

PATELLAR (KNEECAP) SUBLUXATION

What is a subluxing patella?

A subluxing patella (kneecap) is a temporary, partial dislocation of the kneecap from its normal position in the groove in the end of the thigh bone (femur). This groove is located between two bumps at the end of the thigh bone called the femoral condyles.

How does it occur?

This temporary dislocation of the kneecap usually happens during forced leg straightening, with the kneecap moving out of the groove to the outer side of the knee.

The cause is usually an abnormality in the way your legs are built. You may have an underdevelopment of the inner thigh muscle or an overdevelopment of the outer thigh muscle. Your kneecap may be higher in the leg than usual. You may be knock-kneed or have underdevelopment of the outer (lateral) femoral condyle.

What are the symptoms?

You may feel the kneecap moving out of position. You may have swelling and pain behind the kneecap. You may have pain when you bend or straighten your leg.

How is it diagnosed?

Your healthcare provider will ask about your symptoms and examine your knee. He or she may be able to feel the kneecap slipping to the outside as you bend and straighten your leg. An X-ray may show underdevelopment of the lateral femoral condyle.

How is it treated?

Treatment may include:

- putting ice packs on your knee for 20 to 30 minutes every 3 to 4 hours for the first 2 or 3 days or until the pain goes away
- elevating your knee to help any swelling go away
- taking an anti-inflammatory medicine (adults aged 65 years and older should not take non-steroidal anti-inflammatory medicine for more than 7 days without their healthcare provider's approval)
- wearing a brace prescribed by your healthcare provider to keep your kneecap in place

- doing exercises to strengthen the inner side of the thigh muscle (quadriceps)

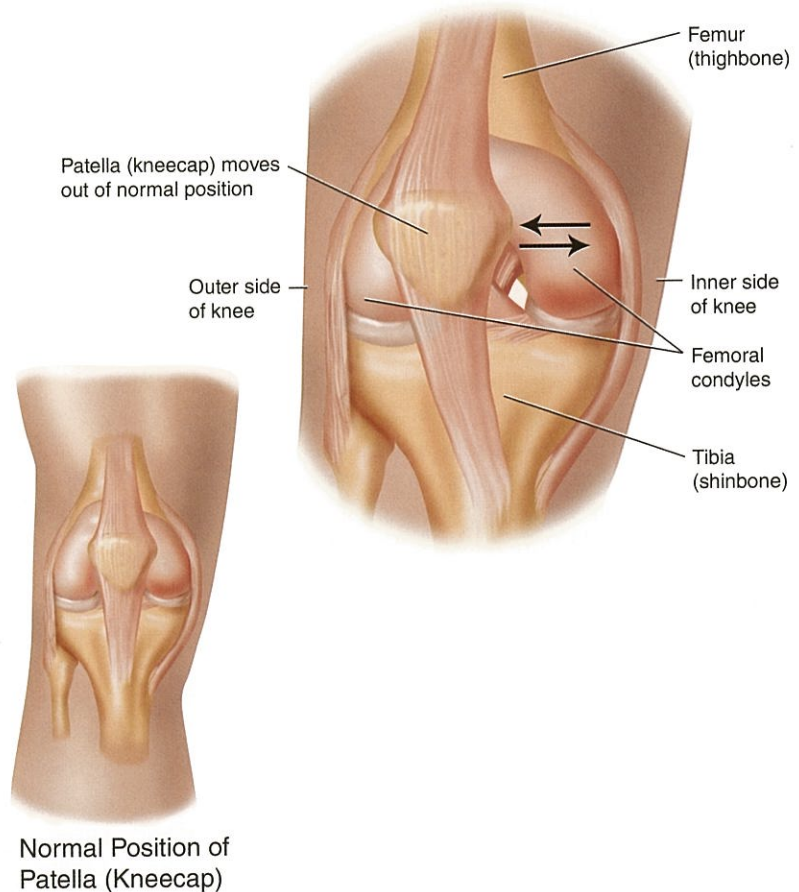
Some people need surgery to keep the kneecap from subluxing.

