

Post Operative Knee

Range of Motion Exercises

- Early range of motion is essential to maximize outcomes with knee surgery
- Most problems during recovery and poor results from surgery are secondary to lack of early motion. Lack of motion can result in early scar tissue, thickening of the knee capsule, significant difficulty to regain motion going forward, need for further surgeries, change in gait, and permanent loss of motion.
- As long as you abide by your specific post operative protocol, simple range of motion will not damage anything. It is normal for it to be painful and difficult to work to regain motion.
- Aside from daily exercises, the best way to help regain motion is to mitigate swelling. This can be done by icing multiple times a day (with polar care machine or ice packs, really no limit), continue to wrap the knee to provide compression, taking scheduled Tylenol and naproxen (if applicable) for at least 3 weeks, and taking narcotics if needed prior to working on exercises or before physical therapy sessions.
- Every patient should work on motion for 30 minutes at least 3 times a day *in addition to* the physical therapy sessions. Your therapist can help guide you on home exercises along with those below.
- Understand that regaining knee motion is progressive. A reasonable goal is to gradually increase flexion every couple days. Ideally, full motion should be achieved by 6 weeks (unless your protocol states different).
- Some protocols limit knee motion to 90 degrees for the first 3 weeks. Others may be even more conservative. Please abide by your protocol, but also still work on motion daily. The more fluid bending your knee becomes, the less likely you will have problems.
- Many surgeries require a brace post operatively. Initially, utilize the brace when working on motion and these exercises. After 3 weeks, you may remove the brace when working on range of motion.
- Extension is just as important as flexion. It is tempting to sit with a pillow under the knee, since that is the comfortable position. However, this can quickly result in loss of knee extension. After just a few weeks, it is very difficult to regain full extension if you have not done so already. Instead, you should dedicate multiple sessions a day to place a pillow or towel under the foot, allowing the knee to fully straighten. If you have a brace, it should be locked straight when sleeping for the first 3 weeks to help you regain extension. Sometimes, the brace allows too much motion within the straps. Consider setting the brace to -10 degrees to truly gain full extension in the brace.

NOTES:

ACL/ATS/TKA HEP Initial Phase

These exercises are to be completed 3 times day for 7 days during the first few weeks post-op to ensure appropriate range of motion and strength is restored.

1.) You can complete any of the knee flexion range of motion exercises that allows you the most improvement. You should feel some discomfort at the end range when progressing range of motion. The discomfort is normal and will improve as the range of motion returns.

2.) You will likely need assistance with getting your leg onto the wall the first couple of weeks. Please have someone assist you with your leg onto the wall to protect the surgical repair until advised otherwise by your therapist.

3.) Extension range of motion is very important to obtain early. You have no restrictions with regaining the extension range of motion as quick as you can. It can be uncomfortable to have the leg in extension but the best way to improve the extension range of motion is to spend prolonged time in the extension position. Begin with 5 minutes unsupported in knee extension and build up to 10-20 minutes at a time. (You can ice/elevate the leg at the same time to improve both extension and swelling).

4.) Complete the quad set exercises prior to straight leg raise to ensure proper quad activation.

5.) Always complete the straight leg raise and sidelying hip abduction exercise with the brace on and locked into extension until told otherwise by the therapist.

6.) Following the exercises and throughout the day it is very important for you to elevate your leg and ice to decrease swelling.

Knee Flexion On Wall - Prom

SETS: 1	REPS: 10MIMN	HOLD: 3
TIMES PER DAY: 3	TIMES PER WEEK: 7	



HOW: Lie on your back close to a wall. Place your affected leg on the wall. Make sure your heel can slide on the wall, so wear a sock or place a pillow cloth or something else slippery around your foot so that it can slide. Slowly let gravity slide your leg down. As your leg slides down, your knee will bend more, which is the goal of this exercise. Bend as far as you can, hold that stretch for a few seconds, then return back to the starting position. Repeat.

FEEL: You should feel a slightly uncomfortable stretch at the end of your range. This is common and the goal of this exercise is to feel that little bit of discomfort so don't be alarmed.

COMPENSATION: Let gravity bring your foot down as it slides against the wall, don't try to move it yourself. Go slow!

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TIMES PER DAY: 3	TIMES PER WEEK: 7	



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COMPENSATION: Let gravity bring your foot down as it slides against the wall, don't try to move it yourself. Go slow!

