

Patellofemoral Pain Syndrome

Do you experience kneecap pain going up or down the stairs, after sitting in a car or movie theater for prolonged periods of time, or bending down to a squatting position?

You may be experiencing the pain that 2.5 million Americans experience, patellofemoral pain syndrome. Patellofemoral refers to the joint that includes the knee cap or the patella and the thigh bone or the femur. It can result from malalignment of the patella on the femur, weakness of the quadriceps muscles, or tight structures on the lateral aspect of the knee. Pain may be felt behind or around the knee cap, grinding noises may be heard during bending or straightening the leg, the knee may feel like it gives-way without any particular reason, or some mild swelling may be noted around the knee.

Many times conservative treatment of pain relief, strengthening, and stretching may relieve symptoms. The primary goals of rehabilitation are to re-establish motion, power, and stability to the joint.

Pain

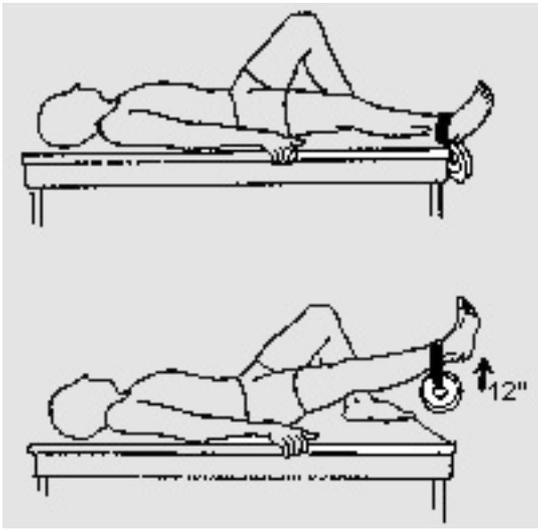
For pain, non steroidal anti-inflammatory medication such as Advil or Alleve can help decrease discomfort. Consult with your doctor for what is right for you. You can also use ice packs when the pain is in an acute phase, or a heating pad when your symptoms are less acute to treat your pain. These modalities should not be applied for longer than ten minute sessions.

Strengthening

Strengthening of all the musculature of the affected lower extremity may help take pressure off the kneecap.

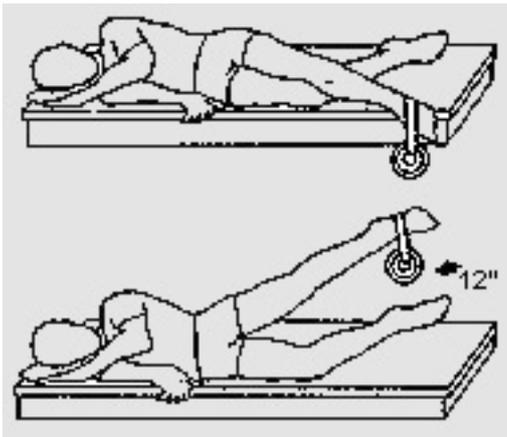
Straight leg raises:

This exercise is done lying on your back. The unaffected knee is bent to stabilize the back. The affected leg is kept straight by contracting the quadriceps with the toes facing the ceiling, and raised to the level of the bent knee, approximately 30 degrees, held for a count of one then back down to the table. This is done for 3 sets of 15 repetitions. See demonstration at fig.1.



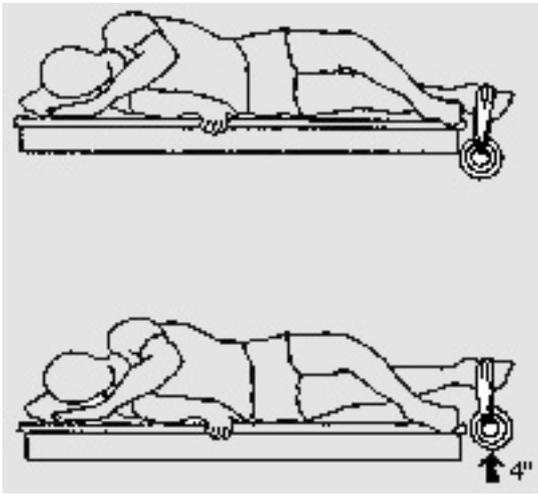
Hip abduction:

Lay on your side with the affected leg facing the ceiling. The bottom leg is bent and the top leg is kept straight. Keeping the leg straight, bring your foot towards the ceiling, hold for a count of one, then return the foot to the table. It is important that your body is straight and not bent at the hip. Do not allow your body to roll towards the stomach or back when doing this exercise. This exercise is done for 3 sets of 15 repetitions.



