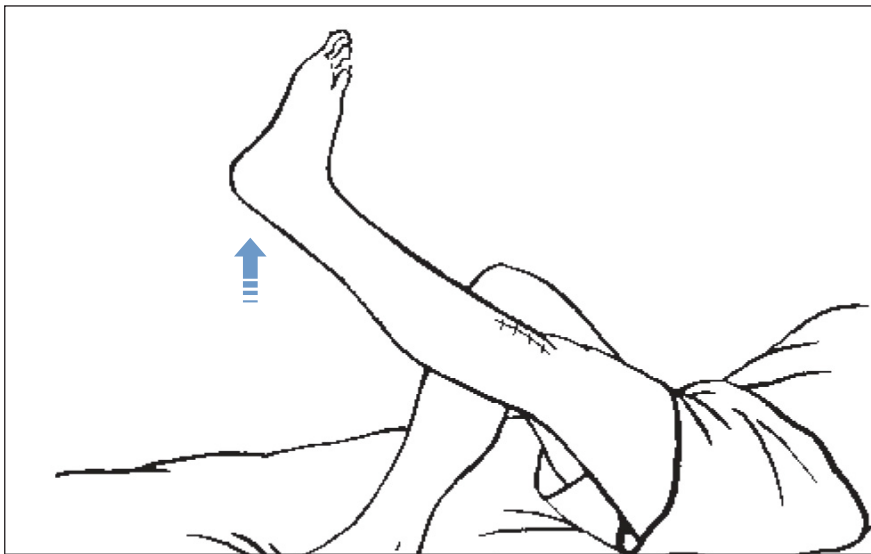
### QUAD SET WITH A TOWEL ROLL

Place a small towel roll under the heel of your **operated** leg. Push down with your knee and tighten the muscle above the knee. Hold for a count of three to five. Relax for a count of five and repeat.



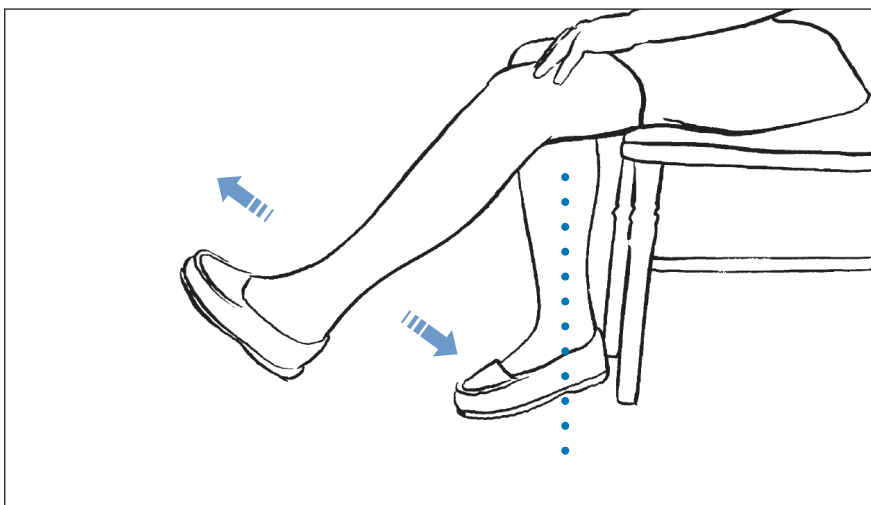
### ASSISTED KNEE FLEXION

Sit evenly on both hips and buttocks on the edge of the chair. Place a towel under your **operated** foot on a hard-surfaced floor (use a plastic bag if on carpet). Keep your knee and your middle toes lined up. Use your hands to assist by lifting up your **operated** thigh. Slide your **operated** foot back toward the chair. Hold for a count of five. Relax and allow your **operated** foot to slide forward. Repeat.



### STRAIGHT LEG RAISES

While lying on your back, slightly bend the knee on your **non-operated** leg. Lift your **operated** leg straight up and then slowly lower it. Your toes should be pointed up toward the ceiling while performing a leg raise. Repeat.



