



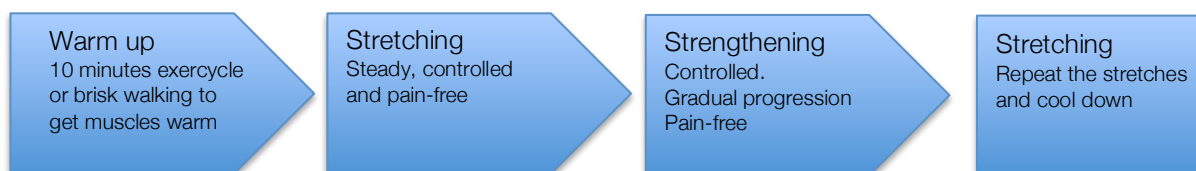
HIP CONDITIONING PROGRAM

This hip conditioning program is designed to help you rehabilitate from your hip injury. In some cases, the program is being used as *pre-habilitation*, that is strengthening you prior to going through surgery to speed your recovery.

This is a general conditioning program that provides a wide range of exercises. Some of them won't be suitable for you due to your injury; others you may initially find too difficult until you have gained strength with easier exercises

The conditioning program should be continued for a minimum of 4 to 6 weeks, unless otherwise specified. After your recovery, these exercises can be continued as a maintenance program for lifelong protection and health of your hips and thighs. Performing the exercises two to three days a week will maintain strength and range of motion in your hips and thighs

Steps of each rehabilitation session:



Do not ignore pain: You should not feel pain during an exercise. There is no benefit in trying to push the hip beyond what is comfortable, either in stretching or strengthening exercises. You risk further injury and setting back your progress.

Conditioning program:

Below is a suggested framework for progressing through the exercises over a six week period. This may be modified to suit your injury and progress. Discuss your specific program with your physiotherapist or doctor.

Exercise	Week:	1	2	3	4-5	6+
Active motion exercises						
1, 2, 3		•	•	•		
4, 5, 6			•	•	•	
7, 8				•	•	•
Strengthening						
Gluteal progression		•	•	+ clamshells	•	•
Hip flexor progression		•	•	•		
Lateral planks			•	•	•	•
Bridging progression		•	•	•	•	•
Quads progression		•	•	•	•	•
Cable exercises			•	•	•	•
Plyometrics						
Lunges				•	•	
Sport-cord agility						•
Balance & coordination						
Single leg stance progression		•	•			
Cup walking progression		•	•	•		
Bosu progression			•	•	•	•
Theraband walking patterns					•	•

*Progression exercises:*

When the exercises are “progressions”, a series of exercises are described. The idea with these is to start with the easy ones (listed first) and then progress onto the harder ones and stop the easy ones. Variations on exercises are also listed so you don’t get bored.

Discomfort and setbacks:

Perform strengthening exercises equally on both legs, not just the problematic one. After exercising, your hip may feel fatigued and ache. This is okay, but severe discomfort is not. Using an ice pack and anti-inflammatory medication is okay as part of your rehab after exercising. If still having significant discomfort that lasts into the next day in spite of this, back off on the intensity and/or number of repetitions of exercises you are doing.

Hip rehabilitation is not linear. There will be setbacks when the hip becomes more painful and “grumpy”. You must be prepared to reduce training and give the hip a rest. Paracetamol and/or an anti-inflammatory may be necessary.

Ask questions: If you are not sure how to do an exercise, or how often to do it, contact your doctor or physical therapist.

When can I return to sport?

This is a simple question with a complicated answer. The answer depends on what sort of sport you participate in. Some sports do not require significant core or hip strength in order to perform safely. These include swimming and cycling. You may return to these sports rapidly, as long as you do it carefully, building up duration and intensity gradually.

Criteria for full return to competition:

- Full range of hip motion
- Hip strength equal to the other side
- Perform single leg pick ups with a level pelvis
- Be able to perform sport-specific drills at full speed without pain
- Completion of functional sport-specific test

Other sports require you to be back to excellent condition in terms of power, endurance and co-ordination, not just of your hip muscles, but also your core and lower leg muscles as well. These sports include soccer, rugby, hockey, netball and basketball. To go back to a ballistic, high-intensity sport in less than top condition is to risk poor performance and further injury. Better to go back over-prepared and find it easy, than to go back to soon and end up frustrated and disappointed.





