

Exercise Guide for Hip Replacement Surgery



Name:

Surgery Date:

Surgeon:

Special Instructions:

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

Please refer to the *Before During and After Hip and Knee Replacement Surgery – A Patient’s Guide* for further information.

The guide is available at: <http://vch.eduhealth.ca>

The exercises prescribed, and the pace of progressions recommended in the hip exercise booklet, are intended for patients with unilateral, primary hip replacement for osteoarthritis, with a postero-lateral incision approach.

These exercises may be suitable for patients with a different surgical approach, bilateral total hip replacements, revisions or for inflammatory conditions. However, progressions and recovery may be slower. Some exercises will need to be modified to suit the individual patient by the clinician. The exercises are designed to be prescribed by a physiotherapist.

Acknowledgments

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Fraser Health Authority



Vancouver Coastal Health Authority



Interior Health Authority



Vancouver Island Health Authority



Northern Health Authority



Providence Health Care

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We would also like to thank the joint replacement clients, surgeons, physicians and other health care professionals who participated in the evaluation and revision process of this guide. Your feedback and suggestions will be of great help to those preparing for joint replacement surgery.

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You are about to have hip replacement surgery. People who prepare for surgery and take an active role in their care can recover in less time and with less pain. This guide has general information along with tips and goals for exercising before and after surgery.

The goals and exercises in this guide will help you along the path to recovery. The instructions from your surgeon, doctor or physiotherapist may be slightly different than in this booklet. Always follow the directions of your health care team.

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

Caution:

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

Before Surgery: General Guidelines

Regular exercise before surgery can help your recovery.

Exercise also helps to:

- Keep the movement in your hip
- Make your muscles strong
- Control your pain
- Build your knowledge of how to exercise after surgery
- Reduce your body weight
- Improve your sleep

Do activities that put less stress on your hip. Try:

- Swimming, water walking, water aerobics
- Upright stationary cycling
- Walking with or without poles
- Strengthening or stretching exercises
(e.g. pages 9 – 15 in this booklet)

Warm up before doing strengthening or stretching exercises.

- Walk for 5 – 10 minutes
- Use an upright stationary bike for 5 – 10 minutes
- Apply moist heat to tight or stiff muscles for 5 – 10 minutes

To keep pain under control:

- Rest your joint for short, frequent times in the day
- Pace yourself
- Use a walking aid such as a cane, walking poles or walker
- Talk to your doctor or pharmacist about pain medicine

Learn to Turn On Your Core Muscles

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

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

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

1a. Pelvic floor (bladder muscles)

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

Hold for 6 seconds, then slowly relax

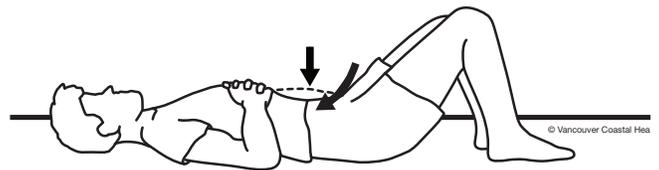
Repeat 6 – 8 times, 3 times a day

1b. Lower abdominal muscles

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

- Hold for 6 seconds while breathing quietly, then slowly relax as if you unzip your pants. Keep upper chest relaxed

Repeat 6 – 8 times, 3 times a day



Before Surgery: Exercises

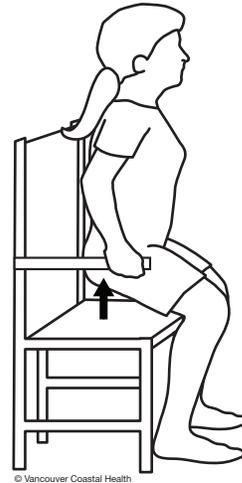
2. Arm chair push-ups

You need strong arms to use your walker (or crutches) and to help you get out of bed. Strengthen your arms before your surgery.

- Sit on chair with armrests
- Place hands on armrests with elbows bent
- Push down through your hands to lift your body off the seat

Hold 6 seconds, **slowly** lower down

Repeat 8 – 15 times, 3 times a week



Do the following exercises from this guide:

Turn on core muscles (page 4)

Range of motion exercises

- Leg slide out (8.)
- Hip stretches (9.)

Strengthening exercises

- Knee straightening (7.)
- Hip lift (bridge) (12.)

Stretching exercises

- Hamstring stretch (10.)
- Calf stretch (11.)
- Thigh stretch on belly (19.)

After Surgery: General guidelines

Exercise after surgery will help you recover and regain movement and strength in your hip. Exercise also helps to:

- Reduce swelling
- Prevent blood clots
- Control pain
- Prevent constipation
- Improve sleep
- Improve balance
- Increase activity tolerance

Hip precautions

After Total Hip Replacement (THR) you will need to follow **hip precautions for 3 months** unless your surgeon tells you differently. These precautions help you heal and reduce risk of hip dislocation.

It is important that you understand and follow these precautions. Read them in *Before, During and After Hip and Knee Replacement Surgery*. Ask your surgeon for a copy or go online at <http://vch.eduhealth.ca/PDFs/FB/FB.130.B393.pdf>

Pain control

Suggestions to keep pain under control are in the booklet *Before, During and After Hip and Knee Replacement Surgery* mentioned above.

If your whole leg becomes swollen, warm or increasingly painful, tell your doctor right away.

You may have muscle pain as you begin new exercises or return to work. If the increased pain lasts into the next day, try spending less time standing and reduce your exercises.

Each person heals differently. The time it takes to meet goals may differ. Talk to your surgeon or physiotherapist if you are concerned.

What to Expect: Weeks 0 – 3

Follow suggestions to keep your pain under control in the early days after surgery. This reduces your chance of long term pain and helps you to move more freely. Get enough sleep and maintain regular bowel movements. In the first 3 weeks, exercises focus on hip movement and gradually increasing your standing and walking.

Goals: By the end of week 3

- Move your leg in and out of bed by yourself (start with a strap)
- Move on and off a raised chair, bed and toilet without help
- Walk at home using a walker, cane or crutches
- Use the stairs safely with cane or crutches

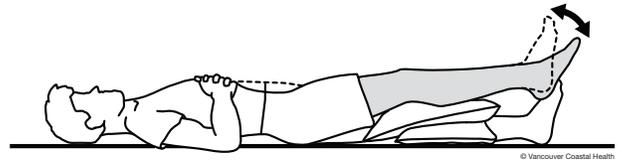
Exercises: Weeks 0 – 3

3. Foot and ankle pump

This helps to reduce swelling and risk of blood clots

- Pump your whole foot up and down

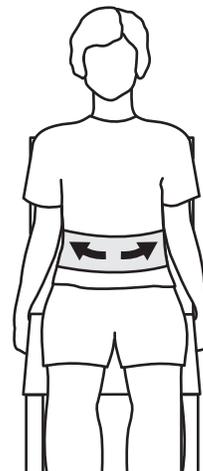
Repeat 10 times, every hour



4. Breathing

- Sit with shoulders relaxed
- Turn on core muscles (page 4)
- Breathe in slowly through your nose, feel your ribcage widen sideways (core muscles are on)
- Breathe out slowly and feel your ribcage drop down

Repeat 6 breaths, every hour

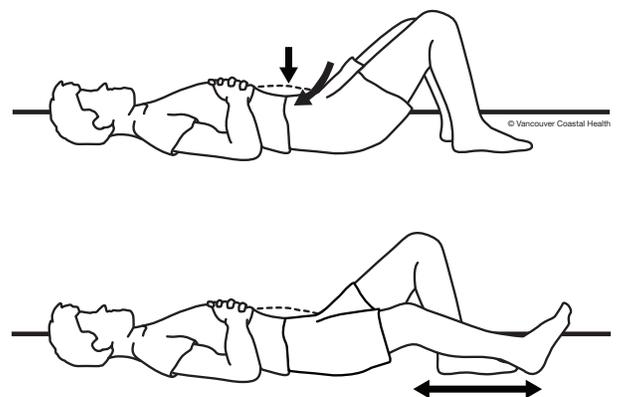


5. Core heel slide

- Lie on your back with knees bent, feet in line with shoulders
- Turn on core muscles (page 4) to keep back and pelvis still
- Slide one leg down the bed, re-set your core muscles, slide leg back up

Repeat 6 – 8 times, 3 times a day

Repeat on other side



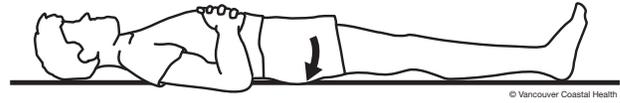
6. Lower buttock squeeze

6a. Lying

- Lie on your back with legs straight
- Squeeze lower buttocks together gently, as if holding a pencil between your buttocks

