

After Total Knee Replacement (TKR)

Patient Information

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Home exercise program

- Your leg muscles may feel weak after surgery because you did not use them much with your knee problems. Surgery corrected the knee problem.
- Your home exercise program will include activities to help reduce swelling and increase your knee motion and strength. This will help you move easier and get back to doing the activities you enjoy.
- Your success with rehabilitation largely depends on your commitment to follow the home exercise program as developed by your Surgeon. It is important that you take time to exercise every day. The exercise program will take approximately 30 minutes to complete and should be done two to three times per day.
- Recovering from a partial or total knee replacement and returning to a more active lifestyle will take time. It is important to be patient, to be an active participant in your exercise program, and to strictly follow the guidelines outlined in this document.
- Important Information Now that you are home, you must keep working on bending and straightening your leg, as well as help increase the range of motion of your knee. This will enable you to walk, climb stairs and curbs, and sit on chairs or on the toilet.
- It will take approximately six months for the swelling in your knee to go down. Therefore, it is important to ice your knee 3-4 times per day for at least the first six weeks after surgery. This should be done for 10-20 minutes at a time. The best time to ice is after you exercise or do a lot of walking. To ice, you can use storage sized Ziplock bags filled with ice, or two large (10" X 14") gel packs, which can be purchased at a surgical supply store. The best way for icing your knee is with the knee extended, i.e., straight with a towel rolled under your ankle.
- Try not to sit for more than 45 minutes at any given time because your knee may become stiff and/or swelling of the entire leg may occur. If you wish to sit for longer periods of time, i.e., watching a movie or TV., you should stand and walk a short distance and attempt to bend and straighten your knee several times.

- Do not sleep or sit with anything under your knee, i.e., a pillow.
- If at any time you notice persistent fever, swelling, pain, or drainage from your wound, immediately call your surgeon.
- It is important that all physicians and dentists caring for you to know that you have a joint prosthesis. You will require antibiotics before and after any invasive procedures or dental work to protect against infection.
- Your new knee may activate metal detectors in airports and department stores.

DO NOT HOLD YOUR BREATH WHILE EXERCISING

****THESE EXERCISES ARE MOST IMPORTANT FOR YOUR KNEE****

Swelling

It is important to try to keep your swelling down after surgery. You will be able to do this by:

- lying flat with your leg at the level of your heart
- putting a cold pack on your knee
- actively pumping your muscles through ankle pumps
- balancing activity with rest

Range of motion

It is important to work on your knee motion (bending and straightening) after knee replacement surgery. This will help you walk without a limp and get up and down easier from a chair, toilet or bed.

You will be able to do this by:

- doing knee bending and straightening stretches as directed by your therapist
- sitting with your knees bent during meal times
- not resting with your knee bent over a pillow

Strengthening activities

It is important to work on regaining strength after knee surgery. This will help you get back to doing the things you enjoy.

Walking

It is important to walk often throughout the day. This will help you get back to walking outside and in the community.

You will be able to do this by:

- walking around your home using a front-wheel walker, crutches or a cane (assistive walking device) your therapist instructed you to use
- walking with the "heel-toe" pattern that your therapist taught you (to help keep you from walking with a limp)
- gradually increasing the distance you walk

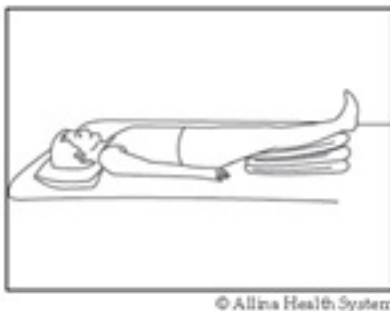
Follow any additional instructions given to you by your surgeon or therapist.

Swelling

Do these activities to help reduce the amount of swelling and improve circulation after surgery.

How often: At least 3 times a day

You will have swelling in your leg and foot after surgery. Your swelling may increase after you leave the hospital. This is common and should gradually go away. It is important to try to keep your swelling down. The activities below will help you with managing swelling and pain.



Lie on your back and elevate your leg using pillows when icing and doing ankle pumps.