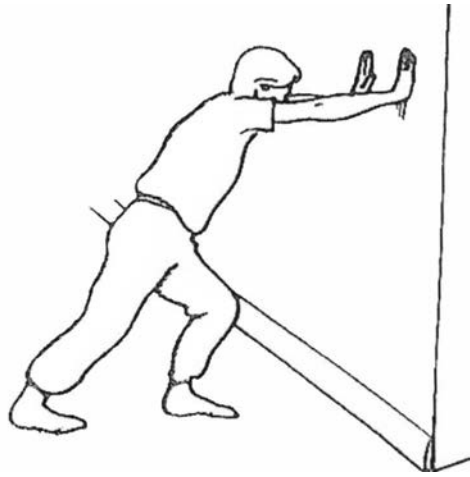
### LONG ARC QUAD SETS

Sit at the edge of a bed or chair. Have your feet lightly touch the floor. Straighten your **operated** leg as much as you can by tightening your thigh muscle. Hold for a count of five and then lower it back down slowly. Relax and repeat.



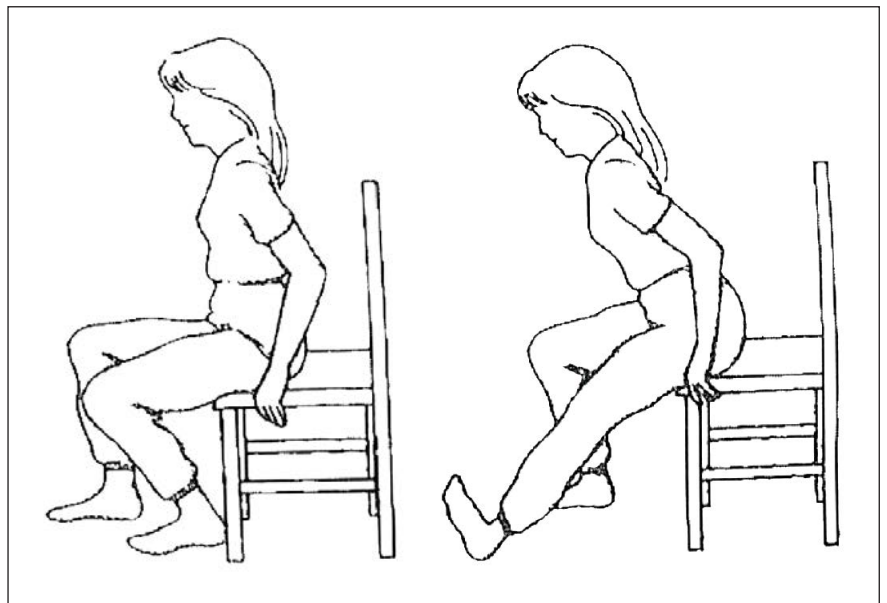
## CALF STRETCH

Facing a wall, stand with both hands flat against the wall. Extend your right leg straight back and lean forward, keeping your right heel flat on the floor, until you feel your right calf muscle stretching. Hold for 30 seconds, then come back up and repeat with your left leg. Do this stretch twice on each leg.