Hold 6 seconds

Repeat 6 – 8 times, 3 times a day

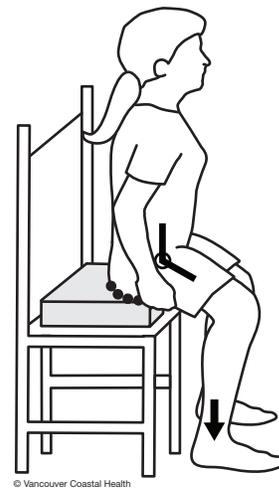


6b. Sitting

- Sit on chair with feet supported, hands under your sit bones
- Turn on core muscles
- Squeeze lower buttock muscles together, feeling your sit bones pull away and lift off your fingers (imagine sitting on a hot leather seat)

Hold 6 seconds, slowly relax, **as you keep core muscles on**

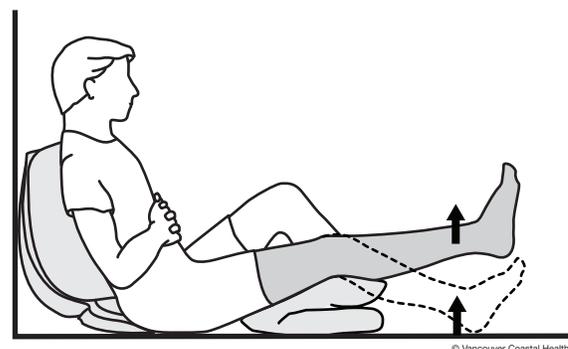
Repeat 6 - 8 times, 3 times a day



7. Knee straightening

- Recline on bed, place a large folded pillow under your knee
- Turn on core muscles
- Lift foot up to straighten your knee
- Slowly lower leg down

Repeat 6 – 8 times, 3 times a day



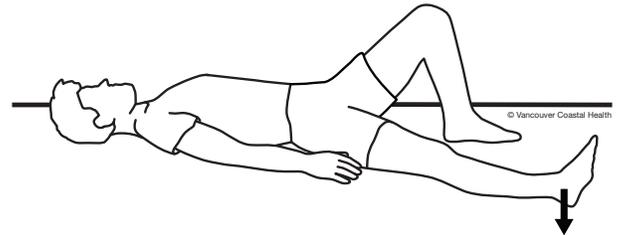
8. Leg slide out

Discuss with your surgeon or physiotherapist before starting this exercise.

- Lie on your back with one leg bent
- Turn on core muscles to keep back and pelvis still
- Leading with the heel, slide straight leg out to the side (knee cap and foot point to the ceiling)
- Re-set core muscles and slide leg back

Repeat 6 – 8 times, 3 times a day

Repeat on other side



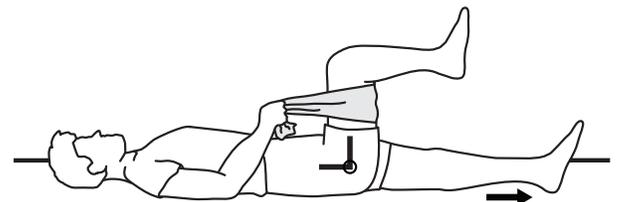
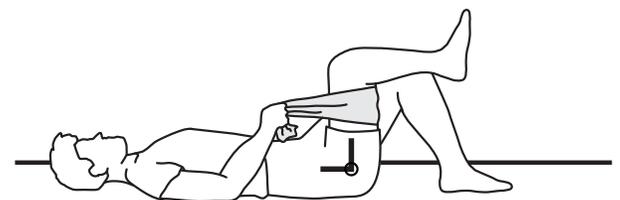
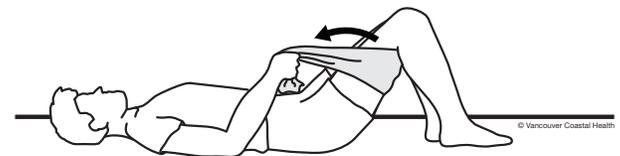
9. Hip stretches

- Lie on your back, both knees bent
- Turn on core muscles to keep back and pelvis still
- Use towel to bring one thigh up (no more than 90°)
- Slide the other leg down the bed, until you feel a stretch at front of hip, keep core muscles on, **do not arch your lower back**
- Slide the straight leg back to bent position, lower the supported leg

Hold stretch for 30 seconds

Repeat 3 – 4 times, once a day

Repeat on other side



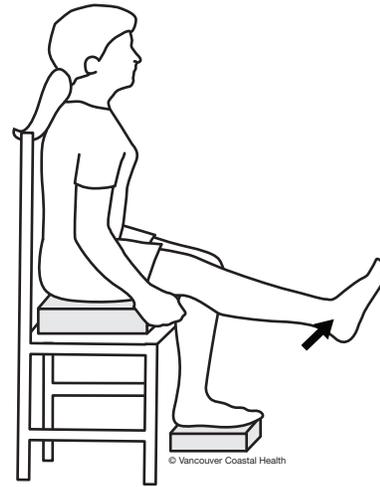
10. Hamstring stretch

- Sit with your back, thighs and feet supported
- Turn on core muscles (page 4)
- Squeeze a big rolled towel between your thighs
- Lift one foot up to straighten knee
- Stop when you feel a stretch at the back of your thigh, even if knee is not straight

Hold stretch for 10 seconds

Repeat 3 – 4 times, once a day

Repeat on other side



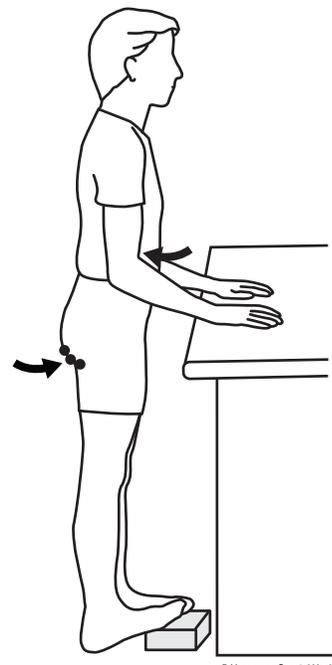
11. Calf stretch

- Stand beside a support, with a hard book (7 – 8 cm thick) under the ball of **one** forefoot, keep other foot beside it on the floor
- Turn on core and lower buttock muscles (imagine holding a pencil between your buttocks)
- Bring hips forward, feel a stretch along back of calf, (you may also feel a stretch at the front of your hip)

Hold stretch for 30 seconds

Repeat 3 – 4 times, once a day

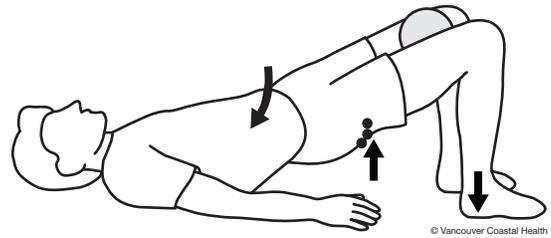
Repeat on other side



12. Hip lift (bridge)

- Lie on your back with knees bent, press a large rolled towel between thighs (use only one flat pillow or none for your head)
- Turn on core muscles (page 4)
- Turn on lower buttocks and lift hips up, keep back relaxed
- Keeping pressure on towel, slowly lower hips

Repeat 8 – 15 times, 3 times a week

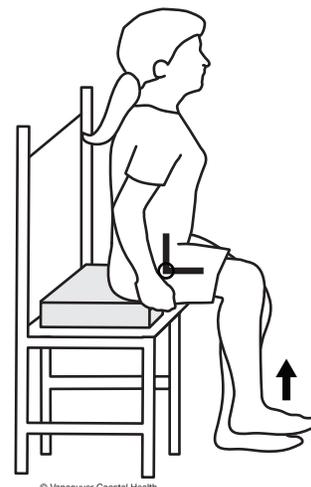
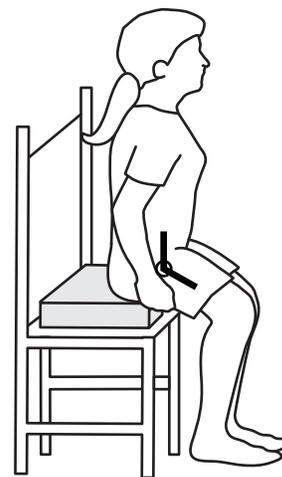


13. Hip bend

- Sit on the edge of a chair with raised cushion, feet on floor (you may hold on to the sides of chair for support)
- Turn on core muscles (page 4)
- Gently float leg up so foot comes just off the floor (no more than 90° bend at the hip)
- Keep core muscles on as you lower leg

