

## Guide to Knee Replacement Rehabilitation

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Welcome to our Knee Replacement Rehab video series. The goal of these videos is to help maximize your recovery following knee replacement surgery. *These videos should not be used as a substitute for regular physical therapy visits and guidance from your physician.*

Please remember the following:

- Follow as a Home Program for first 12 months following surgery to maximize results and functional recovery.
- Only progress from one phase to the next based on recommendation from your physician. Most therapy regimens, particularly after surgery, are based on a healing timeline. Progressing too quickly, even though it may feel okay at first, can put you at risk for injury.
- The program is designed to involve no special equipment. The majority of exercises can easily be conducted at home.
- If you develop any questions or concerns regarding your condition while using this video, contact your physician.

Best of luck in your recovery.

### PHASE I – PROTECT HEALING AND EARLY MOTION (0-2 weeks post-op)

**GOALS:** Protect the knee during early healing, regain motion and prevent muscle de-conditioning.

**KEY POINTS:**

- Icing is very important following surgery to help prevent swelling, stiffness, and pain. Apply ice pads or cooling pads for 15 minutes 3-4 times daily during this phase – especially after therapy sessions.
- If the knee is swollen elevate it on pillows above the level of your heart while sedentary. Do NOT place pillow only under the knee so that it is slightly bent, as this will encourage it to heal slightly bent.
- It is critical to regain full extension [straightening] of the knee ASAP after surgery. Work on heel props [#1 below] whenever sedentary or at least 3-4 times per day for 30 minutes during this phase. If your knee heals without full extension you will walk with a limp after surgery.
- Exercises should be conducted three times daily with 1-2 sets of 12-15 repetitions each set. Start light and progress as strength and motion improve and pain decreases.
- Try to progressively bend the knee during this phase – goal is to get to 90 degrees bent.
- Start long arc quads [#8 below] when able to bend to 90 degrees.
- Do weight shifts [#’s 9, 10 below] to help regain balance.

**PHASE 1 EXERCISES:**

1. HEEL PROPS
2. QUAD SETTING
3. STRAIGHT LEG RAISES
4. HIP ABDUCTION
5. HIP ADDUCTION
6. ANKLE PUMPS
7. HEEL SLIDES
8. LONG ARC EXTENSIONS
9. STANDING WEIGHT SHIFTS – FRONT/BACK
10. STANDING WEIGHT SHIFTS – SIDE/SIDE
11. PATELLAR MOBILIZATIONS

See video at <http://www.matthewboesmd.com/knee-replacement-rehabilitation/> to view the exercises.

**PHASE 2 – MOTION AND EARLY STRENGTHENING (2-6 weeks post-op)**

**GOALS:** Progress to full motion of the knee; start to regain strength.

**KEY POINTS:**

- Continue all Phase 1 exercises.
- It is important to perform all exercises on both legs – this will help prevent imbalance between the rehab and non-rehab knee.
- If the affected joint is stiff, try using moist heat for 10 minutes prior to exercise to help loosen things up.
- Continue to ice after exercise for 10 minutes to help prevent irritation and swelling.
- If too weak for standing squats [#2 below], start by doing squat to chair [#3 below].
- Start short arcs on stationary bike [moving legs through lower half of pedal cycle only] until there is enough motion in the knee to bend through the upper part of the pedal rotation.
- Bike for 10-15 minutes on low resistance, and increase duration as tolerated.
- Exercises should be conducted three times daily with 1-2 sets of 12-15 repetitions.

**PHASE 2 EXERCISES:**

1. PRONE HIP EXTENSION
2. STANDING SQUATS
3. SQUAT TO CHAIR
4. SHORT ARC EXTENSIONS
5. CALF STRETCHING
6. HAMSTRING STRETCHING
7. STATIONARY BIKE

See video at <http://www.matthewboesmd.com/knee-replacement-rehabilitation/> to view the exercises.

### PHASE 3 – STRETCHING AND STRENGTHENING (6-12 weeks post-op)

**GOALS:** Address any motion deficits; improve functional strength.

**KEY POINTS:**

- Continue Phase 2 exercises.
- Lunges – bend back knee down and closer to floor as strength increases.
- Use a walker or cane if unsteady during exercises to prevent falls or hold on to wall.

**PHASE 3 EXERCISES:**

1. PRONE QUAD STRETCH
2. FRONT LUNGES
3. SINGLE LEG BALANCING
4. FRONT STEP UPS
5. LATERAL STEP UPS
6. WALL SQUATS
7. STATIONARY BIKE
8. ENDURANCE WALKING

See video at <http://www.matthewboesmd.com/knee-replacement-rehabilitation/> to view the exercises.

### PHASE 4 – ADVANCED STRENGTHENING & FUNCTIONAL ACTIVITY (> 12 weeks post op)

**GOALS:** Return to full activity.

**KEY POINTS:**

- Stretching exercises [#1-3 below] are held for 10 seconds each, do one set of 5 repetitions each stretch.
- Do strengthening exercises [# 7-12 below] – 1-2 sets of each exercise for 12-15 repetitions.
- Begin regular cardiovascular exercise – start with 15-20 minutes and progress as tolerated.
  - Important to cross-train for cardio exercise – rotate bike, elliptical, or walking on different days to prevent irritation and pain from the same repetitive exercise.
- Start functional exercises – e.g., golf, tennis swings.
  - Return to light golf or doubles tennis activity at 12-14 weeks per physician’s approval.
- Continue for up to 12 months for maximum recovery.
- Return to full activity per individual physician’s recommendation.

**PHASE 4 EXERCISES:**

1. STRETCHING – QUADRICEPS
2. STRETCHING - HAMSTRING
3. STRETCHING - CALF
4. BIKING
5. ELLIPTICAL
6. WALKING
7. LEG PRESS

8. DUMBBELL SQUATS
9. DEADLIFT WITH STICK/CANE
10. HIP ABDUCTION & ADDUCTION
11. HIP FLEXION & EXTENSION
12. CALF RAISE
13. ABDOMINAL V'S
14. FUNCTIONAL EXERCISE - GOLF SWINGS
15. FUNCTIONAL EXERCISE - TENNIS SWINGS

See video at <http://www.matthewboesmd.com/knee-replacement-rehabilitation/> to view the exercises.

For more information, visit [www.MatthewBoesMD.com](http://www.MatthewBoesMD.com)