Rest and elevate

- Lie down with your surgical leg at or above the level of your heart for at least 20 minutes.
- You may place two to three pillows lengthwise beneath your surgical leg if you have an increase in swelling. Call your surgeon if you are concerned about the amount of swelling you have or if your swelling does not improve.

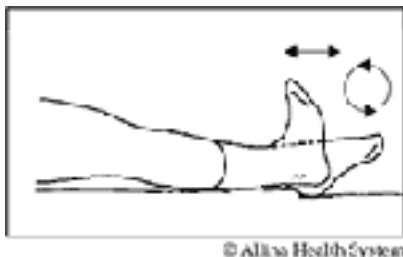
Ice

- While you are resting and elevating, place cold packs around your knee for 15 to 20 minutes at a time.
- Place a clean, dry towel or pillowcase between your skin and the cold pack.



Muscle pumping exercises

Do the following exercises 10 times each while you are lying down resting.



- Ankle pumps and circles
Pump your feet up and down by pulling your feet up toward you, then pushing your feet down away from you. In addition, rotate your feet clockwise and counterclockwise. Ankle pumps should also be done 10 times every hour while you are awake.

Activity

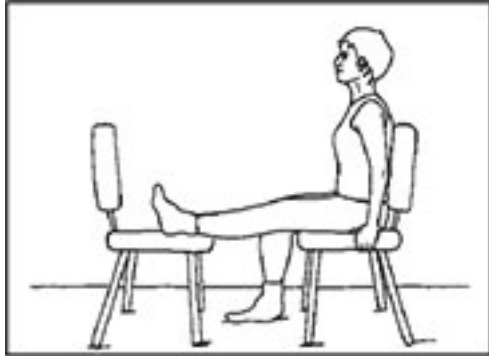
- It is important to gradually increase your out-of-home activity during the first few weeks after surgery. If you do too much activity, your knee may become more swollen and painful.

Important: When your knee is swollen, it will be hard to bend it. Once the swelling goes down, it will be easier to bend and straighten your knee. You will also have less pain.

Range of motion

Do these stretches to increase your knee motion.

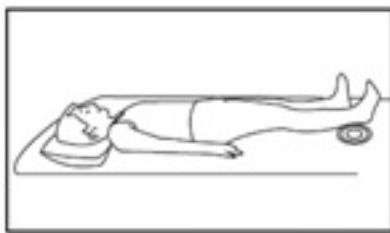
How often: 3 times a day



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Knee straightening stretch (sitting knee extension)

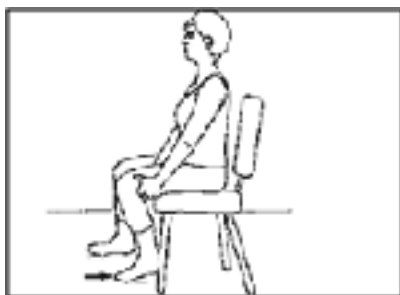
Sit on a sturdy chair with your lower leg on an equal height chair or solid surface in front of you. Relax your muscles to let your knee straighten. You should feel a gentle stretch on the back of your knee. You can do thigh squeezes to increase the stretch. Do this stretch for 5 to 10 minutes.



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You can also do this stretch lying on your bed with a rolled up blanket or towel under your ankle.

Knee bending stretch (sitting knee flexion)



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Step 1: Sit toward the front of a sturdy chair. Bend your knee by slowly sliding your foot back-and-forth, resting briefly as needed. Try to move your foot back farther each time as you are able. You can use your hands to help. Do this for a

few minutes as a warm up. You may want to use a plastic bag under your foot to help it slide easier.



Step 2: Slowly bend your knee back until you feel a gentle stretch. Scoot your body forward on the chair to increase the stretch as you are able. Your heel may lift from the floor but do not lift your hip. Hold for 20 to 30 seconds. Return to the starting position and relax. Repeat 3 times.

The stretching should be more slow and gentle than fast and forceful. Try to keep your muscle relaxed throughout the exercise.