While you are recovering from your injury you will need to change your sport or activity to one that will not make your condition worse. For example, you may need to bicycle instead of run.

When can I return to my sport or activity?

The goal of rehabilitation is to return you to your sport or activity as soon as is safely possible. If you return too soon you may worsen your injury, which could lead to permanent damage. Everyone recovers from injury at a different rate. Return to your sport or activity will be determined by how soon your knee recovers, not by how many days or weeks it has been since your injury occurred. In general, the longer you have symptoms before you start treatment, the longer it will take to get better.

PATELLAR (KNEECAP) SUBLUXATION



You may safely return to your sport or activity when, starting from the top of the list and progressing to the end, each of the following is true:

- Your injured knee can be fully straightened and bent without pain.
- Your knee and leg have regained normal strength compared to the uninjured knee and leg.
- Your knee is not swollen.
- You are able to jog straight ahead without limping.
- You are able to sprint straight ahead without limping.
- You are able to do 45-degree cuts.
- You are able to do 90-degree cuts.

- You are able to do 20-yard figure-of-eight runs.
- You are able to do 10-yard figure-of-eight runs.
- You are able to jump on both legs without pain and jump on the injured leg without pain.

If you develop pain, swelling, or the feeling that your kneecap is moving out of place again, you need to contact your healthcare provider.

How can I prevent a subluxing kneecap?

A subluxing kneecap is best prevented by keeping your thigh muscles strong, especially the group of muscles on the inner side of the thigh.

PATELLAR (KNEECAP) SUBLUXATION REHABILITATION EXERCISES

You may do all of these exercises right away. It is important to stretch the muscles in the back of your leg. It is also important to strengthen the muscles on the top of your thigh so your kneecap won't sublux again.

KNEE

1. STANDING HAMSTRING STRETCH: Place the heel of your leg on a stool about 15 inches high. Keep your knee straight. Lean forward, bending at the hips until you feel a mild stretch in the back of your thigh. Make sure you do not roll your shoulders and bend at the waist when doing this or you will stretch your lower back instead. Hold the stretch for 15 to 30 seconds. Repeat 3 times for each leg.



STANDING HAMSTRING STRETCH

4. QUAD SETS: Sitting on the floor with one leg straight and your other leg bent, press the back of your knee of your straight leg into the floor by tightening the muscles on the top of your thigh. Hold this position 10 seconds. Relax. Do 3 sets of 10.



QUAD SETS



QUADRICEPS STRETCH

2. QUADRICEPS STRETCH: Stand an arm's length away from the wall, facing straight ahead. Brace yourself by keeping one hand against the wall. With your other hand, grasp the ankle of the opposite leg and pull your heel toward your buttocks. Don't arch or twist your back. Keep your knees together. Hold this stretch for 15 to 30 seconds. Repeat 3 times on each side.

5. STRAIGHT LEG RAISE: Lie on your back with your legs straight out in front of you. Bend one knee and place the foot flat on the floor. Tighten up the top of your thigh muscle on the opposite leg and lift that leg about 8 inches off the floor, keeping the thigh muscle tight throughout. Slowly lower your leg back down to the floor. Do 3 sets of 10 on each side.



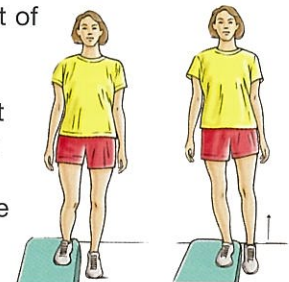
STRAIGHT LEG RAISE

3. SIDE-LYING LEG LIFT: Lying on your side, tighten the front thigh muscles on your top leg and lift that leg 8 to 10 inches away from the other leg. Keep the leg straight. Do 3 sets of 10.