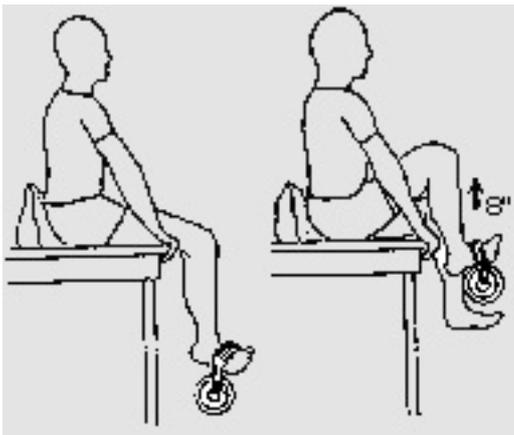
Hip adduction:

Laying on your side again, this time your affected leg is on the bottom. The opposite or top leg is bent and can be kept behind or brought in front of the straight leg. The bottom leg is kept straight and is raised, held for a count of one, and then returned to the table. This is done for 3 sets of 15 repetitions.



Hip flexion:

Sitting at the edge of a table or a chair with the back straight and keeping the knee flexed, bring the affected knee to the ceiling. Hold the leg in this position for a count of one then return to the starting position. The hands may be used for support on the surface. Do not lean forward or backward when doing this exercise. This exercise is done for 3 sets of 15 repetitions.



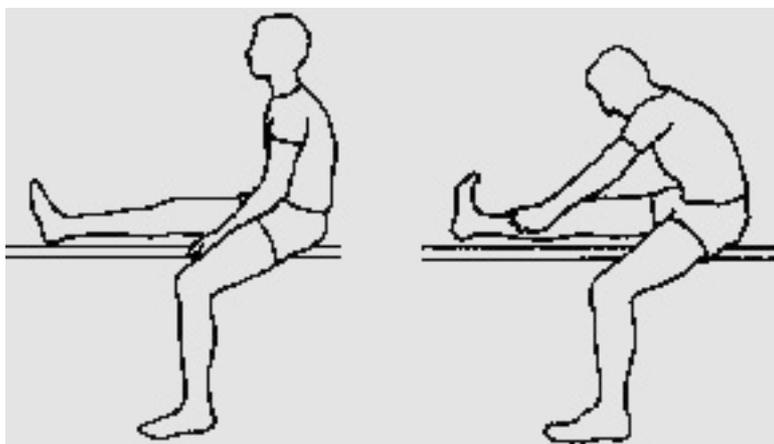
All of these exercises can be done with ankle weights. Start conservatively with a goal of exercising at twenty percent of your body weight.

Stretching

Excessive tightness above or below the kneecap may cause increased stress around and under the patella by not allowing normal movement. There are many different ways to stretch these muscles. The stretches discussed here are effective and easy to use throughout your day.

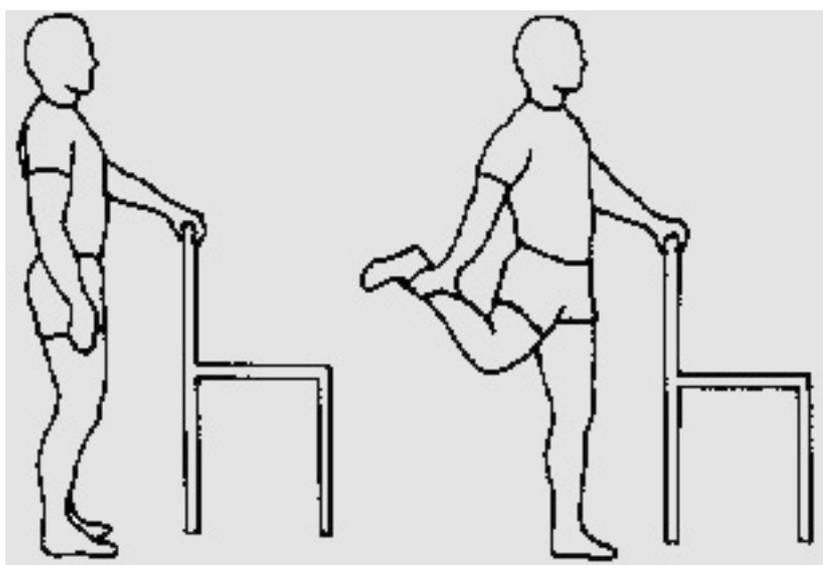
Hamstrings:

