



The Patient's Guide To Preventing and Treating Post-Operative Knee Stiffness

Things to Keep in Mind:

1. Remember, **YOU** are **your Best Therapist!** Therapy begins immediately after surgery.
2. Post-operative knee rehabilitation is a process that requires consistency with participation in home exercise program, attendance at physical therapy, and compliance with post-operative instructions. Success depends on your patience and commitment.
3. The goal is to restore normal motion, reduce pain and stiffness, limit excessive scar tissue formation, and optimize function as soon as possible.
4. Moderate stretch intensity and high frequency will be most effective for regaining knee range of motion. **Overly aggressive or painful stretching is not advised.** Mild discomfort or soreness is to be expected, but not with a dramatic increase in pain lasting greater than an hour after exercise.
5. Gait training in order to return to normal walking will be a short term goal. You may have an assistive device such as walker, cane, or crutches that are intended to promote this process. It is to be used as instructed to walk with the most normal pattern possible. Your specific procedure will indicate when we can begin this process.
6. When you sleep, use a rolled towel under the heel in order to promote a flat knee position. Do not prop a pillow under your knee.

The following are part of your responsibility for rehabilitating your knee:

1. **MANAGE PAIN AND SWELLING:** Utilize ice frequently throughout the day, 10-20 minutes at time. Take advantage of elevation, using a heel prop to promote fluid flowing towards the body to prevent pooling in the lower leg. Take prescription pain medication, Tylenol, or Non-Steroidal Anti-Inflammatory Drugs such as ibuprofen as instructed
2. **MUSCLE ACTIVATION:** Quad Sets are important for regaining knee extension range of motion as well as strengthening your leg for standing and walking without a limp.
3. **STRETCHING EXERCISES:** consistency in performing stretching exercises with high frequency and moderate intensity will be most effective in preventing stiffness
4. **SOFT TISSUE MASSAGE AND SCAR MOBILIZATION:** once cleared by your therapist, you may gently massage your knee joint and surrounding musculature. This may help reduce swelling at the joint and reduce sensitivity to touch. When your incision is fully healed, you can gently apply unscented moisturizer/scar cream/vitamin E oil into the scar using up/down, side-to-side, and small circular movements with a comfortable amount of pressure.

5. **PROMOTE NORMAL HEALING:** Avoid forceful stretching and exercises to prevent scar tissue reformation.
6. **EARLY INTERVENTION IS CRUCIAL:** the first 2-4 weeks post-operatively are essential to prevent scar tissue maturation

Exercises for Extension:

These exercises are to be performed **3-5 times daily at mild-moderate intensity**. It is your responsibility to participate in this home program in order maximize the effectiveness of your time in the clinic with a therapist and to optimize the long term outcomes of your surgery.

Passive Extension with Heel Prop <https://www.youtube.com/watch?v=PGXO4s3Kors>



Begin sitting propped up on a firm surface. Your involved leg will remain extended, the opposite leg can be flexed or extended for comfort. Place a firm roll under your ankle, raising it approximately 6 inches. Maintain an upright posture with sits bones in a neutral position, hips not rolling to either side. Allow the leg to relax in this position. This may be a good time to apply ice on top of the knee to promote extension and pain management at the same time. Maintain this position for 5-10 minutes as tolerated.

Hamstring and Calf Stretch <https://www.youtube.com/watch?v=B80B1s7aW0s>



While sitting on a firm surface with leg extended in front of you, place a towel or strap around the ball of your foot and grasp with both hands. While maintaining an upright posture, keep the leg extended as arms gently pull towel until a moderate stretch is felt in the back of your leg. Hold for 15-30 seconds, repeat 5 times.

Quad Sets <https://www.youtube.com/watch?v=IFfsqdmIs-s>



With the leg supported on a level surface, active engage the quadriceps muscle by tightening the front of the thigh and focusing on pressing the back of your knee down. Maintain this muscle engagement for 3-5 seconds and release, repeat 10 times every hour.

Prone Knee Hang <https://www.youtube.com/watch?v=fhGWhjj2ols>



Start by laying down on the bed or couch with your lower legs hanging off the edge. Place a small rolled up towel under your thigh, just above the knee to reduce pressure on the knee cap. Allow your lower leg to relax off the edge of the table. Try to avoid muscle activation in this position, gravity will help straighten the knee with time. This may be a good time to apply ice on top of the knee to promote extension and pain management at the same time. Maintain this position for 5-10 minutes as tolerated.

Prone Terminal Knee Extension <https://www.youtube.com/watch?v=WX80vk1KR3I>



Start by laying face down on a firm surface, bed/couch is acceptable when needed. Curl your toes under so they are in contact with the ground. While keeping your hips on the floor, contract the front of your thigh in order to lift the front of the knee. Maintain this muscle activation for 3-5 seconds at a time. Relax and return to start position, repeat at least 10 times.

Exercises for Knee Flexion:

Heel Slides <https://www.youtube.com/watch?v=HSIq3ovXwgQ>



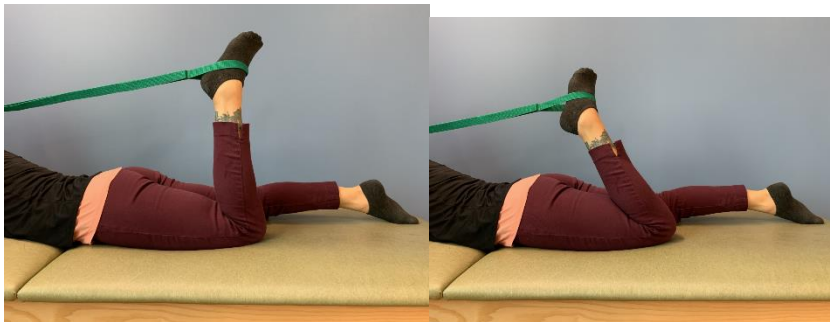
Laying down or sitting propped up, place a strap or a towel around your foot. Using the strap for assistance, allow knee to bend as heel slides towards buttock. Continue to pull on the strap until a moderate stretch is felt at knee or thigh. Hold for 15-30 seconds. Repeat 5 times.

Wall Slides <https://www.youtube.com/watch?v=o9FFrhSk1Ks>



Laying on your back position yourself with your legs extending up the wall. Slowly slide your foot down the wall as far as you reasonably can and hold before returning to the starting position. Use the opposite leg for additional stretch sensation. Hold for 15-30 seconds and repeat 5 times.

Prone Knee Flexion Stretch https://www.youtube.com/watch?v=Oownlh848_E



Place a belt or strap around the ankle of the involved leg. Lay on your stomach, using a pillow under hips or chest as needed for comfort. Grab the strap and use your hands to pull the strap over your shoulder. Pull on the strap until moderate stretch is felt in the thigh, with the foot coming closer to buttock. Hold for 15-30 seconds, repeat 5 times.

Stair-step Flexion Stretch



Stand tall at the bottom of the stairs and hold onto the rail. Place the foot of your surgical knee on the first step and carefully lean forward to bend the knee to the point of moderate stretch sensation. Hold the stretch for 5-15 seconds. Repeat 3-5 times. For a more intense stretch, place your foot on the next step and repeat as indicated.

Modified Quadricep Stretch



Sit at the edge of the bed or in a chair. Cross your unaffected leg over your affected (surgical) leg. Pull your heel under the table, using the front leg for additional pressure. Bend your knee as far as you comfortable can with a moderate stretch force.

Hold for 15-30 seconds. If needed you can use your unaffected leg behind the affected leg to help return it to the starting position. Repeat 5 times.