

The best way to strengthen your legs, keep your heart and lungs fit and your energy levels high in preparation for surgery is to walk regularly. Don't be afraid to walk in the months and weeks leading up to your surgery – it won't harm your knee or hip joint.

Follow the "two-hour" pain rule: If your joint hurts for longer than two hours after your walk, you have done too much. Do what you can to manage the pain and walk a bit less the next day. If weight bearing activity is limited by pain, consider using a bike or doing water exercises. Bicycling maintains mobility and joint lubrication, strengthens your quadriceps muscles, and provides a cardiovascular workout.

Besides walking, your surgeon may recommend that you do some regular pre-operative exercises. Some of these exercises are aimed at strengthening your arms and shoulders, which will help you manage crutches or a walker and getting in and out of chairs after surgery. Others will help maintain the strength of your leg muscles.

Before starting any exercise program, check in with your healthcare team to make sure the exercises are appropriate for you. Perform exercises 3 days per week to build strength. Start with 1 set of 8 to 15 repetitions building up to 3 sets of 15 reps.

Heel Raises

- Stand up straight, holding on to a kitchen counter or sturdy table.
- Rise up on your toes by lifting your heels as high as possible.
- Slowly lower your heels back on to the floor.
- Perform up to 3 sets of 8 to 15 repetitions.



Thigh Muscle Contractions

- Lie on your back with your legs straight and toes pointed upwards towards the ceiling.
- Bend one knee and point the foot and toes of your other leg toward your head.
- With the straight leg, tighten the muscles in the front of your thigh and push the back of your knee into the bed.
- Relax, and repeat.
- After 8 to 15 repetitions, switch legs.



Clamshells

- Lie on your side with the affected leg upwards and your good leg on the bed with knee slightly bent
- Wrap a resistance band snugly around your knees. Start with minimal resistance.
- Keeping your heels together, open and close your legs like a clamshell.
- Perform up to 3 sets of 8 to 15 repetitions on the same side, then switch sides.



Bridge

- Lying on your back, bend both knees and place feet flat on the ground or bed.
- Squeeze buttocks and lift your hips upwards and off the bed
- Pause briefly and slowly lower your hips back to the starting position
- Perform up to 3 sets of 8 to 15 repetitions



Mini Knee Bends

- Stand with legs shoulder-width apart and toes pointed forward, holding a table or counter for support. Position a chair behind you.
- Keeping your weight on your heels, slowly bend your knees while aiming your buttocks to the back of the chair as if about to sit.
- Bend your knees and hips equally until you are half-way to the chair and hold that position momentarily. Don't bend your knees past the point where you can no longer see your toes.
- Slowly return to the starting position and repeat 8 to 15 times, for up to 3 sets.



Single Leg Stance

- Stand straight, facing and holding on to a kitchen counter or sturdy table top. If your balance is good, you can instead, stand with your hands on your waist.
- Raise your good leg, bending the knee as you move your foot backwards and upwards towards the buttocks, so that all your weight is on the affected hip.
- Slowly lower your good leg to the floor.
- Perform up to 3 sets of 8 to 15 repetitions on the same side, then switch sides.



Single Leg Press

- Sit in a steady chair and put a towel or resistance band around one foot, holding each end with your hands
- Sitting upright, straighten your knee against the band or towel
- Keep tension on the band or towel while controlling the return of the foot to a bent knee position
- After 8 to 15 repetitions, switch legs.



Knee Extension – Daily Stretch

- Sit on the front edge of a chair with one knee bent and the foot flat on the floor
- Straighten the other leg by sliding the heel forwards on the floor
- Place both hands over the knee of the straight leg, bend at the hip by leaning forward and gently stretching the muscles in the back of the leg
- Hold for 30 to 45 seconds
- Slowly relax the stretch, and repeat on the other side



Benefits of Exercise in Recovery

It is important to continue exercises during the recovery phase of your surgery. Your care team will provide you with appropriate exercises, many of which may be similar to those found here. There are many benefits to exercising during your recovery, including:

Strengthening and stability

The goal of strengthening and stability exercises is to help you regain strength in the muscles around the affected joint and also in the rest of your leg, your trunk, your other leg and both your arms. For most recovery exercises, you may use special elastic bands or tubing for resistance training. If you have ready access to a swimming pool and if your surgeon says it is safe, water exercises may be added to your overall program. A bicycle can also help with strength and endurance.

Increasing your endurance

The goal is to help muscles in your legs, back, trunk and arms work more effectively over longer periods of time. Depending on your surgery, your physiotherapist may suggest you start pedaling on a recumbent bicycle (the type where you lean back against the seat) or upright bicycle.. As you recover, you may progress to a treadmill and to walking outdoors for progressively longer periods of time.

Sources

<https://www.healthline.com/health/total-knee-replacement-surgery/exercises#thigh-squeezes>

<https://myhealth.alberta.ca/Alberta/Pages/phase1-exercises-before-knee-replacement-surgery.aspx>

<https://sunnybrook.ca/content/?page=hip-knee-guide-staying-active-exercise>