These posterior thigh muscles can be stretched in a seated position with the leg to be stretched straight, attempt to touch your toes with your fingers but keep your back flat. Hold this position for a count of 30 seconds. Repeat this stretch five times. The leg that is not being stretched can either be bent or straight according to your comfort.



Quadriceps:

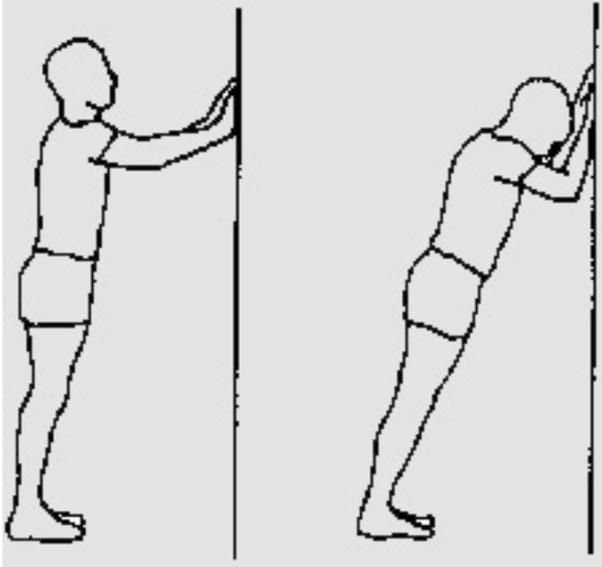
These anterior thigh muscles can be stretched in the standing position by holding the front of your ankle with the same side hand as the leg which is being stretched (right hand holds right ankle). Pull your foot up to your buttocks. Be careful not to bend at the waist and keep your back straight. Use the opposite hand for stabilization by holding onto a wall, post, chair, or doorknob. Hold this stretch for 30 seconds and repeat the stretch five times.



Gastrocnemius/Soleus:

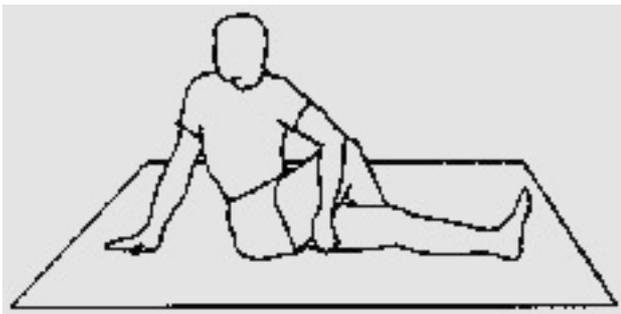
These are the muscles that make up the calves. This stretch is more commonly known as the classic runners stretch. Both of these muscles can be stretched standing facing a wall or other

supportive surface. Lean into the wall using your hands or forearms as support. Hold this stretch for 30 seconds. From this position bend at the knees, this will stretch the soleus muscle that does not cross the knee joint. Hold this stretch for an additional 30 seconds. Repeat these stretches five times.



Iliotibial Band:

This structure runs from your hip to your knee on the outside of your leg. To stretch, sit with both legs straight. Cross the leg to be stretched over the straight leg with the foot placed on the ground. Hold the knee with the opposite hand and pull your body across so that the opposite shoulder touches the stretched leg's knee. Hold this stretch for 30 seconds and repeat five times.



Remember not to bounce while stretching. Hold the stretch in a static position. These stretches can be done in the morning and at night before going to bed.