



TOTAL KNEE REPLACEMENT REHABILITATION

Dr. Abigail R. Hamilton, MD

Walking after Total Knee Replacement

After your TKR, continue using your walker or crutches until your surgeons tell you it is okay to stop using them.

When turning with a walker or crutches DO NOT PIVOT on your operated leg. Always turn taking small, well-placed steps, and turn AWAY from your operated leg.

As you gain strength and endurance, you will advance to a two-point gait pattern. This means you will move the crutches and operated leg at the same time, and then move your good leg beyond the crutches.

In this gait pattern, you should distribute one third of the weight to each hand and one third on the operated leg. Early on it may be more comfortable to take more weight on the hands, particularly the hand opposite the operated side.

It is important to remember that while standing, the crutches should always be kept in front of you and slightly out to the side. If the crutches are even with your body when you are standing still, they will not keep you from falling. Also, do not carry your weight on the armpits when using crutches. This can be painful and can cause permanent nerve damage. The weight should be taken on your hands and good leg.

Continuous Passive Motion Device

A continuous passive motion (CPM) device can be used following total knee replacement surgery to slowly and gently flex and extend the knee joint. The device moves your joint while you do not exert any effort.

Ask your surgeon if a CPM device is right for you following your joint replacement.

Getting into Bed

- t Sit on the edge of the bed with both feet on ground
- t Scoot your hips backwards as you keep your weight on your hands
- t Lower yourself onto your forearms
- t Slide your legs onto the bed; keep your operated leg straight
- t Once in bed, keep your toes pointed up



Getting out of Bed

- t Slide your legs toward the edge of the bed; keep your operated leg straight
- t Push yourself up to your forearms and onto your hands
- t Slide your legs so that your heels are over the edge of the bed
- t Scoot your hips forward until both feet are on the ground



Sitting in a Chair:

To sit down in a chair*:

- t Stand in front of the chair. Turn around and back-up until the back of your legs touch the chair
- t Place your operated leg far out in front of you
- t Place your crutches in the hand opposite of your operated side, and place your free arm on the arm of the chair
- t Gently ease down into the chair
- t Once you are seated, you may bring your operated leg back so your foot is under your knee

When sitting, always keep your knees lower than your hips. In the early stages, avoid sitting for long periods of time. Get up every 20-30 minutes to stretch up and down on your toes or take a walk before sitting again.



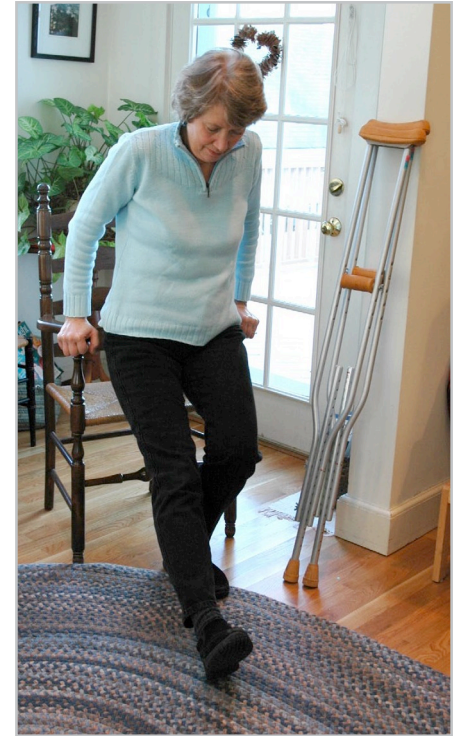
*As your pain subsides and you regain range of motion, you will be able to sit down and stand up from a chair without modifying.

Rising from a Chair:

To rise up from the chair:

- t Place the foot of your operated leg far in front of you
- t Bring your hips forward to the edge of the seat
- t Again, place the operated leg far in front of you
- t Push up on the arms of the chair and rise on your good leg
- t Do not try to use your operated leg in standing up
- t Place the crutches in the hand on the good side and finish standing
- t Once standing, place one crutch under each arm

Do not try to get up with your hips at the back of the chair. Always first bring your hips to the front of the seat before getting up.



Beginning to Walk after Surgery

At first, you will use a walker as you begin to walk. Once you are steady on your feet, you will progress to crutches.

Using a walker:

- t Place the walker one step ahead of you
- t Lean into it and pick up the operated leg, bend the knee and step forward, planting the heel down first
- t Bring your good leg up to the front of the operated leg
- t Repeat the process



Using crutches:

- t Place the crutches one step ahead
- t Place weight on your good leg and bring the operated leg up between the crutches
- t Bring your good leg up beyond the crutches



Stair Climbing

You will begin to walk stairs with a physical therapist before you are discharged from MGH.

In the following photos, the model has a right hip replacement.

Going Upstairs:

- t Put one hand on the banister and carry the crutch under the other arm
- t Put your weight through your arms and step up with your good leg
- t Then step up with your operated leg
- t Then the crutch



Coming Downstairs:

- t Place the crutch under one arm and the opposite hand on the banister
- t Start down the stairs with the crutches first
- t Then your operated leg
- t Then your good leg



A way to remember this is:
Up with the good leg and
down with the operated leg.

Bathing

Use a stall shower if you have one. It is okay to use a tub shower, but follow the directions given. Use a stable shower chair in both a stall shower and tub shower. Never sit in the bottom of the tub. Have someone help you the first time you shower at home. Place a non-skid mat outside the shower for your safety.