Strengthening

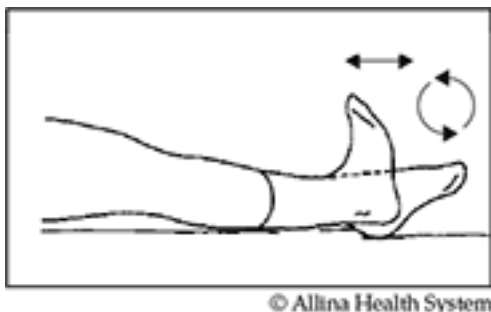
Do these exercises to strengthen your muscles.

How often: 2 times a day

Do 10 repetitions of each exercise. If you are comfortable with the exercises, gradually increase the number of repetitions until you reach 20 repetitions.

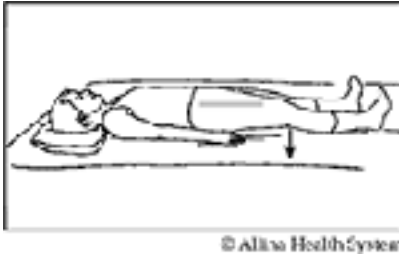
Do your exercises lying down for the most comfort. Your bed is an excellent place to do your exercises.

Ankle pumps and circles



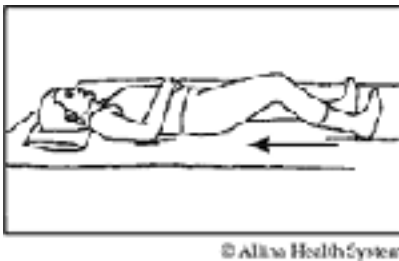
Pump your feet up and down by pulling your feet up toward you, then pushing your feet down away from you. Next, rotate your feet clockwise and counterclockwise.

Thigh squeezes (quadriceps sets)



Tighten the muscles on the top of your thigh by pushing the back of your knee down into the bed. Hold for 5 seconds and relax.

Heel slides (hip and knee flexion)



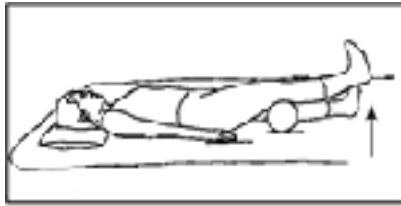
Bend your surgical hip and knee by sliding your heel up toward your buttocks while keeping your heel on the bed. Slide your heel back down to the starting position and relax. Keep your kneecap pointed up toward the ceiling during the exercise. You may want to use a plastic bag under your heel to help it slide easier.

Leg slides (abduction/adduction)



Slide your surgical leg out to the side, keeping your kneecap pointed up toward the ceiling. Slide your leg back to the starting position. You may want to use a plastic bag under your heel to help it slide easier.

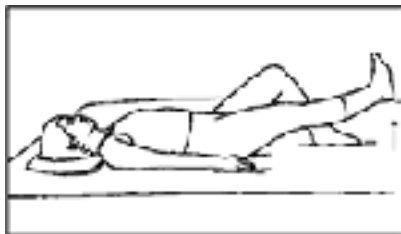
Lying kicks (short arc quadriceps)



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Lie on your back with a rolled-up blanket or towel (at least 6 inches in diameter) under the knee of your surgical leg. Straighten your surgical leg. Work up to holding for 5 seconds. Slowly lower your leg down and relax. The back of your knee should stay in contact with the blanket or towel during the exercise.

Straight leg raises



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Bend your non-surgical leg with your foot flat on the bed. Tighten the muscles on the top of your thigh, stiffening your knee. Raise your surgical leg up (about 12 inches), keeping your knee straight. Work up to holding for 5 seconds. Slowly lower your leg down and relax.

Sitting kicks (long arc quadriceps)



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Sit on a sturdy chair or on the side of your bed. Straighten your knee. Work up to holding for 5 seconds. Slowly lower your leg down and relax.

Walking

How often: 5 times a day

Besides your exercise program, you must leave time for walking. It helps build your strength and endurance.

- Walk around your home five times a day. Trips to the bathroom or kitchen are not enough.
- Gradually increase the distance you walk. Work up to walking outside and in the community.