HIP STRETCHING EXERCISES: (AFTER WARMING UP)

Standing iliotibial band (ITB) stretch:

You should feel this stretch at the outside of your hip

Stand next to a wall for support.

Cross the leg closest to the wall behind the other one. Lean your hip towards the wall until you feel a stretch on the outside of your hip. Don't lean forward or twist at the waist, it is a sideways bending motion.

Hold for 30 seconds. Repeat on the other side. Repeat the entire sequence 4 times.



Seated rotation stretch: (piriformis)

You should feel this stretch in your buttocks, as well as at your side

Sit on the floor with straight legs and cross one leg over the other. Slowly twist towards the bent leg, putting your hand behind you for support. Place your opposite arm on the bent leg and use it to increase the twist. Look over your shoulder and hold the stretch for 30 seconds. Keep your sit bones pressed to the floor throughout the stretch. Slowly return to the centre, change legs and repeat on the other side.

Repeat the sequence 4 times.



Knee to chest: (gluteus maximus and medius)

You should feel this stretch in your buttocks

Lying on your back on the floor with your legs straight.

Bend one knee and grasp your shin. Gently pull your knee towards your chest as far as it will go. Keep your other leg flat on the ground.

Hold for 30 seconds, and then relax for 30 seconds and repeat on the other side. Then pull both legs in together.

Repeat the entire sequence 4 times.



Hamstrings:

You should feel this stretch in the back of your thigh.

Lie on the floor with bent knees. Bring one knee towards your chest and grasp it behind the thigh with both hands.

Straighten your leg and pull it gently towards your head. If you can't reach easily, use a towel around your leg.

Hold for 30-60 seconds and then release and do the other leg.

Repeat the entire sequence 4 times.



Standing quadriceps stretch:

You should feel this stretch in the front of your thigh

Hold the back of a chair or a wall for balance

Bend your knee and bring your heel up toward your buttock. Grasp your ankle and gently pull your heel closer to your body

Hold the position for 30-60 seconds and repeat with the opposite leg

Repeat the sequence 4 times.





RANGE OF MOTION EXERCISES

1. *Standing circumduction exercises:*

Standing on your unaffected leg, keep your affected leg nearly straight and move it forwards, then outwards, then backward and finally back to the starting position to describe a circular motion. Make the circles as wide as you comfortably can. Repeat 10 circles in each direction.

2. *Quadruped rocking*

Position yourself on hands and knees as shown.

Gently rock back (flexing knee and hips) as far as comfortable, then forwards again. You may also shift from side to side and do diagonal movements as well.

3 sets of 20 repetitions.

<http://www.coreperformance.com/knowledge/movements/hip-flexion-quadruped-rocking.html>



3. *Kneeling knee flexor stretching*

Kneeling on the knee of your operated leg as shown.

Keep your trunk upright and shift your weight forward, feeling the stretch across the front of the thigh.

Hold for 30 seconds then release. Repeat 4 times.

<http://www.coreperformance.com/knowledge/movements/quad-hip-flexor-stretch-kneeling.html>



4. *Standing hip rotations*

This requires a rotating stool or similar.

Standing with your knee bent to 90° and resting lightly on the stool. Use your hip muscles to rotate the hip inward, without moving your trunk or pelvis. Go as far as you comfortably can. Hold for 5 seconds, then return to the start position and rotate the hip outwards in the same manner.

Repeat 3 sets of 10 repetitions each direction.



5. *Reverse butterflies*

Start lying on your back with your feet and knees slightly wider than shoulder width apart and toes pointed inwards.

Rotate your thighs inward to touch your knees together.

Hold for 5 seconds and return to the starting position. Repeat 10 times





6. Butterflies

Start in the same position as for reverse butterflies, but have feet slightly closer together.