SIDE-LYING LEG LIFT

6. STEP-UP: Stand with the foot of one leg on a support (like a block of wood) 3 to 5 inches high. Keep your other foot flat on the floor. Shift your weight onto the leg on the support and straighten the knee as the other leg comes off the floor. Lower your leg back to the floor slowly. Do 3 sets of 10.



STEP-UP

7. WALL SQUAT WITH A BALL: Stand with your back, shoulders, and head against a wall and look straight ahead. Keep your shoulders relaxed and your feet 2 feet away from the wall and a shoulder's width apart. Place a soccer or basketball-sized ball behind your back. Keeping your head against the wall, slowly squat down to a 45 degree angle. Your thighs will not yet be parallel to the floor. Hold this position for 10 seconds and then slowly slide back up the wall. Repeat 10 times. Build up to 3 sets of 10.



WALL SQUAT WITH A BALL

8. KNEE STABILIZATION: Wrap a piece of elastic tubing around the ankle of one leg. Tie a knot in the other end of the tubing and close it in a door.

A. Stand facing the door on the leg without tubing and bend your knee slightly, keeping your thigh muscles tight. While maintaining this position, move the leg with the tubing straight back behind you. Do 3 sets of 10.

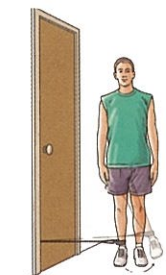


B. Turn 90° so the leg without tubing is closest to the door. Move the leg with tubing away from your body. Do 3 sets of 10.

C. Turn 90° again so your back is to the door. Move the leg with tubing straight out in front of you. Do 3 sets of 10.



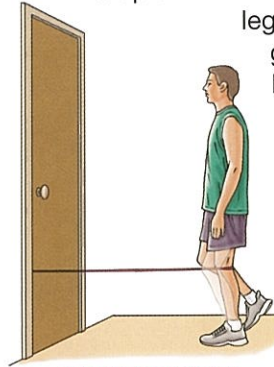
KNEE STABILIZATION



D. Turn your body 90° again so the leg with tubing is closest to the door. Move the leg with tubing across your body. Do 3 sets of 10.

Hold onto a chair if you need help balancing. This exercise can be made even more challenging by standing on a pillow while you move the leg with tubing.

9. RESISTED TERMINAL KNEE EXTENSION: Make a loop from a piece of elastic tubing by tying a knot in both ends, and closing both knots in a door. Step into the loop so the tubing is around the back of one leg. Lift the other foot off the ground. Hold onto a chair for balance, if needed. Bend the knee on the leg with tubing about 45 degrees. Slowly straighten your leg, keeping your thigh muscle tight as you do this. Do this 10 times. Do 3 sets. An easier way to do this is to perform this exercise while standing on both legs.



RESISTED TERMINAL KNEE EXTENSION

10. STANDING CALF STRETCH: Facing a wall, put your hands against the wall at about eye level. Keep one leg back with the heel on the floor, and the other leg forward. Turn your back foot slightly inward (as if you were pigeon-toed) as you slowly lean into the wall until you feel a stretch in the back of your calf. Hold for 15 to 30 seconds. Repeat 3 times. Do this exercise several times each day.



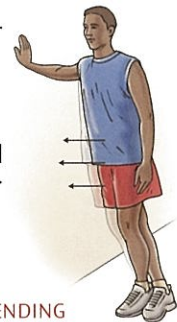
STANDING CALF STRETCH

11. CLAM EXERCISE: Lie on one side with your hips and knees bent and feet together. Slowly raise your top leg toward the ceiling while keeping your heels in contact with each other. Hold for two seconds and lower slowly. Do 3 sets of 10 repetitions.



CLAM EXERCISE

12. ILIOTIBIAL BAND STRETCH: Side-bending: Cross one leg in front of the other leg and lean the opposite direction from the front leg. Reach the arm on the side of the back leg over your head while you do this. Hold this position for 15 to 30 seconds. Return to the starting position. Repeat 3 times.



ILIOTIBIAL BAND STRETCH: SIDE-BENDING