



Total Knee Replacement Guidelines and Post-op Rehabilitation Program Sumon Nandi, MD

While in the hospital

Begin the following exercises the night of surgery. Perform exercises 5 - 10 times each, every hour while you are awake

1. Deep breathing using the incentive spirometer
2. Move ankles up and down.
3. Tighten knee muscles by pushing your knees down into the bed HOLD 1-2-3-4-5 and RELAX.
4. Tighten buttocks muscles. HOLD 1-2-3-4-5 and RELAX.

The day after surgery and until your discharge, try to sit up in the bed side chair for meals with the assistance of the unit staff.

SPECIAL CONSIDERATIONS:

- Do not place a pillow under your operated knee when you are resting in bed.
- Do not twist or pivot on your operated knee when walking or standing.
- To minimize swelling, stiffness and decrease pain:
 - Use ***cold*** as needed but ***not heat***. Ice 20 minutes at a time. Change the ice location frequently. Ice after walking, when pain is present, after you have completed your exercises, or after you have been sitting in a chair.
 - Rest and elevate the operated leg in bed throughout the day.
 - Limit your sitting to 60 minutes at one time. Keep your knee moving regularly while sitting. Sit with your knees bent and your feet flat on floor. The knee immobilizer should not be on your leg when you are sitting.
- Work on straightening your knee. Place a towel roll underneath your ankle, place a 5 lb bag of ice/rice on top of your knee, and push your knee down to the mattress. While doing this exercise, try to touch your toes to stretch the muscles in the back of your leg (hamstrings), which will help straighten your knee. (exercise number 2)

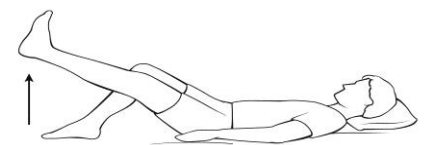
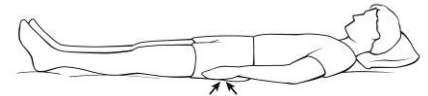
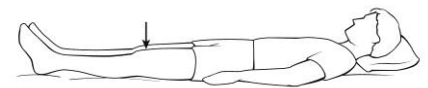
- Work on bending your knee. Sit in a chair, push your ankle back, hold on to the sides of the arms of the chair, and sit forward (push your buttocks forward) in the chair while keeping your foot in place to further bend your knee. Hold for 15 seconds. (exercise number 10)

At Home

Complete the following exercises 10 repetitions, 3 times a day

Bed Exercises-Lying on Back

1. **Ankle Pumps** - Pump ankles back and forth.
2. **Quad Set** -Tighten muscle on the front of your thigh by pushing your knee down into the bed, hold for 5 seconds.
3. **Glut Set** - Squeeze your buttocks together, hold for 5 seconds.
4. **Heel Slides** - Bend your knee by sliding your heel on the bed towards your buttocks.
5. **Short Arc Quad** - Place a folded pillow or towel roll under the knee of your operated leg, so that your knee is bent and your heel is resting on the bed. Lift your lower leg off the bed, hold for 5 seconds.
6. **Straight Leg Raise** - Bend un-affected knee so that your foot is flat on the bed. Lift your operated leg up and off the bed (approximately 6 inches) and down slowly.
7. **Passive Extension** - Place folded pillow or towel under the heel of your operated leg to allow the back of your knee to stretch. Try to rest in this position for 20 minutes.



Sitting in a Chair

8. **Hip Flexion** - Place your hands under your thigh and gently lift your leg up and down. As your strength improves, do this exercise without using your hands. (Figure 8)
9. **Knee Extension** - Lift lower leg off the floor by straightening your knee, try to hold for 5 seconds, lower slowly. (Figure 9)
10. **Knee Flexion** - Bend your knee and try to get your foot under the chair. Gently rock your trunk forward over knee with leg in bent position, hold for 5 seconds. You may use your other leg to help bend your knee. (Figure 10)

Figure 8

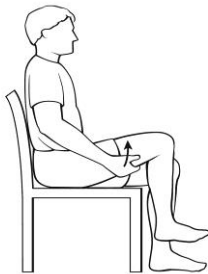


Figure 9



Figure 10



Standing Exercises - Use a solid surface for support with all standing exercises.

11. **Toe Raises** - Raise up and down on your toes slowly. (Figure 11)
12. **Hip Flexion** - Lift operated leg off floor, bringing the knee as high as you can, and hold for 5 seconds. (Figure 12)
13. **Knee Flexion** - Bend your knee behind you as far as you can, hold for 5 seconds, lower your leg slowly to the floor. (Figure 13)
14. **Knee Lunges on a step** - Place your operated foot up on a step. Lean/lunge forward and bring your weight over you operated leg allowing your knee to bend. Hold for 5 seconds and relax. (Figure 14)

Figure 11



Figure 12



Figure 13



Figure 14