Slowly allow your knees to fall outwards, until you feel a stretching in your groin, or they won't go any further – whichever comes *first*. Hold for 5 seconds, then return to start point.

Repeat 10 times.



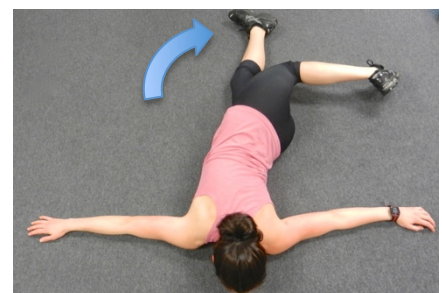
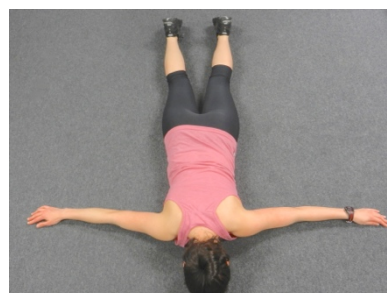
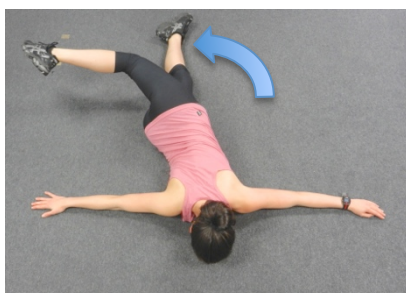
7. Prone knee extension

Lying face down, with a foam roller or firm bolster under your foot as shown. From the start position (A) tighten your gluteal muscles and quads to straighten your legs and lift your pelvis from the floor. Hold for 10 seconds and relax. 10 repetitions.



8. Scorpions

Start lying face down on the floor with your arms outstretched. Keeping your shoulders as flat to the floor as possible, bring the leg and hip up across the opposite leg rotating the hip, pelvis and spine. Return to start position and repeat with the opposite leg. 3 sets of 10 repetitions





GLUTEAL MUSCLE PROGRESSION

1. *Standing abduction*

Standing on your uninvolved leg. Turn your operated leg inward so your foot is pointing across your body. Keeping your leg straight, lift it outward to the side, Keeping your pelvis level. Hold for 5 seconds and relax. 3 sets of 20 repetitions.



2. *Lateral leg raises*

Lying on your uninvolved side with your lower leg bent for balance, raise your top leg towards the ceiling and slightly back without moving your trunk. Hold for 5 seconds and relax. 3 sets of 10 repetitions.



3. *Prone extensions*

Lying face down, keep your knee straight and raise your whole leg towards the ceiling, hold for 5 seconds and relax. 3 sets of 10 repetitions.



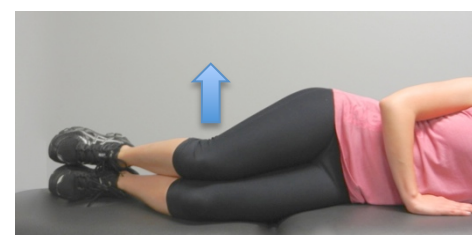
4. *Prone heel squeeze:*

Lying face down, separate your legs so your knees are about 30cm apart. Bend your knees and bring your heels together. Squeeze your heels together without moving your knees and extend your hips to lift your knees off the bed toward the ceiling while squeezing. Keep the pressure on for 5 seconds, then relax. 10 repetitions.

CLAMSHELLS

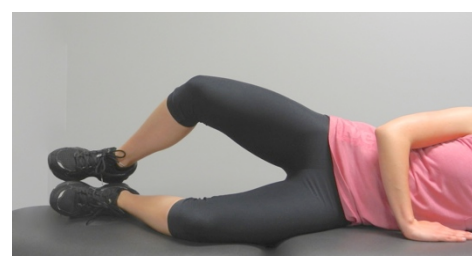
Stage 1

Lying on your side, with your knees and hip flexed. Keeping your feet together, lift your upper knee towards the ceiling, then relax back to the starting position. Aim for 100 repetitions.