Repeat 6 – 8 times, once a day

Repeat on other side



14. Hip extend

14a. Straight leg lift

- Stand supported over counter
- Tilt tail bone up to create a small curve in lower back
- Turn on core muscles
- Stand on non-operated leg, and lift your operated leg up and back, without twisting hips or pelvis
- Lower leg, keeping small curve in lower back using your core muscles

Repeat 8 – 15 times, 3 times a week

To progress: weeks 6 – 9

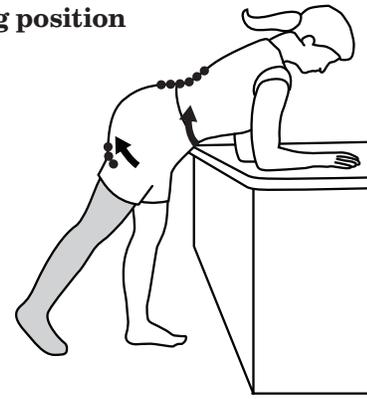
14b. Keep your leg up, bend and straighten your knee, then lower

14c. Keep your leg up, move leg out to the side (lead with heel). Return to start position and lower leg

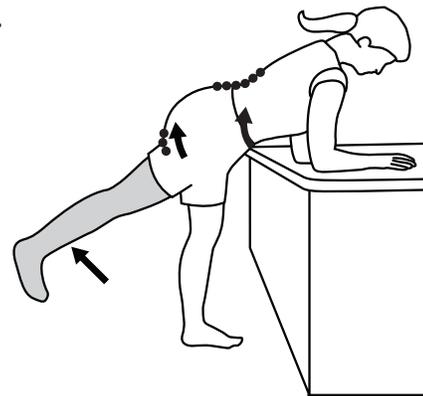
To progress: weeks 9 – 12

- **Stand on operated leg**
- Perform exercises 14a., 14b. and 14c. with your non-operated leg. **Keep operated hip still, avoid swaying out to the side**

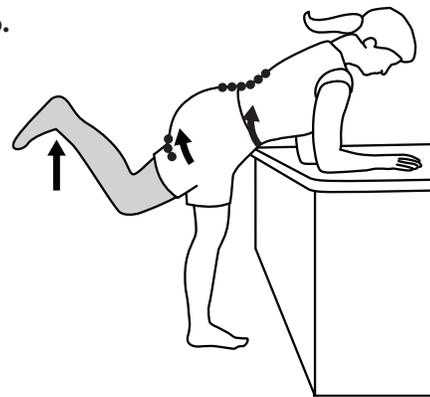
Starting position



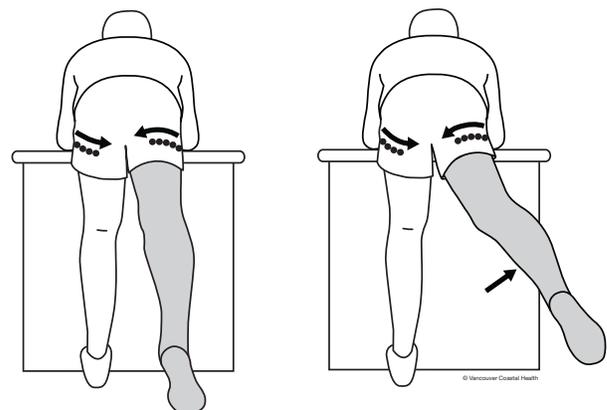
14a.



14b.



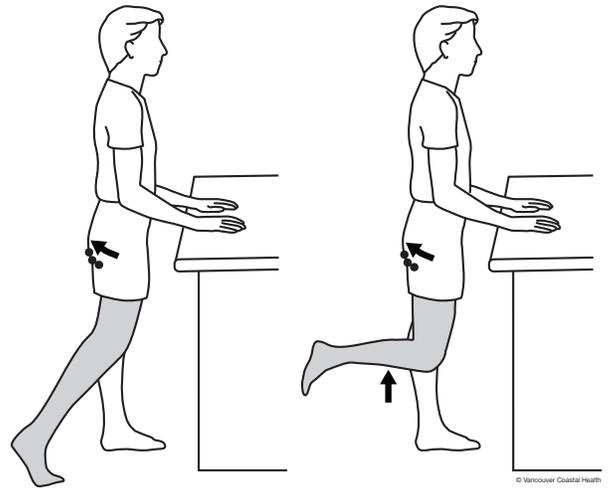
14c.



15. Knee bend, standing

- Stand with support, resting operated leg behind you
- Turn on core and lower buttock muscles
- Bend knee by lifting heel toward buttock

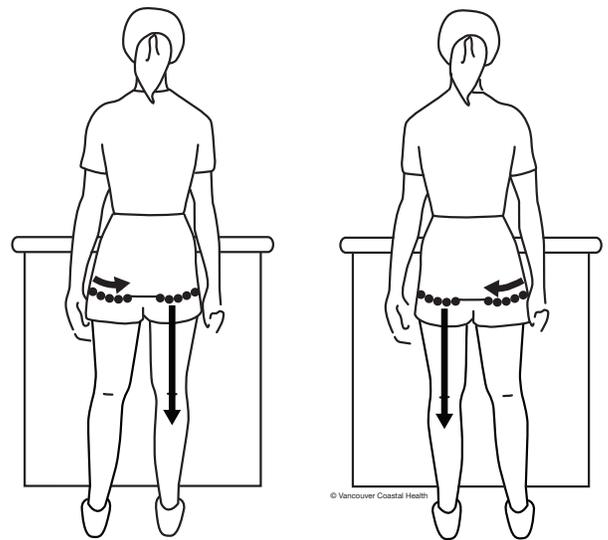
Repeat 8 – 15 times, 3 times a week



16. Weight shift, side to side

- Stand with feet shoulder width apart
- Turn on core and lower buttock muscles (imagine holding a pencil between buttocks)
- Shift your body weight from one leg to the other through your lower buttocks (very small motion)
- Keep pressing other foot into the floor
- Imagine only using one buttock and leg to support all your weight

Repeat 6 – 8 times, 3 times a day



What to Expect: Weeks 3 – 6

By 3 weeks after surgery, your hip should start to feel better and move easier. Progress your exercises to gain more flexibility, strength and control of your new hip joint.

Goals: By the end of week 6

- Bend your hip to 90°; slide your leg out (abduct) to 25°; and straighten your hip fully to 0°
- Walk several blocks with a cane in the opposite hand
- Ride an upright stationary bike (seat raised so your hip doesn't bend more than 90°)

Exercises: Weeks 3 – 6

Continue to do exercises from weeks 0 – 3 as needed.

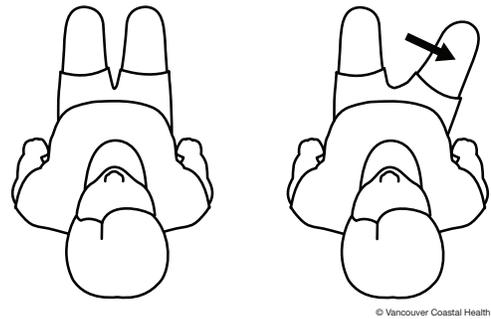
Exercises #8 and 9 should be done until you have reached target hip ranges (see goals by end of week 6). Check with your therapist.

17. Core bent knee turn out

- Lie on your back with legs bent, feet shoulder width apart
- Turn on core muscles to keep back and pelvis still (page 4, 1b)
- Turn one knee out 6 inches (no more), slowly bring it back

Repeat 6 – 8 times, 3 times a day

Repeat on other side

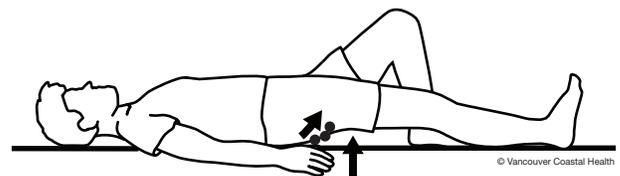


18. Half bridge

- Lie on your back with one leg bent, one leg straight
- Turn on core and lower buttock muscles
- Lift both hips off the mat, pressing into the heels, lower down slowly
- Keep hips level and back relaxed

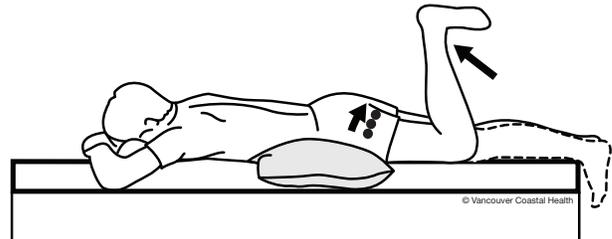
Repeat 8 – 15 times, 3 times a week

Repeat on other side



19. Front thigh stretch, on belly

- Lie with pillow under your belly button
- Turn on core and lower buttock muscles (imagine holding a pencil between buttocks)
- Bend one knee until you feel a stretch at front of thigh, keeping foot in line with same buttock
- Keep core and buttock muscles on when lowering leg down
- Add a folded towel under your thigh for more stretch