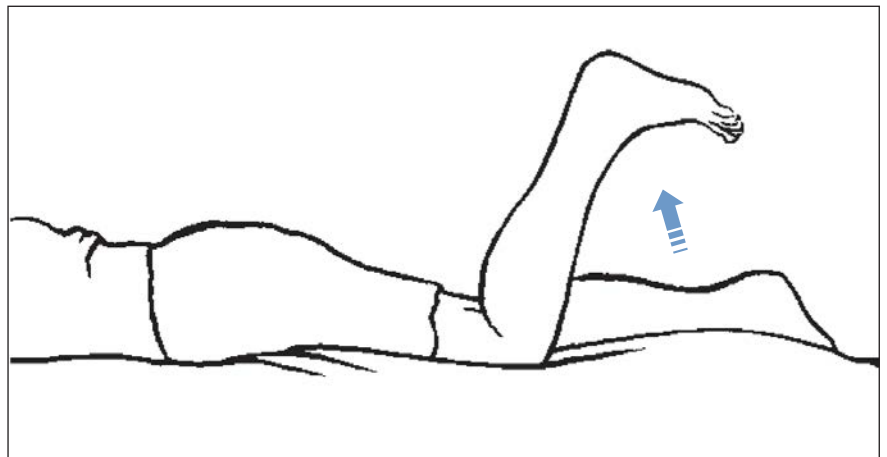
## HAMSTRING STRETCH

Sit on the edge of a straight-back chair, keeping both feet flat on the floor in front of you. Straighten your right leg until your right heel is resting on the floor. Slowly bend forward at the hips until you feel a stretch down the back of your right leg. Be sure to keep your back straight. Hold for 30 seconds, then sit back up and repeat with your left leg. Do this stretch twice on each leg.



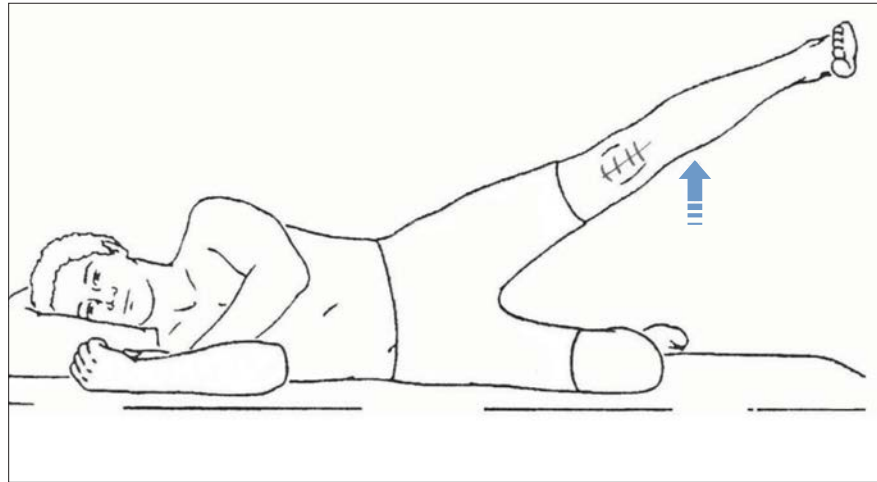
## HAMSTRING CURLS

Lie on your stomach. Bend slightly with your **operated** knee and lift your foot off the bed as high as you can. Hold for a count of three to five. Slowly lower, then repeat.



## KNEE FLEXION EXERCISE AT COUNTER

Stand close to the counter and rest your hands on the countertop for balance. Lift the foot of your **operated** leg so your knee bends, then lower. Repeat.



## SIDE-LYING HIP ABDUCTION

Lie on your **non-operated** side. Bend your **non-operated** knee for support. Keep your stomach muscles tight, and with your toes pointed straight out in front of you raise, your **operated** leg. Repeat.



## HIP ABDUCTION AT COUNTER

Stand close to the counter and rest your hands on the countertop. First, raise your **non-operated** leg out to the side, while balancing on your **operated** leg. Hold for 2-3 seconds and lower **non-operated** leg back to the floor. Repeat 5-10 times.

Second, do the same on the opposite side, raising the **operated** leg out to side. Repeat 5-10 times.

## STEP EXERCISE

Use a railing for balance. Place your **operated** leg up one step. Gently lean forward onto your **operated** leg. Hold for a count of three to five. Relax and repeat.