Stage 2

Progress the clamshell by using a theraband around your knees to provide resistance. Again, aim for 100 repetitions.

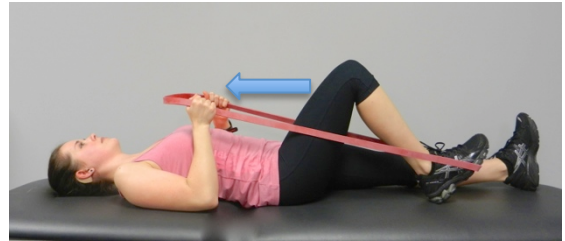




HIP FLEXOR MUSCLE PROGRESSION

1. Assisted motion heel slides

Lying on your back, with a strap placed around your foot. Use your arms to pull your heel towards your buttock. Keep your heel on the mat and your core stable. Hold for 5 seconds then slowly lower. 3 sets of 10 repetitions.



2. Heel slides

Dispense with the strap and continue the same motion with your foot. Keep your other leg flat on the bed and keep your pelvis stable. (Monitor for hip flexor pain and increase strap use if needed to avoid pain) 3 sets of 10 repetitions.



3. Marching

Active heel slide and then flex your hip to bring your foot off the floor until your hip is flexed to 90°. Keep your core stable throughout the movement by tightening abdominal muscles. Avoid allowing your pelvis to flex. Hold in this position for 5 seconds and slowly return to starting position A. 3 sets of 10 repetitions.



4 POINT KNEELING PROGRESSION

1. 4 point rocking

On hands and knees, shift your weight forward onto your arms, then back onto your legs. This is one repetition. You may also shift side to side in a diagonal motion as a variation.



2. 3 point rocking

Lift one leg and extend the hip and knee. Repeat the forward and back rocking as described above. Swap legs and repeat

3. 2 point rocking (shown)

Lift one leg and the opposite arm. Repeat the forward and back rocking as described above. Swap to the other leg and arm and repeat.





BRIDGING (PLANKING) EXERCISE PROGRESSION - SUPINE

1. Double leg

Lying on your back, place a rubber ball or foam block between your knees (size should be enough to keep your hips neutral) with your hips and knees bent.

Gently squeeze the ball and raise your buttocks off the floor until your trunk and thighs are in a straight line. Slowly lower to the floor.

2. Double leg with abduction

Using the same motion as in stage 1, however don't use the ball. Instead. Place a strap around your knees with your hips at neutral and push out hard against the strap when lifting your pelvis

3. Single leg

Similar set up to stage 1, but have one leg straight and don't use a ball. Use the bent leg to raise your trunk. Avoid your pelvis twisting or sagging.



VARIATIONS:

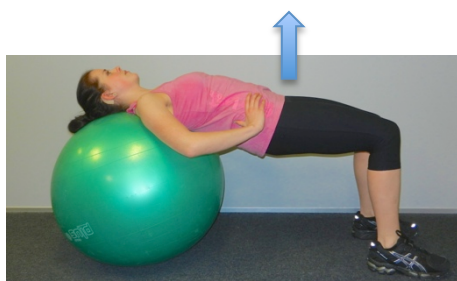
Swiss ball

Begin this exercise lying on your back with your feet on a Swiss ball as demonstrated. Keeping the Swiss ball still, slowly lift your bottom pushing through your ankles and heels, until your knees, hips and shoulders are in a straight line. Tighten your bottom muscles (gluteals) as you do this and hold for 2 seconds. Then slowly lower back down.

Aim for 3 sets of 10 repetitions provided the exercise is pain free.

Swiss Ball Single Leg Bridge

Lying on your back with a Swiss ball under your shoulder blades and your feet slightly apart as demonstrated. Keeping your back straight and the Swiss ball still, slowly straighten one knee and then return to the starting position. Then, repeat with the other leg. Aim for 3 sets of 10 repetitions.



**BRIDGING (PLANKING) EXERCISE PROGRESSION - PRONE****1. Easy prone plank**

If you are struggling with the prone plank, it can be made easier by bending your knees to 90° and pivoting around them, rather than your feet. Hold for 30 seconds, then relax. Repeat 3-5 times

Prone plank

Lying face down, place your elbows on the ground in front of you.