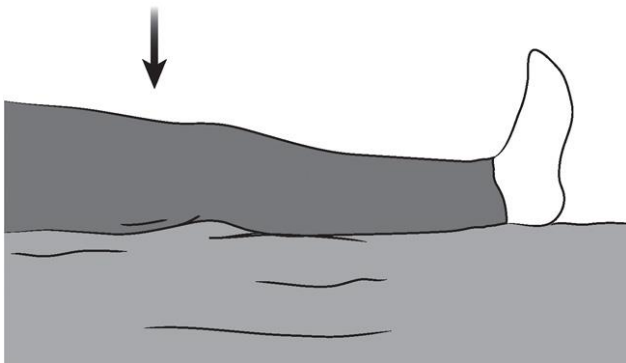
Early Postoperative Exercises

- The following exercises will help increase circulation to your legs and feet, which is important for preventing blood clots.
- They will also help strengthen your muscles and improve knee movement.
- Start the exercises as soon as you are able.
- You may feel uncomfortable at first, but these exercises will help speed your recovery and actually diminish your postoperative pain.

Quadriceps Sets

Tighten your thigh muscle. Try to straighten your knee. Hold for 5 to 10 seconds.

Repeat this exercise approximately 10 times during a two-minute period, rest one minute, and then repeat. Continue until your thigh feels fatigued.



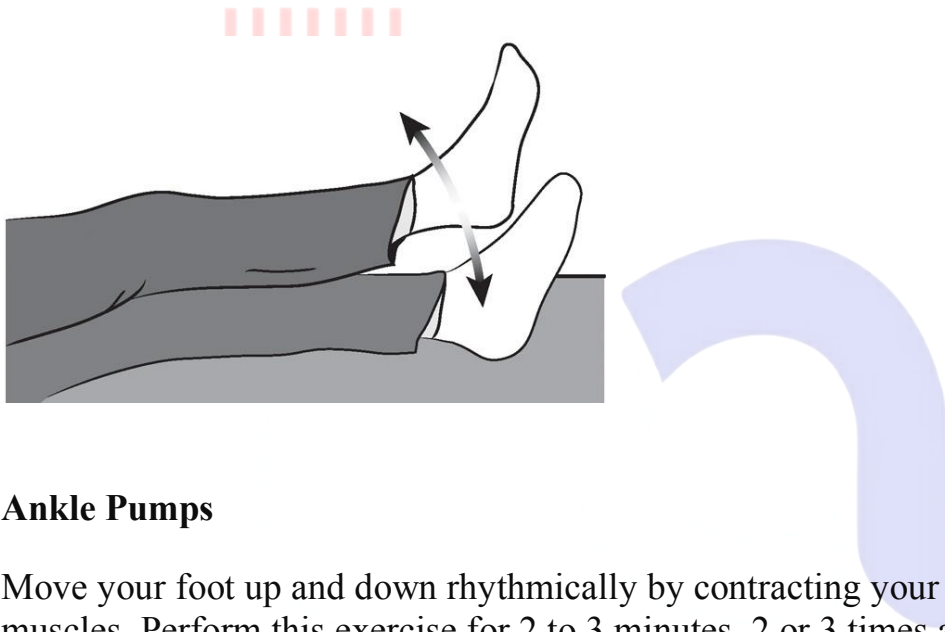
Straight Leg Raises

Tighten your thigh muscle with your knee fully straightened on the bed, as with the quadriceps set above. Lift your leg several inches. Hold for 5 to 10 seconds. Slowly lower.

Repeat until your thigh feels fatigued.

You also can do leg raises while sitting. Tighten your thigh muscle and hold your knee fully straightened with your leg unsupported. Repeat as above.

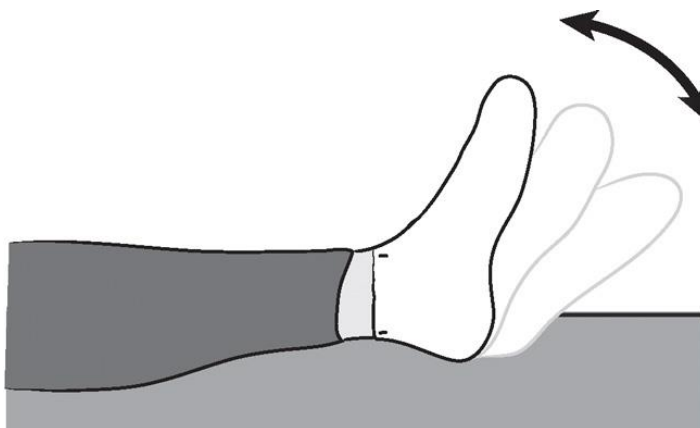
Continue these exercises periodically until full strength returns to your thigh.