# Daily Activities and Self Care at Home

## Dressing

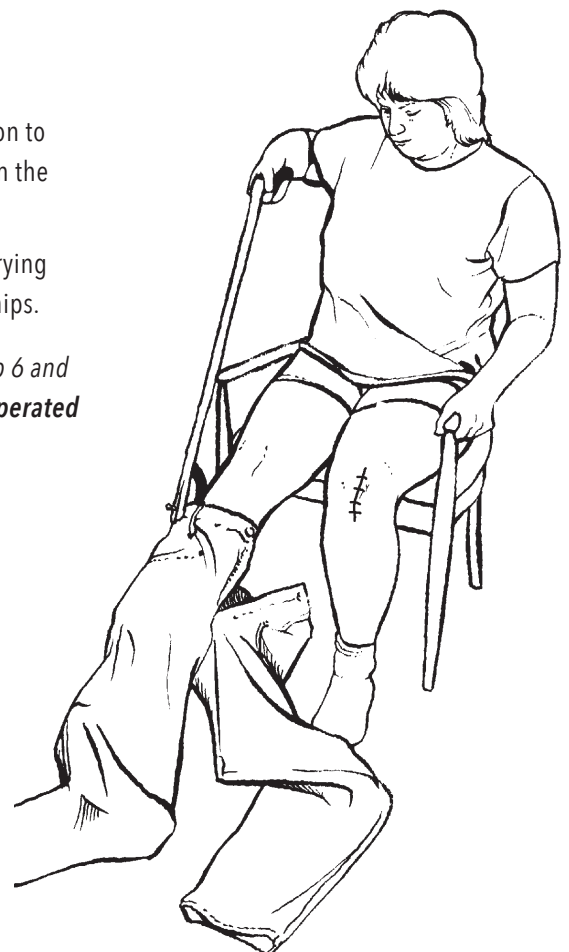
You may find it helpful to have a reacher, a sock aid, a long shoe horn and elastic shoelaces if you have difficulty reaching below your knees after surgery for dressing. Your therapist will explain how to obtain these items, if you feel they will make dressing easier.



## Putting On Slacks or Underwear

- 1 Sit on the edge of the bed, in a straight-backed chair, or on the toilet. Make sure all of your clothing and any special equipment are within easy reach.
- 2 Lay your underwear or slacks on your lap, with the fronts facing up.
- 3 Hook the reacher on to the front waistband on the side of the garment corresponding to your **operated** side. Lower pants to the floor with the reacher, then slip over your foot on the **operated** side.
- 4 Put the **operated** leg in first. Pull the pants up to your knee with the reacher. Then use both hands to pull the pants up the rest of the way.
- 5 Next, do the same for the **non-operated** leg.
- 6 Pull underwear and slacks on to your thigh, then stand, from the seated surface.
- 7 Have your balance before trying to pull pants up over your hips.

*When undressing, reverse step 6 and then sit down. Take the **non-operated** leg out first.*



## Putting on Your Socks

You'll need loose fitting socks, a plastic stocking aid and baby powder.

- 1 Slide your sock on to the plastic stocking aid until the toe is firmly against the end. The open end of the sock should not slip off the top of the plastic.
- 2 Check the position of your sock.
  - toe against the end
  - heel on the bottom
  - sock is not twisted on the plastic
  - sock does not come off the top of the plastic

3 Use baby powder inside the plastic, which helps your foot to slide easily.

4 Grab the end of the cords and lower the stocking aid in front of your **operated** foot. Place your foot in and pull on the cord, pulling your sock on. Use your reacher to assist if the stocking aid does not slip out easily.

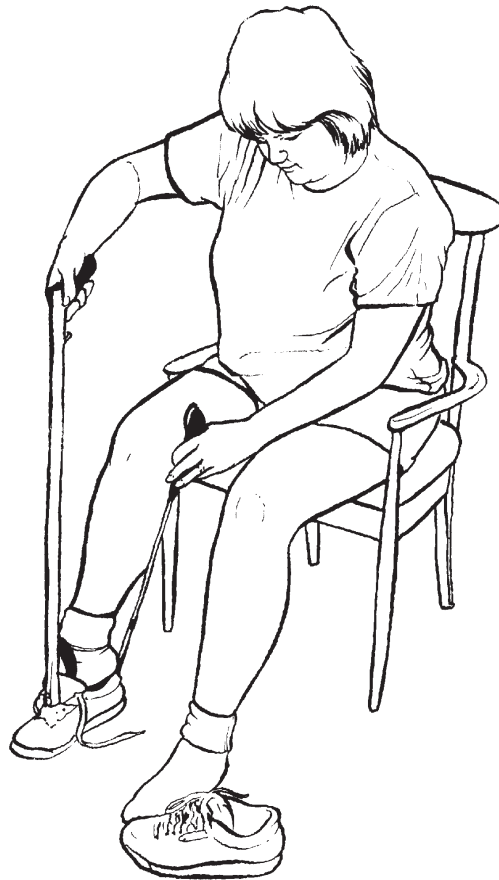
5 Put your socks on your **non-operated** side as usual. If necessary, repeat steps 1-4.