Lift your pelvis off the ground by tightening your abdominal muscles. Avoid allowing your back to arch by keeping your pelvis tucked in. Hold this position for as long as possible provided it is pain free and you are maintaining good posture. Repeat 3 times.

Variations:**Swiss ball**

Begin with your forearms on the floor, your back straight and your feet on a Swiss ball as demonstrated. Hold this position for as long as possible provided it is pain free and you are maintaining good posture. Repeat 3 times.

Swiss Ball press up and prone leg lift

Begin with your hands on the floor, your back straight and your feet on a Swiss ball as demonstrated. Straighten your arms into a press up. Hold the posture as long as possible, then return to the starting position.

Repeat 3 times

To progress the exercise, slowly lift one leg keeping your knee straight and the Swiss ball still. Slowly return to the straight arm position and repeat with the other side.

Swiss Ball Jack-knives

Begin this exercise with your hands on the floor, your back and arms straight and your feet on a Swiss ball. Keeping your back straight, slowly bring your knees towards the floor while maintaining a slight curve in your lower back until your knees are below your hips. Slowly return to the starting position. Aim for 2-3 sets of 10 repetitions provided the exercise is pain free and you are maintaining good posture.





BRIDGING (PLANKING) EXERCISE PROGRESSION - LATERAL

1. Modified (easy) side planking

Lie on your side with your knees bent.
Prop your upper body up on your left forearm with your elbow under your shoulder. Brace your core and raise your hips until your body forms a straight line from your ankles to your shoulders. Your head should stay in line with your body.
Hold this position for as long as possible while maintaining good posture.
Swap sides and repeat. 3 repetitions on each side.



2. Side plank

Lie on your side with your knees straight.
Prop your upper body up on your left forearm with your elbow under your shoulder. Brace your core and raise your hips until your body forms a straight line from your ankles to your shoulders. Your head should stay in line with your body.
Hold this position for as long as possible while maintaining good posture.

Swap sides and repeat. 3 repetitions on each side.



3. Single leg side plank

Start in the raised position of the side plank. Maintaining this position, without letting your hips sag, slowly lift your top leg as high as you can, hold briefly and then return to the starting position. Repeat 10 times.

Swap sides and repeat. 3 set of 10 repetitions on each side.

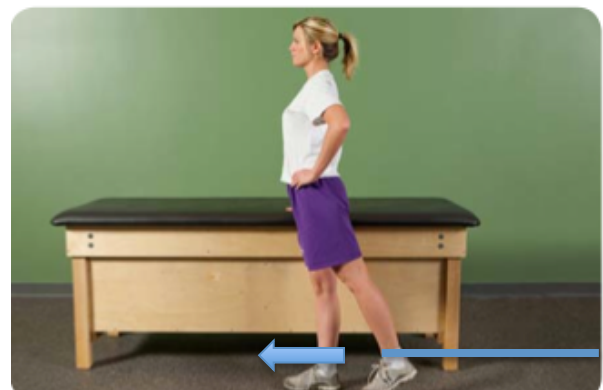


CABLE EXERCISES

Attach a cable machine around your ankle to provide resistance. The cable pull should be directly in the line of the movement to provide resistance to the motion and have enough resistance to make the last few reps in each set hard work.

Start in the position shown on the left to perform adduction movements, then turn 90° for flexion. Turn another 90° for abduction, then another 90° for extension to complete the set. Aim for 3 sets of 10 repetitions in each movement.

Nb: If you don't have access to a cable machine, theraband or sportscord works well.