Ankle Pumps

Move your foot up and down rhythmically by contracting your calf and shin muscles. Perform this exercise for 2 to 3 minutes, 2 or 3 times an hour in the recovery room.

Continue this exercise until you are fully recovered and all ankle and lower-leg swelling has subsided.



Knee Straightening Exercises

Place a small rolled towel just above your heel so that your heel is not touching the bed. Tighten your thigh. Try to fully straighten your knee and to touch the back of your knee to the bed. Hold fully straightened for 5 to 10 seconds.

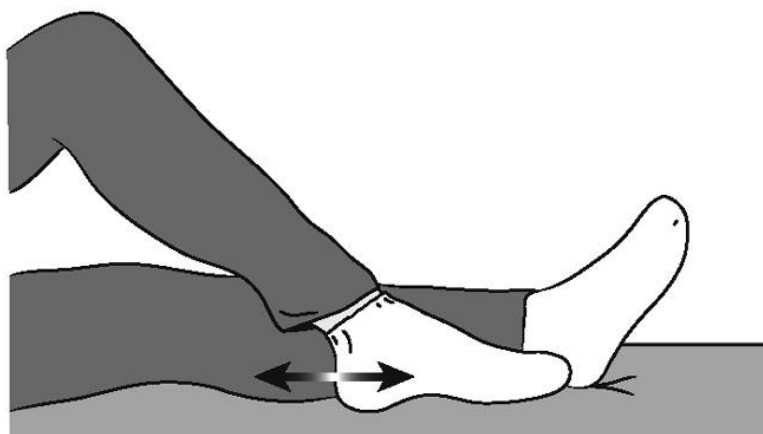
Repeat until your thigh feels fatigued.



Bed-Supported Knee Bends

Slide your foot toward your buttocks, bending your knee and keeping your heel on the bed. Hold your knee in a maximally bent position for 5 to 10 seconds and then straighten.

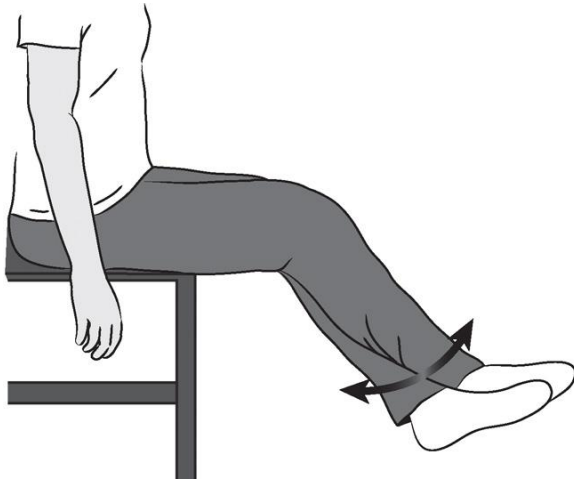
Repeat several times until your leg feels fatigued or until you can completely bend your knee.



Sitting Supported Knee Bends

While sitting at your bedside or in a chair with your thigh supported, place your foot behind the heel of your operated knee for support. Slowly bend your knee as far as you can. Hold your knee in this position for 5 to 10 seconds.

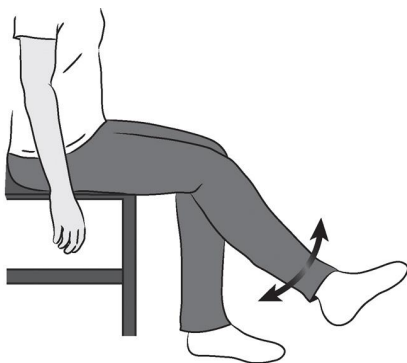
Repeat several times until your leg feels fatigued or until you can completely bend your knee.