Hold stretch for 10 seconds

Repeat 3 – 4 times, once a day

Repeat on other side

20. Heel squeeze

- Lie with pillow under belly button, legs apart
- Bend knees and put heels together
- Turn on core muscles
- Turn on lower buttock muscles until you feel the heels pressing together
- Relax buttock muscles without relaxing core muscles



Hold 6 seconds

Repeat 8 – 15 times, 3 times a week

Note: This exercise should not be done if your surgical cut is on the front of hip (check with your therapist)

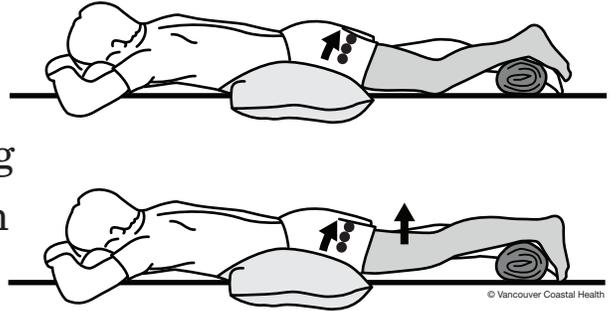
21. Thigh lift

- Lie with pillow under belly button
- Rest ankle on a rolled towel
- Turn on core and lower buttocks
- Lift **thigh** off the bed to straighten leg
- Keep core turned on then lower thigh

Hold 6 seconds

Repeat 8 – 15 times, 3 times a week

To progress: Strap weight belt on back of thigh
(request help to set it up)



22. Hip bend

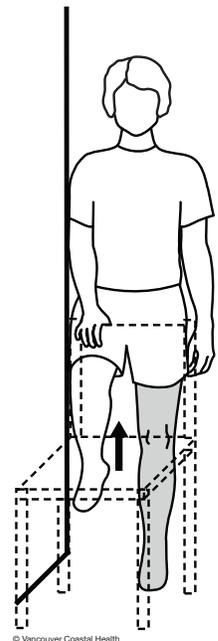
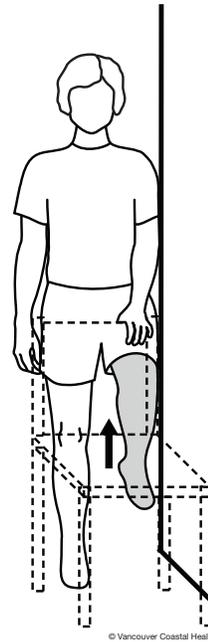
22a. Sideways against wall

- Stand tall with operated side against wall
- Support on other side with chair
- Turn on core muscles
- Slide operated thigh up and down along the wall, do not bend past 90°
- Keep lower buttock turned on and hip straight on standing leg

Repeat 8 – 15 times, 3 times a week

To progress: weeks 9 – 12

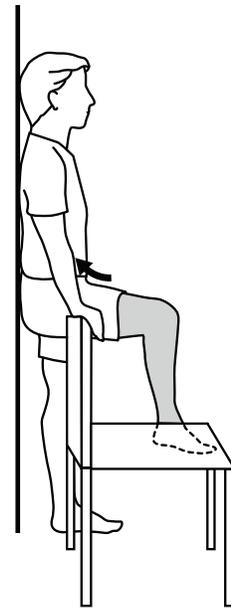
- Switch to **standing on operated leg**, slide non-operated leg along the wall
- Challenge balance by resting arms across chest



22b. Back against wall

- Stand with back against wall.
- Place hand on chair for support
- Turn on core muscles
- Lift thigh up on operated side and lower slowly
- Do not arch your back
- Challenge balance by resting arms across chest

Repeat 8 – 15 times, 3 times a week



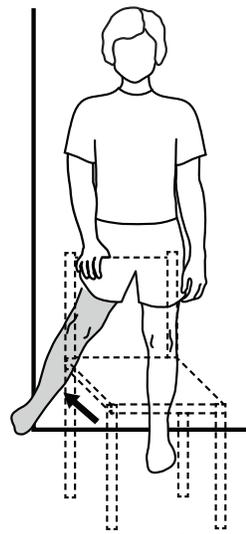
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23. Hip side lift, against wall

- Stand with back against a wall
- Put hand on chair for support
- Turn on core and lower buttock muscles to keep pelvis level
- Keep knee straight and slowly slide operated leg slowly up the wall, lead with the heel, foot pointing forward

Hold 6 seconds

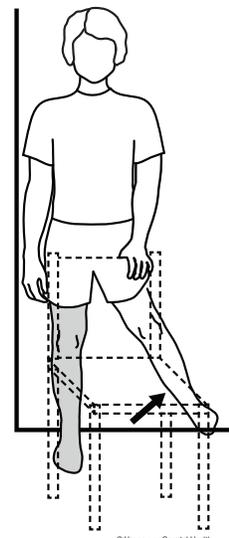
Repeat 8 – 15 times, 3 times a week



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To progress: weeks 9 – 12

- Switch to **standing on operated leg**, switch hand support on chair to non-operated side and perform the exercise



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24. Upright bike

Using a stationary bike is one of the best ways to do moderate intensity activity after hip replacement. Some tips to use a bike safely are:

- Use an upright, not a recumbent (reclined) bike because hips bend less on an upright bike
- While on hip precautions, ensure the bike doesn't force hip to bend more than 90°, and do this by raising the seat and avoid leaning forward over the handlebars
- Cycle forwards and backwards
- Slowly add light resistance or tension



What to Expect: Weeks 6 – 9

Slowly return to everyday activities. Talk to your therapist about increasing challenge to your exercise program. Read the guidelines on strength training, balance and flexibility on pages 34 – 36 of this guide.

Goals: By the end of week 9

- Walk longer distances, use a cane to avoid walking with a limp
- Sit and stand from a raised chair without using hands to help
- Balance for a short time on your operated leg
- Climb up and down stairs with alternating feet. Use cane or hand rail for support
- Return to work or volunteer activities (check with your doctor if not sure)

Exercises: Weeks 6 – 9

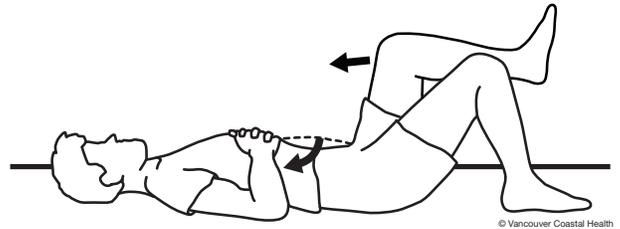
Continue to do exercises from weeks 3 – 6 if needed (check with your therapist).

25. Bent knee lift

- Lie with both knees bent
- Turn on core muscles
- Bring one knee up to 90° hip bend
- Lower leg down, keeping pelvis still with your core muscles
- Do not arch your back

Repeat 6 – 8 times, once a day

Repeat on other side



26. Bent knee pull out

- Lie on your back with legs bent and feet shoulder width apart
- Tie a yellow or red elastic band tight around mid-thigh

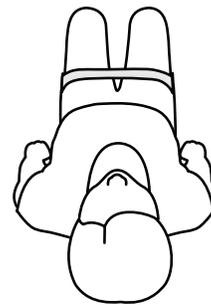
26a. Move both thighs apart slightly and evenly against band with your hips, return slowly, keep pelvis still with core muscles

Repeat 8 – 15 times, 3 times a week

26b. Move one thigh out, keep the other leg still

Repeat on other side

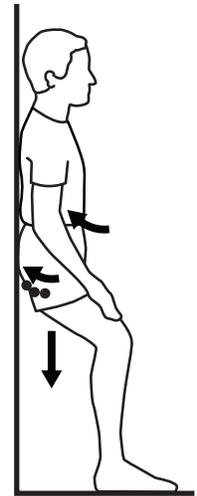
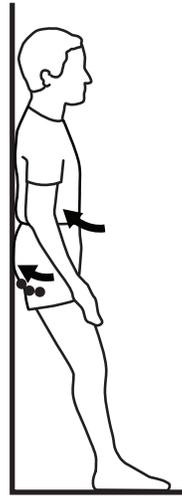
Repeat 8 – 15 times, 3 times a week