Seated Knee Flexion - Aarom, Strap

SETS: 1	REPS: 10 MIN	HOLD: 3
TIMES PER DAY: 3	TIMES PER WEEK: 7	



HOW: Begin in a seated position with a strap or a towel wrapped around the middle of your foot. Pull your foot in towards your butt. You may need to choke up on the strap to get leverage with your arms. When you get to the end of your motion, you have the option of holding or moving back and forth. You also have the option of laying on your back when performing this exercise.

FEEL: The closer your heel gets towards your butt the more stretch you will feel in your knee.

COMPENSATION: Avoid pulling in with your leg, keep the leg relaxed. The motion should be coming from your arms pulling your leg in.

Seated Knee Flexion - Aarom

SETS: 1	REPS: 10 MIN	HOLD: 3
TIMES PER DAY: 3	TIMES PER WEEK: 7	



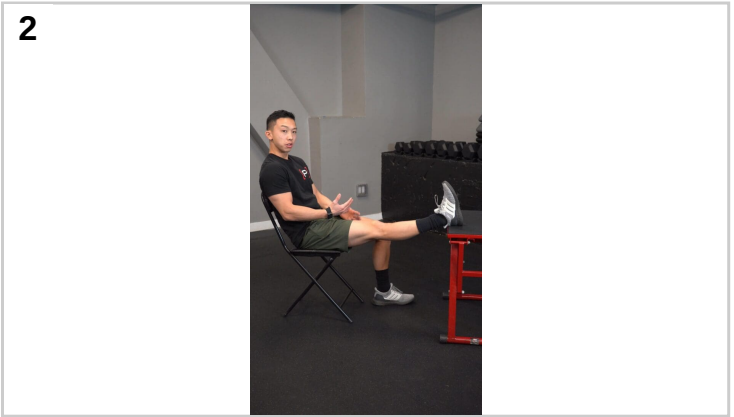
HOW: Begin in an upright seated position in a chair or stool. Your feet positioning may vary depending on your knee range of motion. Pull your foot back and bend your knee. Hold this and perform going backwards and forwards for the prescribed amount of reps or time.

FEEL: You should feel a stretch in your knee and thigh muscles.

COMPENSATION: Only allow motion in your knee, don't move your hips or upper body.

Seated Knee Extension - Prom

SETS: 1	REPS: 5-10MIN
TIMES PER DAY: 3	TIMES PER WEEK: 7



HOW: Get into a comfortable position on a chair or bed with your foot elevated and supported on a surface so that your leg is straight and parallel to the ground. Let gravity pull your knee into extension and/or use your hands as needed to help move your knee into extension. Hold until your knee begins to feel a little uncomfortable – not painful. Then relax your leg. Repeat as needed or prescribed.

FEEL: This should feel like a stretch behind your knee, maybe even your calf and hamstring. It can be normal sometimes to feel discomfort in the front of the knee, try to readjust your position if it is not tolerable discomfort. See video for other tips.

COMPENSATION: Do not let your foot rotate out to the side. Make sure to only prop your foot on the chair so there is an empty space under your knee.

Prone Knee Extension Prom Hang

SETS: 1	REPS: 5-10MIN
TIMES PER DAY: 3	TIMES PER WEEK: 7



HOW: Laying on a table or elevated surface, make sure your knees are slightly hanging over the edge. Your knee cap should be just over the edge, comfortably. Let gravity pull your lower leg down and extend your knee. Hold that stretch as long as prescribed, usually until it reaches a point of discomfort.

FEEL: You should feel a stretch in the back of your knee. If performing after surgery or injury, it is common to be uncomfortable.

COMPENSATION: Keep the knee straight. Make sure your kneecap is off the edge of the table. Stay relaxed!

Patella Mobilization

SETS: 3	REPS: 30
TIMES PER DAY: 3	TIMES PER WEEK: 7



HOW: In a seated position straighten out the leg in which you plan on mobilizing the kneecap. With your pointer fingers move your knee cap from side to side holding the knee cap at the end for a couple of seconds each. You also have the option of pushing your knee cap up and down.

FEEL: You will feel the knee cap moving, there shouldn't be much of a stretch sensation here.