Sitting Unsupported Knee Bends

While sitting at bedside or in a chair with your thigh supported, bend your knee as far as you can until your foot rests on the floor. With your foot lightly resting on the floor, slide your upper body forward in the chair to increase your knee bend. Hold for 5 to 10 seconds. Straighten your knee fully.

Repeat several times until your leg feels fatigued or until you can completely bend your knee.



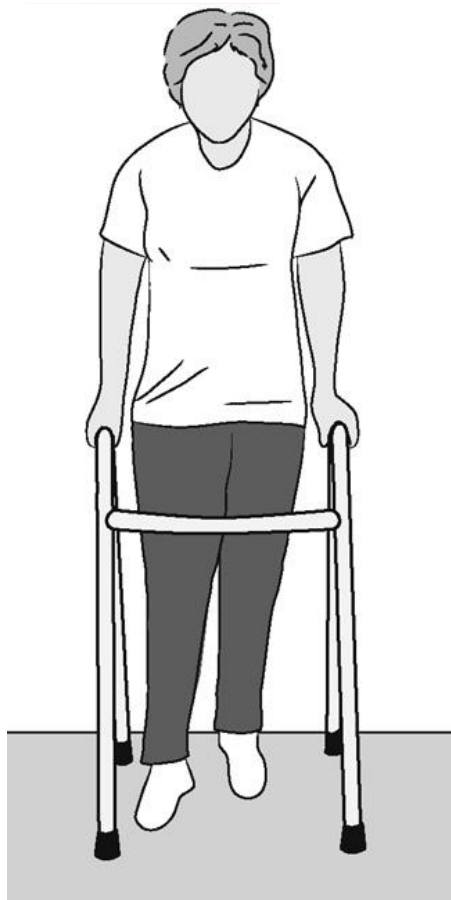
Early Activity

Soon after your surgery, you will begin to walk short distances in your hospital room and perform everyday activities. This early activity aids your recovery and helps your knee regain its strength and movement.

Walking

Proper walking is the best way to help your knee recover. At first, you will walk with a walker or crutches. Your surgeon or therapist will tell you how much weight to put on your leg.

Stand comfortably and erect with your weight evenly balanced on your walker or crutches. Advance your walker or crutches a short distance; then reach forward with your operated leg with your knee straightened so the heel of your foot touches the floor first. As you move forward, your knee and ankle will bend and your entire foot will rest evenly on the floor. As you complete the step, your toe will lift off the floor and your knee and hip will bend so that you can reach forward for your next step. Remember, touch your heel first, then flatten your foot, then lift your toes off the floor.



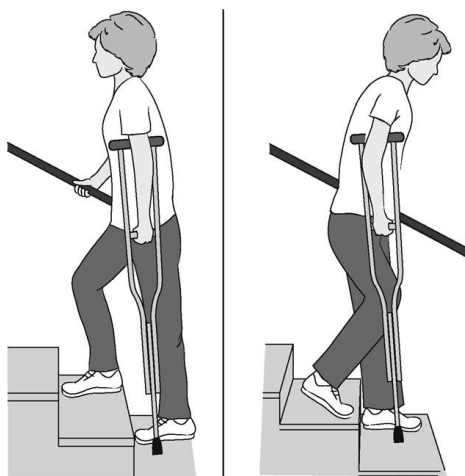
Early on, walking will help you regain movement in your knee. Walk as rhythmically and smoothly as you can. Don't hurry. Adjust the length of your step and speed as necessary to walk with an even pattern. As your muscle strength and endurance improve, you may spend more time walking. You will gradually put more weight on your leg. You may use a cane in the hand opposite your surgery and eventually walk without an aid.

When you can walk and stand for more than 10 minutes and your knee is strong enough so that you are not carrying any weight on your walker or crutches (often about 2 to 3 weeks after your surgery), you can begin using a single crutch or cane. Hold the aid in the hand opposite the side of your surgery. You should not limp or lean away from your operated knee.