## Putting on Your Shoes

You'll need a long shoehorn, elastic laces and a reacher. Slip-on or tie shoes with good support, or shoes with Velcro fasteners are suggested. *Nothing backless.*

- 1 If you have tie shoes, use elastic shoelaces. These stay tied in your shoes at all times.
- 2 Pull out tongue of shoe and grasp the top of the tongue with the reacher.
- 3 Do NOT press heel down into the shoe until the shoehorn is in place.
- 4 Using your free hand, put the long shoehorn in the heel of your shoe or place on the side of your foot and work back to your heel. Push your heel down into the shoe.



# Bathing/Showering

## Tub Baths

You'll need a long-handled sponge, a tub seat, hand-held shower head and non-slip bath mat.

- 1 Place the tub seat in the bathtub, facing the faucet.
- 2 Standing at the side of the tub, turn so that your back is to the tub seat. Touch tub wall with back of both legs.
- 3 Place your **operated** leg in front of you. Reach back with one hand at a time for tub seat or rest one hand on your thigh, and one hand on the tub seat. Then lower yourself onto the tub seat.

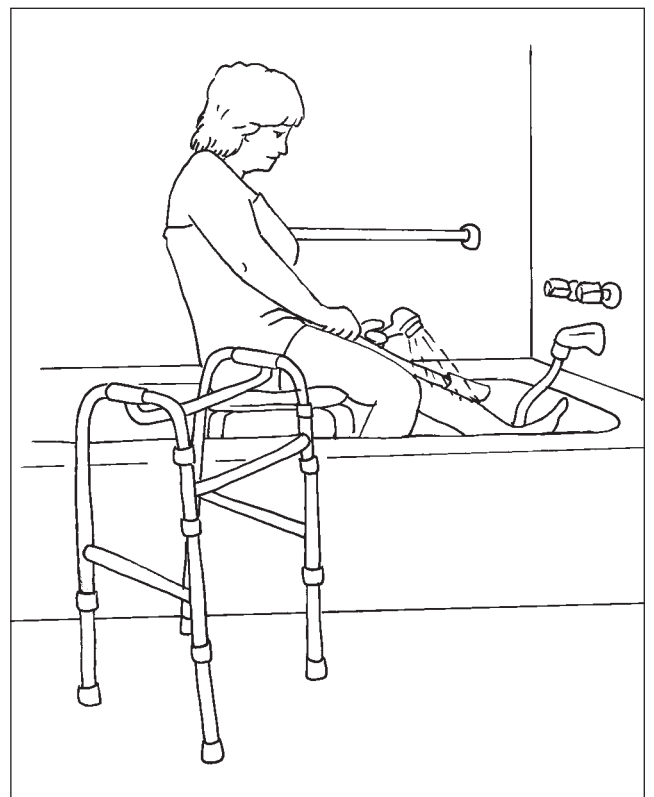
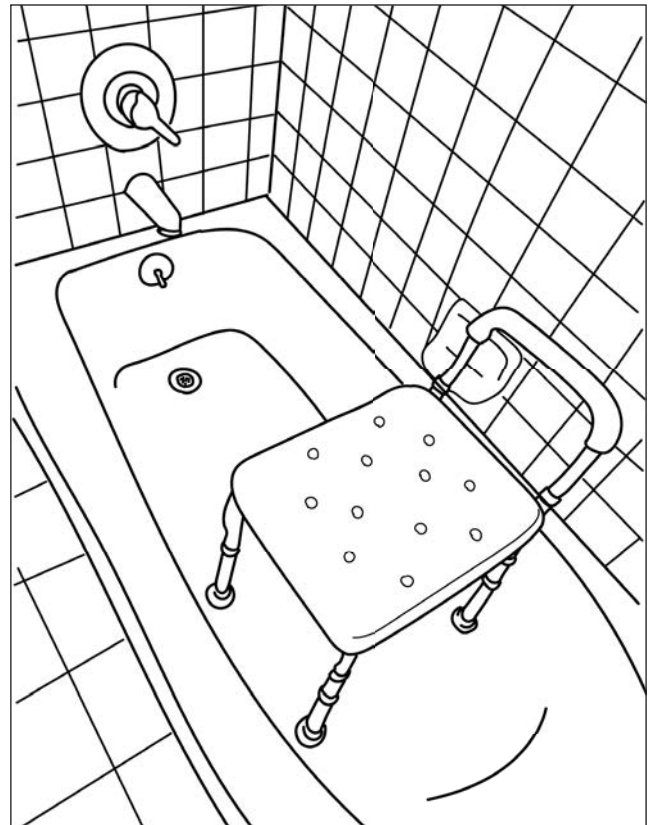
**IMPORTANT - NEVER attempt to step over the edge of the bathtub until your therapist approves this action.**