COMPENSATION: Avoid putting pressure down into your knee cap as this may feel uncomfortable

Quad Set

SETS: 3	REPS: 15	HOLD: 2
TIMES PER DAY: 3	TIMES PER WEEK: 7	



HOW: Follow this foolproof guide to wake your quad back up! Laying on the ground or on a table with your knee straight and foot supported, attempt to push your knee down and lift your heel off the ground by squeezing your quadriceps muscle until your knee is fully straight. return to starting position and repeat.

FEEL: Really focus on squeezing your quad. Sometimes touching the muscle, massaging it, or hitting it can help. Think about moving your kneecap up and towards your hip socket. Push your knee down into the ground. Move your shin bone in the shape of a “J” by moving your knee down and your heel up at the same time. Squeeze both quadriceps at the same time to improve the quality of the quad contraction.

COMPENSATION: Do not lift your entire leg off the ground, focus on getting your knee fully straight similar to the other side.

Quad Set - Aarom, Strap

SETS: 3	REPS: 15	HOLD: 2
TIMES PER DAY: 3	TIMES PER WEEK: 7	



HOW:? Follow this foolproof guide to wake your quad back up! Use a stretch strap or towel and place it around the balls of your feet, holding onto both ends of the towel with your hands. Laying on the ground or on a table with your knee straight and foot supported, attempt to push your knee down and lift your heel off the ground by squeezing your quadriceps muscle until your knee is fully straight. Help your quad lift your heel up by pulling on the strap to lift your heel up at the same time. You should be able to lift it higher with the assistance of the strap. Return to starting position and repeat.

FEEL: ?Really focus on squeezing your quad. Sometimes touching the muscle, massaging it, or hitting it can help. Think about moving your kneecap up and towards your hip socket. Push your knee down into the ground. Move your shin bone in the shape of a “J” by moving your knee down and your heel up at the same time. Squeeze both quadriceps at the same time to improve the quality of the quad contraction.

COMPENSATION:? Do not lift your entire leg off the ground, focus on getting your knee fully straight similar to the other side.

Seated Hamstring Stretch

SETS: 2	REPS: 3	HOLD: 30
TIMES PER DAY: 3	TIMES PER WEEK: 7	



HOW:? Sit at the edge of your chair with one leg straightened out in front of you. Stick your chest out and maintain this position while slowly leaning forward. The lean should be coming from the hips.

FEEL:? You should feel a gentle stretch behind your hip, thigh, and/or knee.

COMPENSATION: Avoid rounding the back as you bring your chest forward. Also, avoid pointing your foot up towards the ceiling, keep your toes pointed down.

Seated Calf Stretch With Strap

SETS: 2	REPS: 3	HOLD: 30
TIMES PER DAY: 3	TIMES PER WEEK: 7	



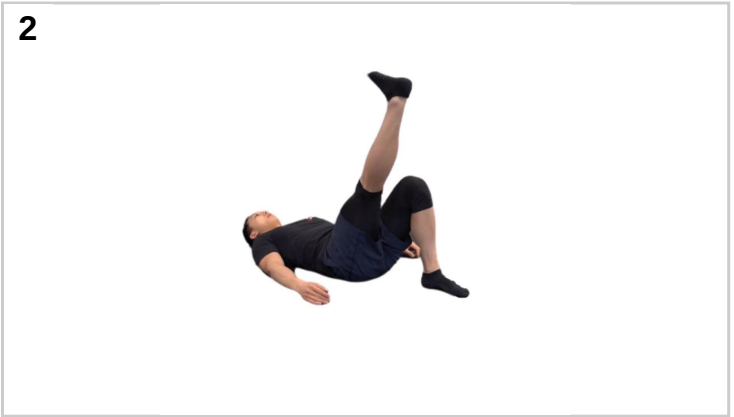
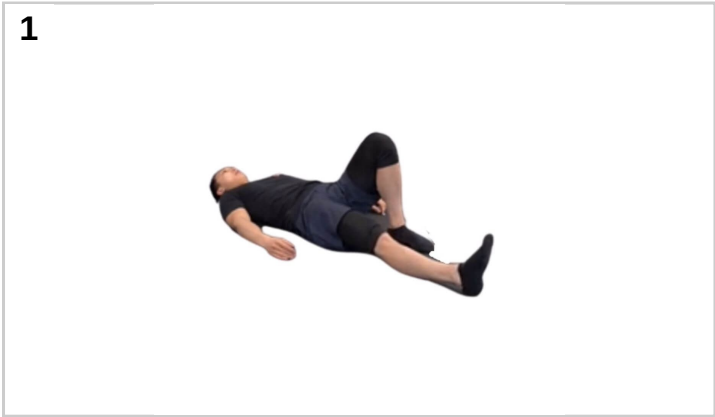
HOW: Begin in a seated position with a strap or a towel wrapped around the ball of your foot. While keeping your knee straight pull your foot up towards you. You may need to choke up on the strap to get leverage with your arms.