QUADS EXERCISE PROGRESSION

1. Minisquats to single leg squats

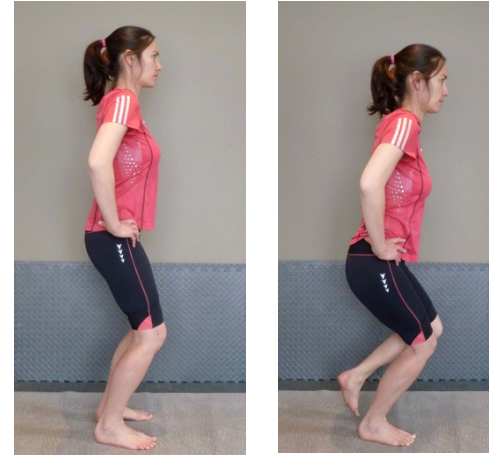
Start in full extension and bend slowly to a maximum of 40° (left picture). Rise back up to the starting position.

3 sets of 10 repetitions.

Once performing double leg minisquats without any problems, shift your weight over towards your operated leg to increase its workload.

Aim to progress until you are on a single leg (use a wall or chair for balance). To progress this exercise, increase the amount your knee flexes as far as 70° (right picture). Make sure your knee does not collapse towards the midline and your hips remain straight.

[Check correct form on www.youtube.com "How to, and how not to, so a single leg squat"]



2. Wall squats

These can be done against the wall directly, or leaning against a swiss ball as shown here.

Start with your legs straight and back flat against the wall or swiss ball. Slide down the wall until your knees are flexed to 90°. Hold the posture as long as possible, then return to the starting position. Repeat 3 times.

To progress this exercise, perform it on a single leg.



3. Split squats

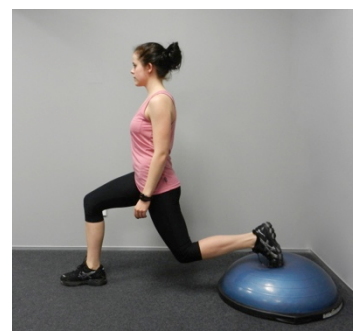
This is a static version of a lunge. Place one foot about 2 feet in front of the other, move forward and down by flexing your front hip and knee, while keeping your trunk upright. Hold for 5 seconds, then return to the starting position.

3 sets of 10 repetitions on each side.



4. Balance split squats

Progress split squats by placing your rear foot on a bosu ball, or low bench. Don't let your back knee touch the floor



5. Back in the gym

In the gym, closed chain exercises, such as leg press, using free weights to add resistance to split squats etc. Avoid deep flexion of the hips for the first 8-10 weeks after surgery. No trying to push massive weights. Building endurance and muscle strength is the key. Weight should be adequate that you feel muscle fatigue is the last part of you set.



PLYOMETRICS

These are exercises that use dynamic movements to help strengthen muscle power and postural stability. They are an important stepping stone in getting back to sports requiring explosive movements or rapid changes of speed or direction.

Prior to starting plyometric exercises you must be able to comfortably perform single leg squats and balance split squats with good form.

1. Lunges

Starting with your feet together, step forward, further than a long stride length, transferring your weight onto the other leg, bending both hip and knee to absorb and control the motion. Keep your knee in line with your foot and hip. Avoid flexing your knee past your foot. Push back up to return to the starting position.

With each movement aim for 3 sets of 20.



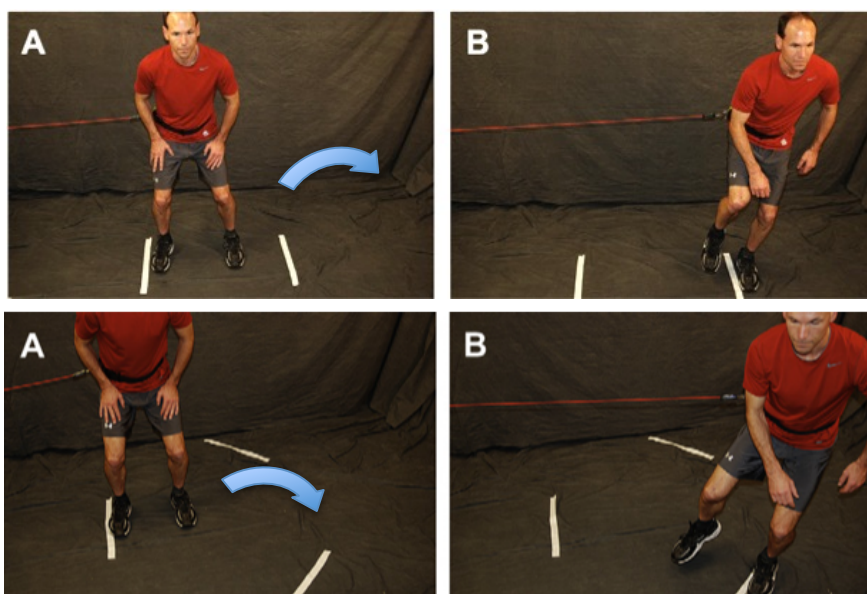
Once doing forward lunges comfortably, add in (A) side lunges, (B) backward lunges and (C) diagonal lunges. [To see video of these exercises, go to www.youtube.com and search "Michelle Trapp Livestrong lunges"]