- 4 Once sitting, get to the center of the tub bench and SLOWLY turn into the tub. Lean back slightly as you lift one leg at a time into the tub.
- 5 To get out of the tub, slowly turn taking one leg out of the tub at a time. Have both feet on the floor before standing.

**IMPORTANT - ALWAYS have someone with you when getting in or out of the tub. They can help prevent tipping of the tub bench or walker.**

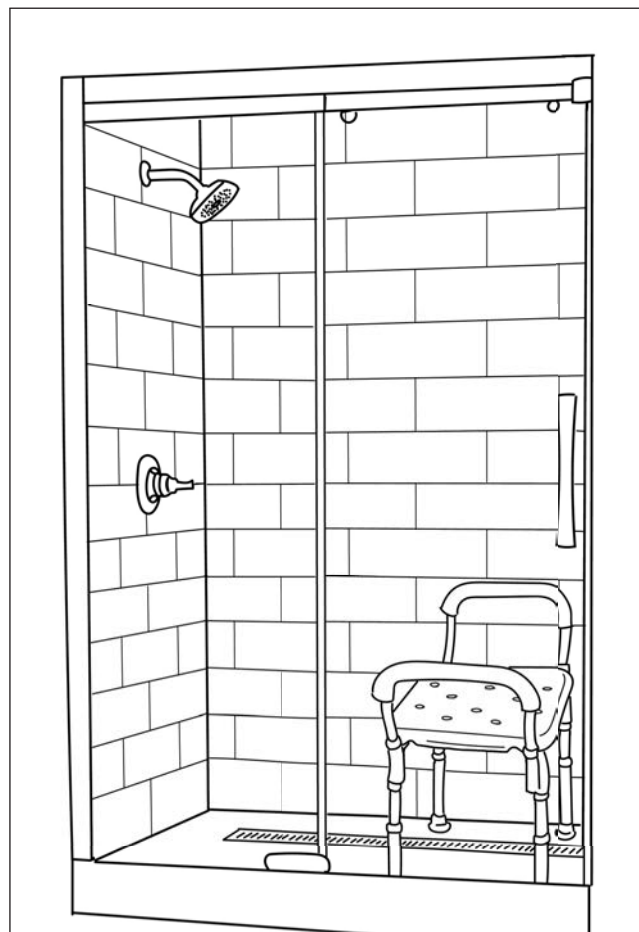
- 6 Keep both hands on the tub seat to prevent tipping. Push up from the tub seat onto the walker.