Stair Climbing and Descending

The ability to go up and down stairs requires both strength and flexibility. At first, you will need a handrail for support and will be able to go only one step at a time. Always lead up the stairs with your good knee and down the stairs with your operated knee. Remember, "up with the good" and "down with the bad." You may want to have someone help you until you have regained most of your strength and mobility.

Stair climbing is an excellent strengthening and endurance activity. Do not try to climb steps higher than the standard height (7 inches) and always use a handrail for balance. As you become stronger and more mobile, you can begin to climb stairs foot over foot.



Stair climbing and descending using a crutch

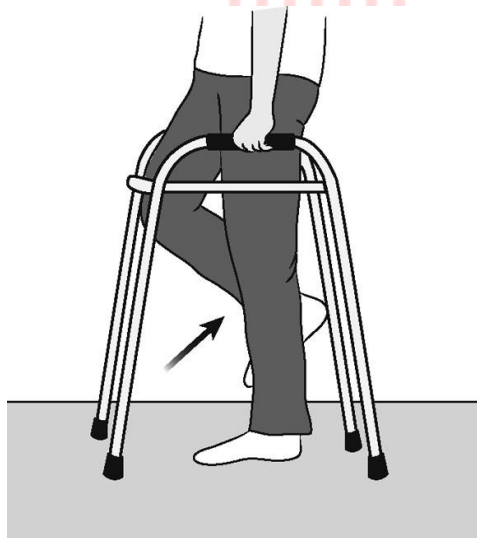
Advanced Exercises and Activities

Once you have regained independence for short distances and a few steps, you may increase your activity. The pain of your knee problems before surgery and the pain and swelling after surgery have weakened your knee. A full recovery will take many months. The following exercises and activities will help you recover fully.

Standing Knee Bends

Standing erect with the aid of a walker or crutches, lift your thigh and bend your knee as much as you can. Hold for 5 to 10 seconds. Then straighten your knee, touching the floor with your heel first.

Repeat several times until fatigued.

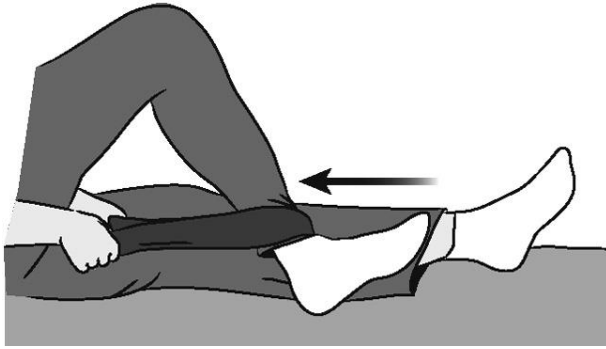


Standing knee bend

Assisted Knee Bends

Lying on your back, place a folded towel over your operated knee and drop the towel to your foot. Bend your knee and apply gentle pressure through the towel to increase the bend. Hold for 5 to 10 seconds.

Repeat several times until fatigued.



Assisted knee bend

Knee Exercises with Resistance

You can place light weights around your ankle and repeat any of the above exercises. These resistance exercises usually can begin 4 to 6 weeks after your surgery. Use one- to two-pound weights at first; gradually increase the weight as your strength returns. (Inexpensive wrap-around ankle weights with Velcro straps can be purchased at most sporting goods stores.)

Exercycling

Exercycling is an excellent activity to help you regain muscle strength and knee mobility.

At first, adjust the seat height so that the bottom of your foot just touches the pedal with your knee almost straight. Peddle backwards at first. Ride forward only after a comfortable cycling motion is possible backwards.

As you become stronger (at about 4 to 6 weeks) slowly increase the tension on the exercycle. Exercycle for 10 to 15 minutes twice a day, gradually build up to 20 to 30 minutes, 3 or 4 times a week.



Later on, exercycling will help you build strength in the muscles around your knee.

Pain or Swelling after Exercise

- You may experience knee pain or swelling after exercise or activity. You can relieve this by elevating your leg and applying ice wrapped in a towel.
- Exercise and activity should consistently improve your strength and mobility. If you have any questions or problems, contact your orthopaedic surgeon or physical therapist.