FEEL: You will feel this stretch in your calf.

COMPENSATION: Make sure when you pull you keep the knee straight, avoid allowing the knee to bend.

Straight Leg Raise

SETS: 3	REPS: 10
TIMES PER DAY: 3	TIMES PER WEEK: 7



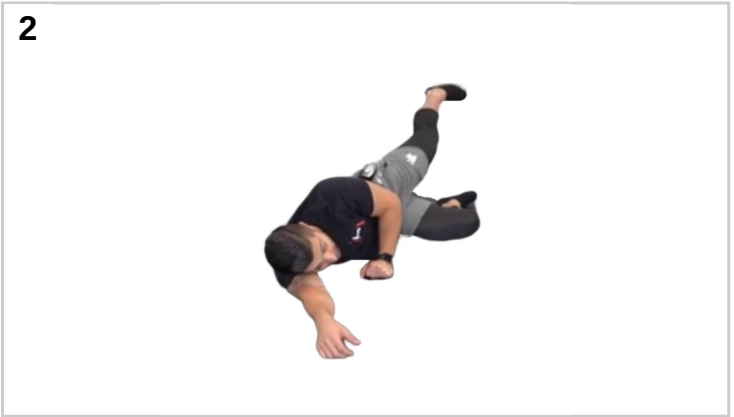
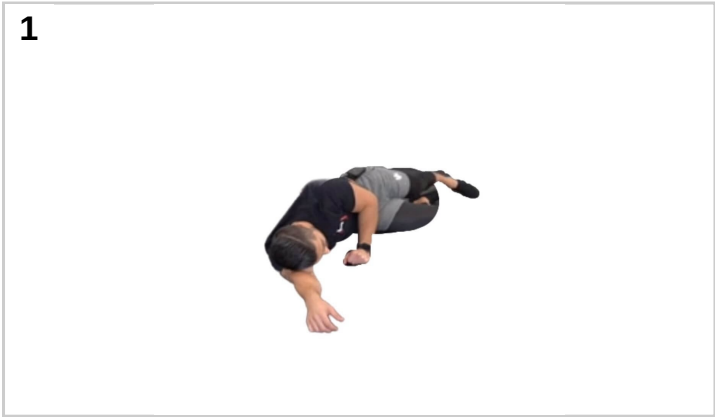
HOW: Start by lying on your back. Bend your opposite knee. The first step is to perform a very strong quadricep set by squeezing your thigh as hard as you can. Keeping this constant squeeze, tighten your core muscles and then lift your leg up into the air. Think of making your leg as long and as straight as you can while lifting it. Then slowly lower back down to starting position and repeat.

FEEL: You should feel an entire contraction of the front thigh muscles and your leg working hard.

COMPENSATION: You should not be feeling these exercise exclusively in the front of your hip. If you only feel the muscles in the front of your hip working, it means you are not squeezing your thigh hard enough or you're are not squeezing the quads when you are lifting your leg. Maintaining the thigh squeeze is the most important part of this exercise!

Side Lying Hip Abduction

SETS: 3	REPS: 10
TIMES PER DAY: 3	TIMES PER WEEK: 7



HOW: Begin on your side with your leg on top straightened out. Elevate the top leg towards the ceiling and back wall simultaneously. Avoid crunching at your low back or rotating your body open towards the ceiling.

FEEL: You should feel the outer hip, particularly the glute muscles with this exercise. You can place your top hand on your pelvis to assure the motion is coming from the hip and not the lower back.

COMPENSATION: Avoid rotating your entire trunk or performing a side crunch with this exercise. Make sure the shoulder that is facing the ceiling stay in front of the shoulder that is against the floor.