Getting in a stall shower with a chair:

- t Walk to the shower with your walker and back up to the shower stall
- t Reach back with one hand for the chair while leaving the other hand on walker
- t Sit down on the chair and lift your legs over threshold of the shower
- t Turn to sit facing the faucet



If you are strong enough to stand in the stall shower:

- t Walk up to the shower with your walker or crutches
- t Step over the threshold with good leg followed by the operated leg

Bathing Continued

Getting into a tub shower with a chair:

- t Walk to the tub with your walker and back up to the tub until you can feel the tub at the back of your legs.
- t Reach back with one hand for the chair; leave other hand on the walker
- t Sit down on the chair with your operated leg out straight
- t Lift your legs into the tub, helping your operated leg with your hands
- t Keep your operated leg out straight



Getting into a tub shower without a chair:

- t Walk to the tub with your walker or crutches
- t Facing sideways, have your good leg against the tub
- t Bend your good leg at the knee and side step over the tub
- t Repeat with your operated leg, bending your knee to clear the tub

Bathing Continued

Getting out of a tub/shower with a chair:

- t Place a robe or towel securely around your body after drying off
- t Turn on the seat and lift your legs out of tub keeping your operated leg out straight
- t Push off the back of the chair and keep one hand on the walker
- t Stand up straight



Assistive Devices for Bathing:

A shower chair (pictured above) or a tub bench (pictured to the right) can make showering easier following your joint replacement surgery.



Getting in and out of Cars

Front seat:

- t Open the front door and back up to the seat
- t Put one hand on the dashboard and other on back of the front seat
- t Sit down and slide back as far as possible in a semi-reclining position
- t Bring legs into the car, helping the operated leg with your hands
- t Swing your operated leg into the car without bending your knee above your hip
- t Reverse the procedure to get out of the car



Back seat:

- t Enter the car from the side that allows your operated leg to be supported by the seat of the car
- t Slide back into the seat as explained above
- t Reverse the procedure to get out of the car

If you had a left total knee replacement, you would enter from the driver's side. If you had a right total knee replacement, you would enter from the passenger side.

Physical Therapy & Exercises

Following your surgery, you will have many weeks of physical therapy (PT) to help ease your operated knee back into activity. PT is an integral part of your recovery and is very important in determining the outcome of your surgery.

We have a list of commonly used exercises, but your surgeon and physical therapist will prescribe a specific set of exercises that is best for your unique case.

These exercises are important to your overall recovery – preventing blood clots, improving circulation, improving flexibility and knee movement and strengthening muscles. While they may feel uncomfortable at first, they will become easier with time and help you return to normal activity.

- Ankle Pumps
- Quad Sets
- Short Arc Quads (Terminal Knee Extension)
- Heel Slides (Hip & Knee Flexion)
- Long Arc Quad (Knee Extension & Flexion)
- Straight Leg Raises

Ankle Pumps:

This exercise will help you increase your ankle flexibility, strengthen your calf muscles and improve blood circulation in your legs. Strengthening the muscles in your lower leg will help support your hip as you recover.



- t Lie on your back with your legs extended
- t Support your operated leg with a folded towel or pillow under your ankle
- t Engage your calf muscles, and move your ankle towards your shin
- t Hold for five seconds
- t Move your ankle away from your shin
- t Hold for 5 seconds
- t Perform one set of 10 repetitions 3 times a day

Quad Sets:

Quad sets are an important part of your PT regimen because they increase strength in your quadriceps muscle without straining your joint replacement. Like glut sets, this is an exercise that uses your muscles without moving your hip or knee.



- t Lie on your back with your legs extended in bed
- t Tighten the quad muscle on the front of your leg
- t Push the back of your knee into the bed
- t Hold for 5 seconds
- t Perform one set of 10 repetitions 3 times a day

Short Arc Quads / Terminal Knee Extensions:

Short arc quads take your quadriceps muscle through a short motion to develop and strengthen this important muscle, improving range of motion in your hip and knee. The quadriceps muscles are a group of four muscles that control your knee joint while you are standing and prevent your knee from buckling.



- t Lie on your back with your legs extended in bed
- t Support your operated leg with a pillow to keep your knee bent at 45°
- t Straighten operated leg at the knee by lifting only your heel off the bed
- t Hold for 5 seconds
- t Lower leg back to resting position
- t Perform one set of 10 repetitions 3 times a day

Heel Slides / Hip & Knee Flexion:

Heel slides are an important component of your recovery because they stimulate both your quadriceps and hamstring to improve range of motion in your knee and hip. As you build strength throughout your physical therapy, you will be able to bend your knee more comfortably and completely.



- t Lie on your back with your legs extended
- t Slide the heel of your operated leg toward your buttock so that your knee and hip bend
- t Hold for 10 seconds
- t Slide your heel back so that your leg is flat
- t Keep the opposite leg flat
- t Perform one set of 10 repetitions 3 times a day

Long Arc Quad / Knee Extension:

Active knee extension increases your knee flexibility range of motion and improves quadriceps strength.



- t Sit upright in a firm chair
- t Raise your heel forward until the knee is straight
- t Hold for 5 seconds
- t Slowly lower and bend your knee as far you can
- t Perform one set of 10 repetitions 3 times a day

Straight Leg Raises:

Straight leg raises strengthen your quadriceps and help you increase your knee stability.



- t Lie on your back with your non-operated knee bent and foot flat.
- t Lift your operated leg one foot off the ground.
- t Keep your knee straight and toes pointed up.
- t Hold for 5 seconds, then relax.
- t Perform one set of 10 repetitions 3 times a day.