Tip

Do your exercises lying down for the most comfort. Your bed is an excellent place to do your exercises.



Staying Active: Sports and Activities You Can Do After a Total Knee Replacement

Overview

- A knee replacement may be your ticket to a healthier and more active lifestyle. Once you've recovered, you can return to many activities that were too painful and difficult for you before surgery.
- In most cases, you can resume many of your normal activities after about 12 weeks. But be sure to check with your doctor before starting a new sport or physical activity.
- Staying active will also help you strengthen your knee and make it more likely to function well for many years.
- Here are a few examples of low-impact activities and sports that you should be able to do once you've recovered from your surgery.

Exercise and activity guidelines

- You may be excited to move without pain, but nervous that you'll damage your new knee joint if you participate in physical activity after your surgery.
- Knee replacements have improved a lot over the last few decades. Artificial replacements are designed to mimic a natural knee. This means that, like a natural knee, it needs exercise to function properly.
- According to the American Academy of Orthopaedic Surgeons (AAOS), most doctors recommend up to 30 minutes of exercise two to three times per day during the early recovery stages. This is in addition to walking daily.
- Your doctor will provide recommendations for activity based on your needs and overall health. In general, low-impact exercises are recommended over high-impact versions that can add stress to your knees.

Aerobic exercises

1. Walking

Walking is one of the best exercises you can do to build up strength in your knee. It's also a good way to burn calories and benefit your heart. Start with smaller steps and shorter walks as you work your way up to longer distances. Keep track of how long you walk every day so you can gauge your progress.

2. Running

Running is an aerobic activity like walking, but it's much more high-impact. For this reason, the AAOS doesn't recommend jogging or running after a total knee replacement.

3. Swimming

Swimming is not a weight-bearing activity, so it's a great way to exercise without putting stress on your artificial knee. Many people with knee replacements can resume swimming within three to six weeks after surgery. But check with your doctor or physical therapist before diving into the pool.

4. Dancing

Ballroom dancing and gentle modern dancing are great ways to exercise. Dancing is a good way to use leg muscles and engage in light aerobic activity. Avoid twisting and abrupt movements that could put your knee out of alignment. Also avoid high-impact movements such as jumping.

5. Cycling

Cycling is a good way to regain strength in your knee. Whether you use an actual bicycle or an exercise machine, stay on a flat surface and increase your distance slowly.

The AAOS recommends peddling backwards on a stationary bike as you gradually gain your strength back. You can track your activity and time yourself to make it more challenging.

6. Elliptical machines

These machines can provide a good workout without placing undue stress on the knees. As with cycling, your knees move in a circular motion, which means you can go for longer distances. An elliptical machine is a great alternative to running because you can move faster than walking, without the impact.

Strength and flexibility training

1. Yoga

Gentle stretching is a great way to avoid stiffness, improve your flexibility, and boost the overall health of your knee. It's important to avoid twisting movements, and it's critical to protect your knees by keeping them aligned with your hips and ankles.

Talk with your yoga instructor before class so they're aware of your limitations. This will help prevent extra strain on your knee. If you feel any knee pain, modify the exercise or consider taking a break.

2. Weightlifting

Lifting weights helps build strength and diminish knee pain. Your bones will also grow and become stronger if you practice resistance training.

Use weights that are appropriate for your size and strength. Check with your doctor before engaging in a weightlifting program. If necessary, consult with a physical therapist or trainer to map out a regimen.

3. Calisthenics

These basic exercises rely on simple, rhythmical movements, and help build strength while increasing flexibility. Examples include crunches, pushups, and lunges.

You should also consider gentle aerobics. These classes are available at most gyms. Just make sure you skip high-impact exercises.

Outlook

- The AAOS estimates that over 90 percent of people who get knee replacements have less knee pain and feel like their overall quality of life has improved.
- Working out can keep your weight down, which may also help reduce wear and tear on your new knee joints.
- Rushing into activities before you've sufficiently recovered may put you at risk for complications. It's important to take things slowly and gradually build your way up to a comprehensive exercise routine.
- Check with your doctor before engaging in any activities after knee surgery.
- Above all, stop working out immediately if you feel any knee pain or discomfort.

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