**DO NOT PULL UP ON THE WALKER unless someone is there to support the walker and keep it from tipping.**



## Showering

- 1 Place the shower seat in the shower facing the faucet. It's safest to have the seat up against a wall.
- 2 Back up to the shower ledge with the walker, touching ledge with the back of both feet.
- 3 With both hands on the walker, step over the shower ledge with **non-operative** leg first. Then bring your **operative** leg over the ledge.
- 4 Step back to the shower seat so the back of both legs are touching the seat. If you need to move further into your shower to reach your shower seat, use your walker. *Do not leave your walker in the shower; it will rust.*
- 5 Reach back one hand at a time for the shower seat or grab bar. *Do not pull on the walker unless someone is there to support the walker and keep it from tipping.*
- 6 To get up, push up from the shower seat or grab bar to stand. Use your walker if needed to get back to shower door entrance. Place your walker outside of the shower.
- 7 With hands on your walker, step over the shower ledge with your **operative** leg first. Then bring your **non-operative** leg over the ledge.



### Helpful Hints

- Place a small stool or table next to the tub or shower for your toiletries.
- Use "soap-on-a-rope" to keep from dropping the soap.
- Hang a bag on your walker to carry your bathing supplies.
- Place a towel on your tub seat for comfort.
- Do not use suction grab bars.
- It is recommended to have someone with you when getting in and out of the tub or shower.
- A bedside commode can also work as a shower seat.

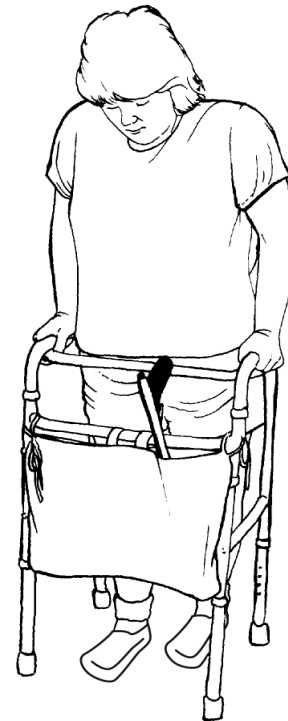


## Homemaking

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To help with homemaking, you'll find these items useful: a walker bag, an apron with pockets, a reacher and a tall stool. *It's helpful to wear an apron with large pockets or a tool belt to carry things, or hang a small bag on your walker.*

- Slide items along counters rather than lifting and carrying them.
  - Move your table close to the counter so that you can easily transfer things back and forth from counter to table.
  - Keep tight covers on hot liquids if you are trying to move them.
  - Store frequently used items in your cabinets and refrigerator between waist and shoulder height for convenience.
  - When working at the kitchen counter, sit on a high stool.
  - Keep chairs nearby for taking rest breaks.
  - To prevent tripping, keep floors clear of electrical and phone cords, small rugs, toys, etc.
  - Use an "oven pull" tool for safe use of the oven.
- Do not over-reach. Stand as close to the item you are retrieving as possible.*



## On the Road to Recovery

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During the latter part of your recovery, you can continue building strength and endurance by doing your exercises more often and by practicing walking even greater distances. By now, you're likely to be driving, relying less on equipment and returning to physical activities like swimming. Soreness caused by your surgery is likely to be decreasing, and you can expect to see your efforts paying off as you increase your activities. As part of your ongoing

care, your doctor will see you to check your progress.

### Developing a Walking Program

An important part of your recovery will be developing a walking program. A good way to practice walking is to make it a part of your daily routine. Once walking becomes easier, follow a regular program. Begin by walking three times a day for 10 minutes.

Increase to two times daily for 15 minutes. Build up to one 30-minute walk each day.

### Continued Strengthening

For those who wish to progress to more advanced strengthening exercises, ask your outpatient physical therapist. These exercises are only indicated for those who wish to resume a higher level of activity.



Crystal Clinic is a physician-owned hospital system