27. Wall slide

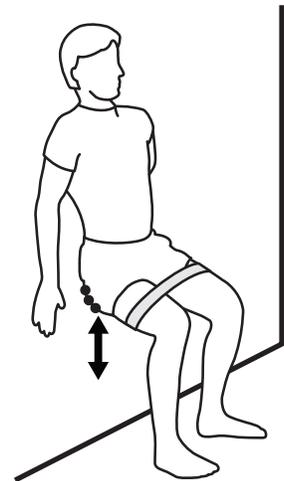
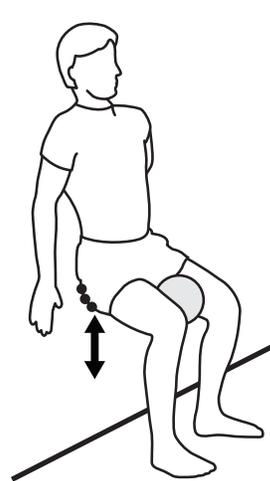
- Stand with body against wall, feet shoulder width apart
- Turn on core and lower buttock muscles
- Slide your body slowly up and down the wall, taking the weight through your buttock muscles

Repeat 8 – 15 times, 3 times a week



Tips:

- If knees spread wide as you lower, hold a rolled towel between thighs to keep thighs together
- If knees fall in as you lower, tie an elastic band around mid-thighs and push against band to keep thighs in line with feet

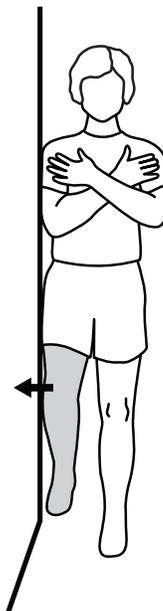


28. Leg push against wall

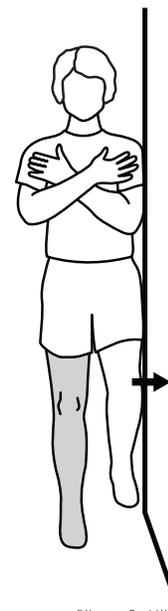
- Stand on your non-operated leg, arms crossed on chest, leaning against wall
- Slide operated leg 60° up the wall and push against the wall
- Feel buttock muscles (around your back pockets) working hard

Hold 6 seconds

Repeat 8 – 15 times, 3 times a week



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To progress, weeks 9 – 12:
Switch to **standing on your operated leg** and repeat exercise

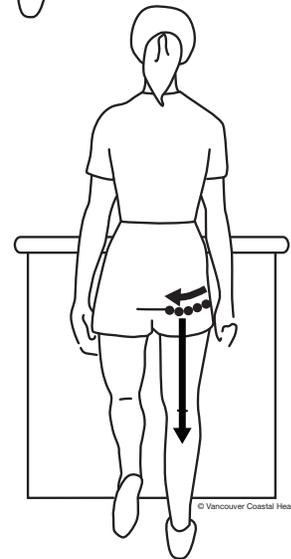
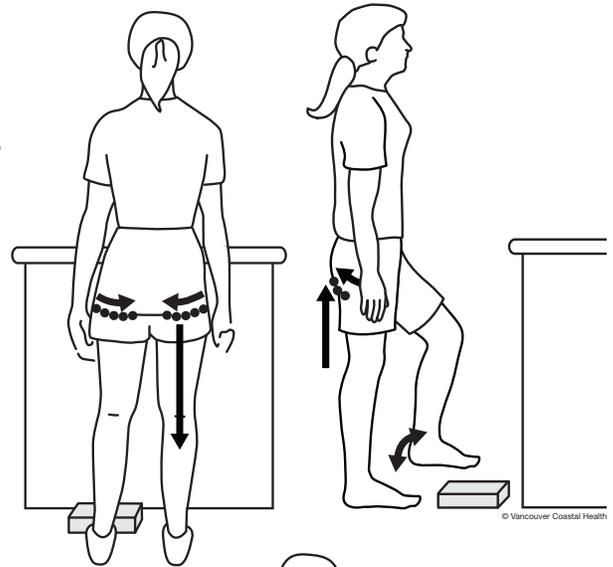
29. Balance on one leg

- Stand near a supporting structure, place a hard book in front of your foot
- Turn on core and lower buttock muscles
- Shift weight onto one leg (see #16)
- Lift the other leg and place it on and off the book (preparing for stairs)
- Keep body and pelvis still, balancing on standing leg

Repeat 8 – 15 times, 3 times a week

Repeat on other side

To progress: shift to stand on one leg, lifting the other leg off the floor and hold for up to 30 seconds



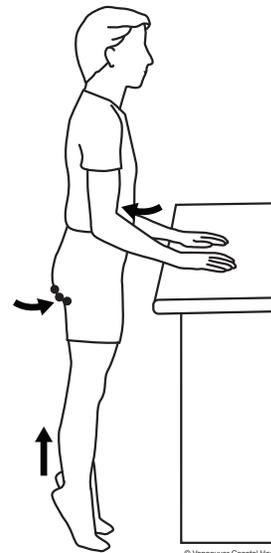
30. Heel rises

- Stand in front of a stable support
- Turn on core and lower buttock muscles
- Rise up onto your toes, feeling the lift in your arches as your heels rise, do not lean forward

Repeat 8 – 15 times, 3 times a week

To progress:

- Do exercise standing on the edge of a step, holding onto railing, lift heels up, then lower down over the edge of step
- Do the exercise standing on one leg

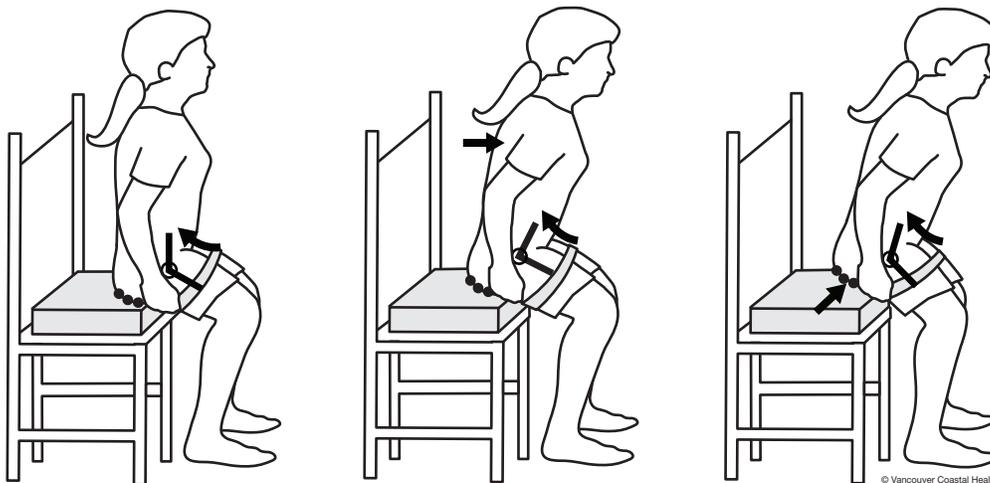


31. Sit to stand

- Sit on the edge of chair with your raised cushion
- Tie an elastic band around thighs
- Turn on core and lower buttock muscles
- Push thighs against band to keep knees in line with shoulders, **especially when sitting down**
- Bend forward at the hips to stand up and sit down, press into the feet and lift from the lower buttock muscles
- Do not bend hips more than 90 degrees

Repeat 8 – 15 times, 3 times a week

At week 12: Remove raised cushion and do it with a normal height chair



What to Expect: Weeks 9 – 12

By 12 weeks after surgery you will feel more confident with everyday activities. Talk to your physiotherapist about making your exercises harder and read the guidelines on strength training, balance and flexibility on pages 34 – 36 of this guide.