2. Sport cord agility jumps

Using a Sport-cord or theraband secured to a waist strap at one end and a wall at the other.

Place a line on the ground where the cord has no slack, and another 75-100cm away. Jump laterally off the leg nearest the wall, landing on the other leg, outside the second line. The increase in cord tension will pull you back. Absorb the landing in a controlled squat in front of the first line. Repeat as many repetitions as possible in 30 second sets, gradually increasing up to 90 seconds.

Progress the exercise with forward and backward diagonal agility jumps in the same way.





BALANCE AND COORDINATION

1. Early standing exercise

Using a wall or chair for balance, take your weight on your operated leg and stand with knee as straight as possible. Hold for 30 seconds and relax. Aim for 3-5 repetitions with 1-2 min rest between. Once comfortably performing this, take your hand away from the support and repeat.

2. Single leg stance exercise

If comfortable with early standing exercise, progress by flexing your knee to 30° and then straightening it again. 3 sets of 10 reps.

3. Cross-country skiing

Once comfortable with single leg stance exercise, intensify it by swinging your other leg back and forward to mimic a cross-country skiing action. 3-5 sets of 10 reps



3. Functional stance

In single leg stance, perform the following actions.

1. Perform arm circles in both directions
2. Raise other knee and swing it back and forward
3. Lean body forward, backward and to each side while maintaining balance

Aim for 30 seconds in each action, while maintaining balance

4. Wobble board/ Bosu ball

Start with double leg wobble board or Bosu ball with feet wide apart.

Initially, aim to keep balanced with the edges of board off the ground for 30 sec.

Once successful, progress to placing feet closer together, then move to single leg stance.

Once comfortable, progress to doing functional stance exercises on the Bosu ball.

5. Single leg pick-ups

Start in single leg stance, the lean forwards extending your other leg backward and reach down to mimic picking something off the ground outside the foot you are balancing on. Keep your abdominal muscles engaged and your pelvis square throughout. Do sets of 10 repetitions on each side.

To progress this exercise, use a dumbbell or kettlebell weight to pick up and replace. Also place the weight in front of you, or on the other side.



Functional balance



Bosu



Single leg pick-ups



GAIT PROGRESSION AND RUNNING

1. Cup walking exercises

This exercise is designed to help you redevelop symmetry between your operated and normal sides during walking. Working in front of a mirror, place cups or similar in about one stride (80cm) apart as shown. Slowly step over each cup, concentrating on keeping your pelvis level and remaining in balance throughout. To progress cup walking, do lateral (not cross-over) and backwards walking.



2. Theraband walking patterns

Using a theraband for resistance, practice walking patterns. Forwards, backwards, side-stepping, angles, circles in both directions and carioca [www.youtube.com search "miniband carioca walk"] Start with the band at knee height and progress it to your ankles for more resistance. Do sets of 20 metres, increasing intensity by adding distance and doing more walking directions in each set.



3. Agility drills

After rehabilitating from any injury, complicated movements such as cutting and pivoting need to be practiced before returning to the sports field. Once jogging is mastered you can try agility drills, practicing "out of plane" movements. This should be attempted no sooner than 16 weeks and only if the hip is feeling good.

[For the details on agility drills – see the rehabilitation booklet: Returning to running sports]