Goals: by the end of week 12

- Walk without a limp, discuss goal for distance with your physiotherapist
- At 12 weeks, start to sit and stand from a normal height chair and toilet without pushing from hands
- Climb up and down stairs with alternate feet, and little or no railing support
- Return to driving with surgeon's OK
- Progress home exercise program and begin to exercise in community fitness centers
- List other goals here: _____

Exercises: Weeks 9 – 12

32. Leg lift, on belly

- Lie with pillow under your belly button, feet off the edge of the bed
- Turn on your core and lower buttock muscles

32a. Straight leg lift

- Lift one leg **just off the bed** with your buttock muscle, then lower without relaxing your core muscles

To Progress:

32b. Bent leg lift

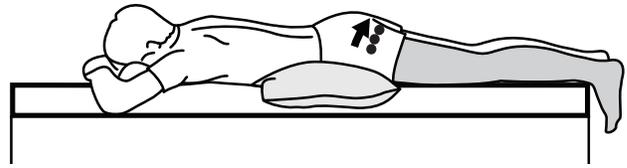
- Bend the knee before you lift the thigh slightly off the bed

32c. Straight leg swing out

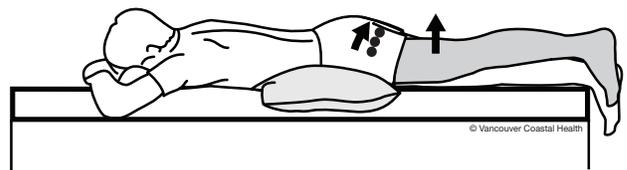
- Lift and move the leg out and back through a small range
- Do not arch your back, keep the lower buttock muscle on the other side turned on

Repeat 8 – 15 times, 3 times a week

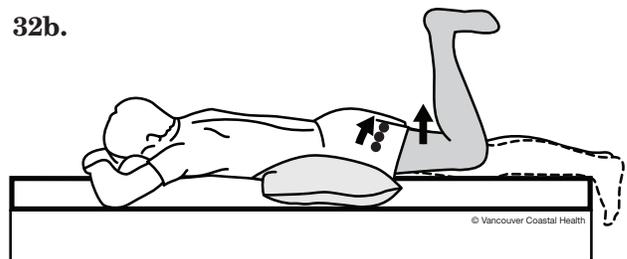
Starting position



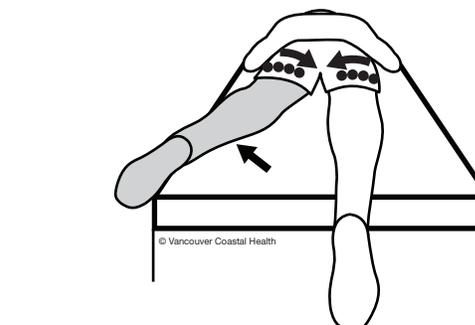
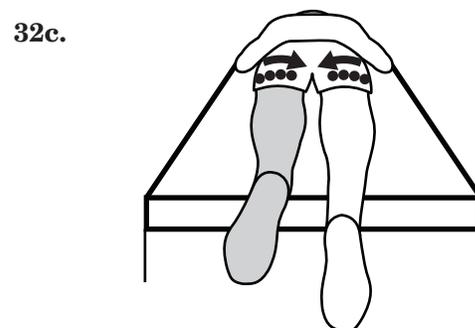
32a.



32b.



32c.

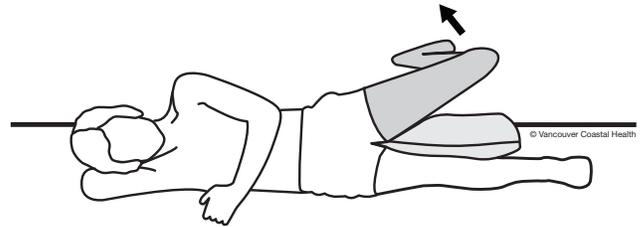


33. Leg lift, side lying

- Lie on your non-operated side, pillow between legs
- Hips straight and knees bent behind you
- Turn on core muscles
- Lift leg off pillow with buttock muscles (back pocket area)
- Keep pelvis still, do not let your top hip roll backward

Hold 6 seconds

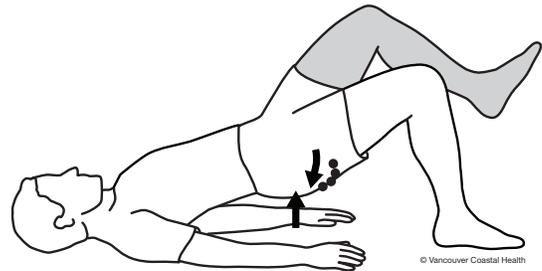
Repeat 8 – 15 times, 3 times a week



34. Advanced bridge

34a. Bridge, leg bent

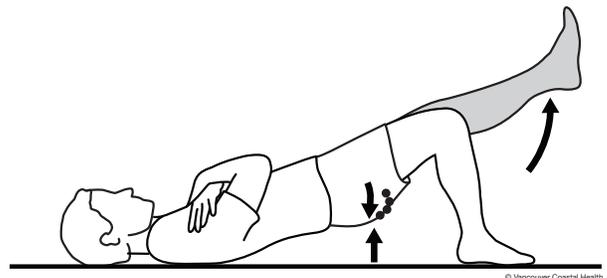
- Lie on your back with legs bent
- Turn on core muscles
- Lift hips up and level (bridge #12))
- Lift operated leg to 90° hip bend



34b. Bridge, leg straight

- Support hips with non-operated leg and straighten operated leg. Keep hips raised and level

Repeat 8 – 15 times, 3 times a week



To progress:

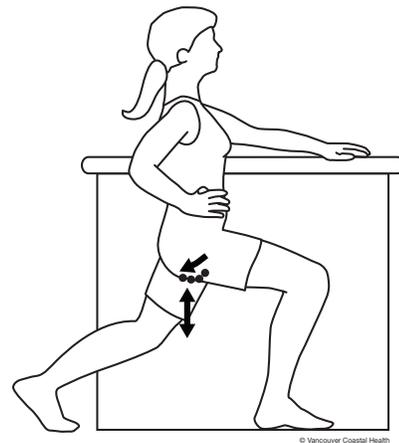
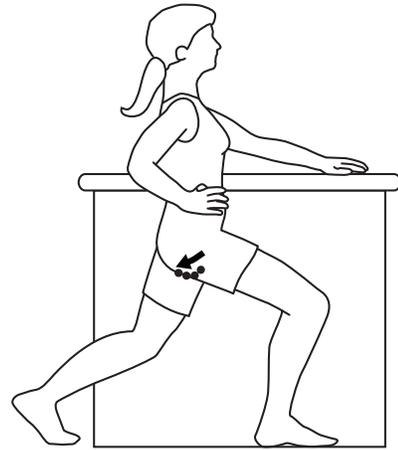
- Switch to **lift non-operated leg**
- Rest arms across chest

35. Split squat (lunge)

- Use counter for support
- Step forward with one leg
- Turn on core and buttock muscles
- Lower and lift body straight up and down through the hip, bending at the knee
- Do not lean forward. Keep your body weight behind your front knee and foot

Repeat 8 – 15 times, 3 times a week

Repeat on other side



36. Weight shift forwards and backwards (Rocking horse)

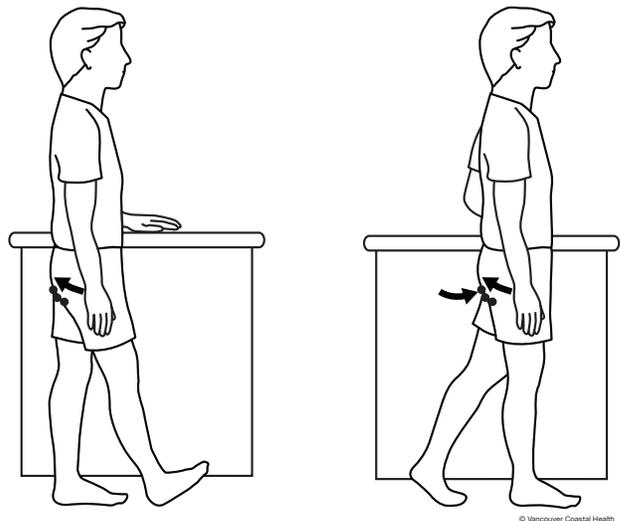
- Stand beside a stable support
- Rest one heel in front of the other foot
- Turn on core and lower buttock muscles
- Rock your weight forward and backward through the balls of your feet, staying tall

Repeat 6 – 8 times, 3 times a day

Repeat with other heel forward

To progress:

Remove hand support, step forwards and backwards, do not let hips drop or hitch as you step through

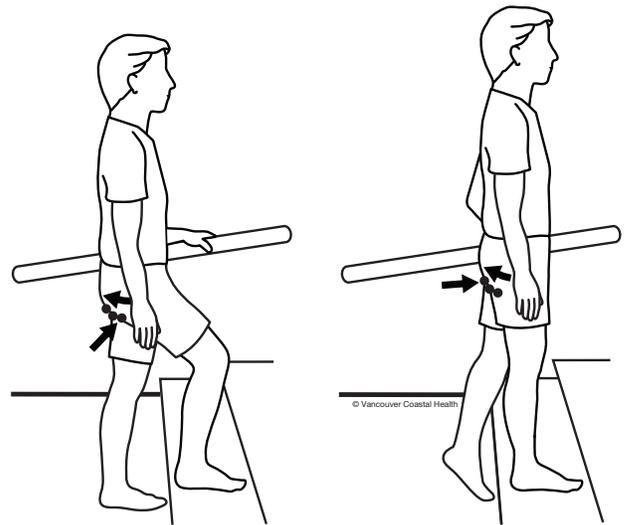


37. Step up/down, forward

- Use railing for balance
- Turn on core muscles
- Place one foot up on step
- Step up by lifting body with lower buttock muscles
- Lower back down onto bottom step
- Keep hips level at all times
- Avoid pulling with arms

Repeat 8 – 15 times,
3 times a week

Repeat on other side

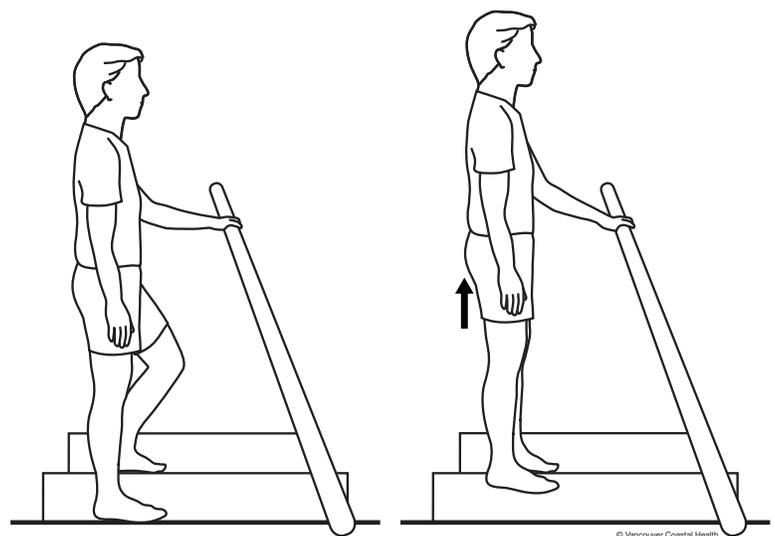


38. Step up/down, sideways

- Stand facing railing
- Place one foot up on step
- Step up sideways through the hip, using lower buttock muscles
- Use buttock muscles to lower down, bending at the knee
- Do not bend or lean forward

Repeat 8 – 15 times,
3 times a week

Repeat on other side,
using opposite railing



39. Balance board

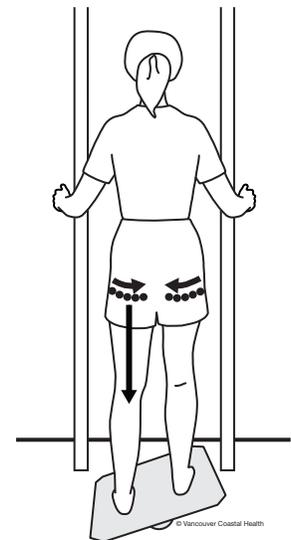
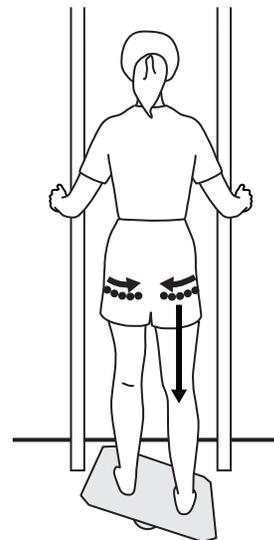
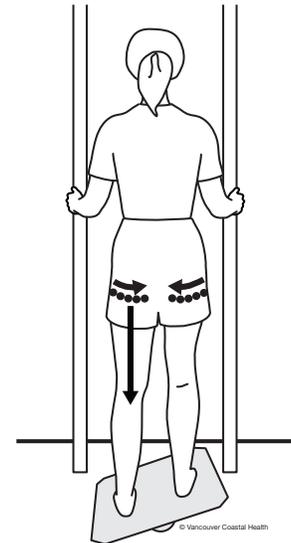
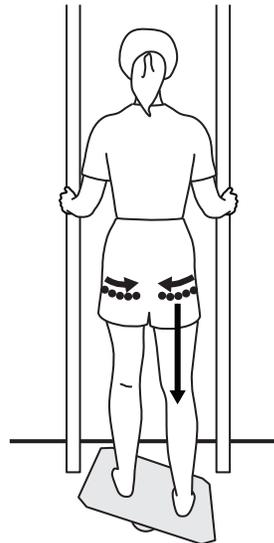
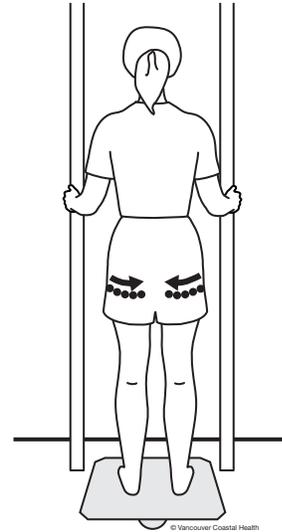
Always do balance exercises in a way that you feel safe!

39a. Side to side

- Hold onto bar or front of kitchen sink for support and step onto balance board or pillow
- Center your feet, shoulder width apart
- Turn on core and lower buttock muscles
- Practice feeling stable
- Then, tip board (or pillow) down on one side by pushing through the heel with buttock muscle, bending the opposite knee
- Keep hips level

To progress:

Take hands off support but keep them close, use core and buttock muscles to keep pelvis level and balance stable

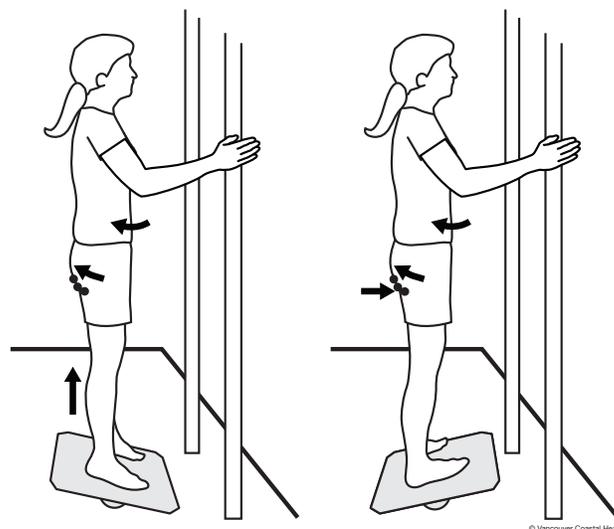
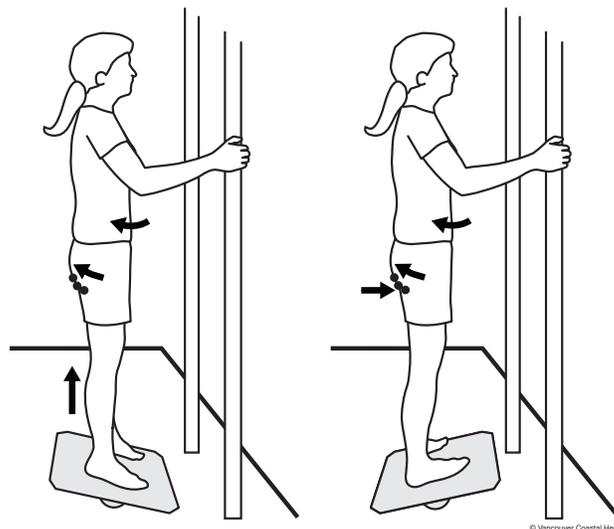
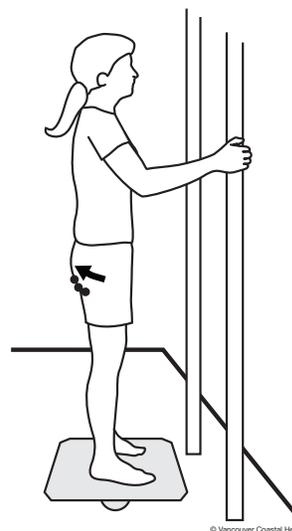


39b. Forward and backward

- Start as you did 39a
- Then, tip board (or pillow) front to back
- Keep pelvis level

To progress:

Take hands off support but keep them close, use core and buttock muscles to maintain level pelvis and balance



Exercise Guidelines: 3 Months – 1 Year

Aerobic activity

Regular physical activity will increase the life of your joint replacement.

Regular exercise will help you to:

- Increase fitness and endurance
- Reduce risk of falling
- Increase muscle strength
- Improve bone quality and strength
- Maintain a healthy weight (because extra weight puts stress on your joint)
- Reduce risk of other health conditions, including Type 2 diabetes, heart disease and stroke

The Canadian Physical Activity Guidelines: Adults of all ages benefit from 30 minutes of aerobic activity, 5 days each week. You can do 10 minutes, three times in the day to total 30 minutes.

Following joint replacement, try to do activities that have low risk of injury and do not require you to learn new skills. Pick activities that are fun and have indoor and outdoor options. (See activity recommendations on page 37).

Typical hip joint loads during exercise

Different activities put different loads on your hip joints. This table shows typical joint loads at the hip joint with common activities.¹

Activity	Hip joint load (times body weight)
Cycling (high resistance)	1.4
Downhill skiing - long turns and flat slopes	4.5
Walking at 5 km/h (3 mph)	4.7
Jogging at 12 km/h (6 mph)	6

For more information about being physically active after hip replacement surgery, see pages 37 – 39.

¹ Kuster M. Exercise recommendations after total joint replacement. Sports Med 2002; 32 (7): 433-445

Strength training

Long term exercises to strengthen will help you with day-to-day activities such as climbing stairs and balance. It will also protect your replaced joint and other joints that have arthritis. Strong muscles help keep bones strong. Your operated leg will take up to a year or more to regain normal strength and control.

In order to strengthen muscles, exercises need to be challenging and done often enough to produce a “training response” in your muscles. Your physiotherapist will advise you on what level to start at and how to progress the exercises to ensure ongoing benefit.

Guidelines: Muscles are sufficiently challenged when you feel...

- Muscle fatigue (you cannot do one more repetition)
- Unable to move the limb through full range of movement
- Your muscle begins to shake
- Do 8 – 15 repetitions of an exercise. Your muscle should feel tired by the last repetition. One set done well is enough to improve strength
- If you cannot do 8 repetitions of an exercise well, you need to make the exercise easier
- If you can complete 1 set of 15 repetitions over 2 strengthening sessions you can progress the exercise (make it harder) by:
 - Adding more resistance (e.g. 2 – 3 lbs weight or a different colour elastic band)
 - Moving your joint through a greater range
 - Doing the exercises slower or at different speeds
- To maintain current strength, train 2 days a week
- To increase strength, train 3 days a week
- Always rest the day after strengthening exercises. This lets muscles recover. Avoid strength exercises for the same muscles more than 4 days a week

Neuromotor and balance training

Some of the exercises, such as those to turn on your core muscles or improve your balance and coordination, are done differently. These ‘neuromotor control’ exercises are done more often with little or no added resistance. These exercises train the connection and coordination between your muscles and nervous system. They also contribute to better balance during daily activities and decrease the risk of falling.

Guidelines:

- Do 6 – 8 repetitions of an exercise
- Do the exercises 3 times a day
- Always have a firm counter or railing within reach when doing balance exercises, you will get visual feedback if you do balance exercises in front of a mirror
- To improve balance, keep your core muscles and lower buttock muscles turned on
- With guidance from your physiotherapist, you can challenge your balance by:
 - Walking in water (forwards, backwards, sideways)
 - Standing with feet close together or one in front of the other
 - Standing on one foot and closing your eyes
 - Standing on an uneven surface like a couch cushion
 - Standing on a Bosu ball, wobble or rocker board (advanced exercises)
 - Doing Tai chi

Flexibility training

If you had tight or shortened muscles before surgery it may take longer to regain the movement in your joint. Stretches can be done in different ways. Ask your physiotherapist how to change a stretch if it doesn't work for you.

Guidelines:

- Stretch when muscles are warm, for example, after exercises or a walk, warm muscles are easier to stretch
- Hold the end of stretch for 30 seconds, relax and breathe slowly, repeat 3 to 4 times
- Ensure that you feel a gentle stretch in the muscle or tissue being stretched, if you don't feel a stretch you won't improve your flexibility
- Stretch at least 3 days a week

Leisure and Sport After THR

Surgeons were surveyed and made these recommendations for recreational and sport activities after hip replacement surgery.

NOTE: This is only a guideline and you should check with your surgeon, physiotherapist or other healthcare professional for specific advice.

Allowed	Allowed with Experience	No Consensus	Not Recommended
Speed walking	Ice skating	Singles tennis	Jogging
Swimming	Cross-country skiing	Handball	Basketball
Road cycling	Downhill skiing	Rock climbing	Football
Golf	Stationary skiing	Volleyball	Soccer
Hiking	(cross-country ski machine)	Tai Chi	Baseball
Canoeing/Kayaking	Doubles tennis		High impact aerobics
Square dancing	Horseback riding		Martial Arts
Ballroom dancing	Rowing		Squash
Bowling	Pilates		Hockey
Sailing	Inline Skating		
Low impact aerobics			
Water aerobics			
Weight training			

More information in the booklet *Get moving: Maximizing your activity after a hip or knee replacement* www.orthoconnect.org.

Helpful Resources

Internet resources

- To find a physiotherapist in your community:
Physiotherapy Association of BC (PABC) www.bcphysio.org
- The Arthritis Society www.arthritis.ca
- My Joint Replacement www.myjointreplacement.ca
- Osteoarthritis Service Integration System (OASIS) www.vch.ca/oasis
- Canadian Orthopedic Foundation www.canorth.org
Get Moving: Maximizing Your Activity After a Hip or Knee Replacement
http://www.canorth.org/Assets/pdfs/GetMovingBrochure_ENG%20FINAL.pdf
- Canadian Physical Activity Guidelines for Adults and Older Adults
<http://www.csep.ca/english/view.asp?x=804>
- American Academy of Orthopaedic Surgeons (AAOS)
www.orthoinfo.aaos.org
- National Institutes of Arthritis and Musculoskeletal Diseases
www.niams.nih.gov/health_info/Hip_Replacement/default.asp

Please note: This is not complete list of resources you can find on the Internet. When looking for more information, you can visit sites that are government (.gov), university or professional organizations (.org). Not all information on the internet is correct or trustworthy.

Book

- *Before During and After Hip and Knee Replacement Surgery*: 2008, developed by OASIS at Vancouver Coastal Health in partnership with staff from all BC Health Authorities. Ask your surgeon for a copy or go online at <http://vch.eduhealth.ca/PDFs/FB/FB.130.B393.pdf>

DVD

- *A Patient's Guide to Joint Replacement Surgery*: 2007, from Fraser Health Authority, moderated by Vicki Gabereau.
http://www.fraserhealth.ca/your_care/hospital/surgery/preparing_for_surgery/videos/

Community Exercise Programs After THR

Things to consider when choosing a community exercise program

- Is the centre easy to get to by bus or is parking close by
- Is the exercise area easy to get to and move about it
- Are the costs reasonable
- Will they let you watch a session before you decide to join
- Does it have a good selection of equipment that is in good condition
- Do instructors have training with people with THR
- Do instructors talk to or share information with local physiotherapists or other rehabilitation professionals

Contact the Arthritis Society to learn about “arthritis friendly” exercise programs in your region, (info@bc.arthritis.ca), 604-875-5051 (lower mainland) or 1-800-321-1433 or check the list below.

City	Facility Address	Phone number
Burnaby	Seton Villa 3755 McGill Street	604-817-6540
Campbell River	Strathcona Gardens Pool 301-990 Cedar Street	250-287-9234 ext. 236
Comox Valley	Comox Valley Region District Aquatic Center 377 Lerwick Road, Courtenay	250-334-9622 ext. 225
Kaslo	St. Andrew’s Heritage Hall 500 4th Street	250-353-2936
Langley	W.C Blair Recreation Centre 22200 Fraser Highway	604-533-6170
North Vancouver	Harry Jerome Community Recreation Centre 123 East 23rd Street	604-983-6406
Qualicum Beach	Qualicum Beach Physiotherapy #1 140 West 1st Avenue	250-752-3212
Richmond	Watermania 14300 Entertainment Blvd.	604-448-5353
Salmon Arm	Salmon Arm Recreation Centre 2550 10th Avenue NE	250-833-3636 ext 2243
Vancouver	Maximum Cardio Core Studio 3433 East Hastings Street	604-817-6540
Vernon	Vernon Recreation Centre 3310 37th Avenue	250-545-6035
West Vancouver	West Vancouver Aquatic Centre 2121 Marine Drive	604-925-7231

Post-Operative Hip Exercise Log

	Week Of							Week Of							Week Of						
	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
Core Stability Exercises																					
1a. Pelvic floor																					
1b. Lower abdominal																					
After Surgery: weeks 0 – 3																					
2. Arm chair push-ups																					
3. Foot and ankle pump																					
4. Breathing																					
5. Core: heel slide																					
6. Buttock squeeze: a) lying; b) sitting																					
7. Knee Straightening																					
8. Leg slide out																					
9. Hip stretches																					
10. Hamstring stretch																					
11. Calf stretch																					
12. Hip lift (bridge)																					
13. Hip bend																					
14. Hip extend: a) straight; b) knee bend; c) swing; d) progression																					
15. Knee bend: standing																					
16. Weight shift, side to side																					

Graphic images adapted from:
Visual Health Information
Therapy Skill Builders
Physio Tools

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email phe@vch.ca and quote Catalogue No. **FB.863.EX.37**
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