

Patella Dislocation

What is a Patella dislocation?

The patella (kneecap) contacts the femur with normal knee movement. The joint is called the “patellofemoral joint” Sometimes a twisting motion or a traumatic hit can cause the patella to pop out of place, usually towards the outside of the knee. Sometimes the kneecap will pop back in by itself, and sometimes you may need to see a healthcare provider to “reduce” the patella back in place. There are supporting structures around the patella which help prevent this motion, but these can often be stretched or damaged when the patella dislocates.



Risk factors for patella dislocation

There are several risk factors which make a person more likely to have a patella dislocation

- Tightness, weakness or imbalance of the muscles of the thigh preventing the kneecap from sliding smoothly with knee motion
- Flat feet, overpronation
- Knock-knees, Malalignment of the kneecap or patella instability
- Shallow trochlear groove, which is the groove that the patella usually slides up and down in in the knee

Treatment

Initial treatment includes reduction of the patella back into place which may happen on its own or at an emergency room or urgent care. After that depending on how bad the injury was you may be asked to wear a knee immobilizer or special cast. Follow your provider's instructions for the brace, however most patients can take the brace off when not putting weight on their leg. It's also helpful to remember the following acronym, RICE.

R	I	C	E
REST	ICE	COMPRESSION	ELEVATION
Rest from all activities that cause pain or limping. If necessary, use crutches until you can walk without pain or limping.	Place an ice bag on the knee for 15-20 minutes for the first 24 to 72 hours and/or after activities.	Use an elastic bandage to wrap the affected area using even pressure. Wear this until swelling decreases. Loosen the wrap if your toes turn blue or feel cold.	Elevated affected area above heart until swelling subsides.

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Once you are able to walk without pain or a limp, you may begin the following exercises and your provider may recommend you work with a Physical therapist for 4-6 weeks to prevent reinjury.

Patella dislocation Stage I exercises

1. Vastus Medialis Oblique Quadriceps Sets -

Sit on the floor with your injured leg straight in front of you. Press the back of your knee down while tightening the muscles on the top of your thigh. Concentrate on tightening the muscles on the inner side of your kneecap. Hold this position for 5 seconds. Complete 3 sets of 10.



2. **Straight Leg Raise** - Sit on the floor with the injured leg straight and the other leg bent, foot flat on the floor. Pull the toes of your injured leg toward you as far as you can, while pressing the back of your knee down and tightening the muscles on the top of your thigh. Raise your leg six to eight inches off the floor and hold for 5 seconds. Slowly lower it back to the floor. Complete 3 sets of 10.



3. **Straight Leg Stretch** - Lay down in a bed or on the floor on your back and place a towel or pillow under your ankle or heel and sit for 3-5 minutes allowing for gravity to straighten your knee. You may also place a small weight over the knee.



4. **Heel Slides** - Lay down in a bed or on the floor on your back, drag your heel towards your buttocks on the bed/floor so your knee bends. Stop when you feel pain, a small stretch is normal, hold for 5 seconds, repeat 10 times. Do 3 sets of 10.



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5. **Leg Lifts: Abduction** - Lie on your uninjured side and place leaning on the elbow of your uninjured side and using the arm of the injured side in front of you to stabilize your body. Slowly with the injured leg up, hold for 5 seconds then lower slowly. Be sure to keep your hips steady and don't roll forwards or backwards. Complete 3 sets of 10.



Abduction - Lie on your injured side with your top leg bent and flat foot placed in front of the injured leg, which is kept straight. Raise your injured leg as far as you can comfortably and hold it there for 5 seconds. Keep your hips still while you are lifting your leg. Hold this position for 5 seconds, and then slowly lower your leg. Complete 3 sets of 10.



Extension - Lie on your stomach. Raise your injured leg as far as you can comfortably and hold it there for 5 seconds. Keep your hips still while you are lifting your leg. Hold this position for 5 seconds, and then slowly lower your leg. Complete 3 sets of 10.

Core exercises

DO NOT PROGRESS WITH THESE EXERCISES UNTIL CLEARED TO DO SO!

6. **Abdominal Contraction** - Lie on your back with knees bent and hands resting below ribs. Tighten abdominal muscles to squeeze ribs down toward back. Be sure not to hold breath. Hold 30 seconds. Relax. Repeat 3 times on each side.



7. **Pelvic Tilts** - Lie on your back with both knees bent and feet planted on the floor. Gently tuck your buttocks under and front of hips slightly up and think of pulling your belly button in towards your back as you do this. Hold for 10 seconds and repeat 10 times.



8. **Abdominal Crunch** - Lie on your back with both knees bent and feet planted on the floor. Tuck your buttocks under like in the pelvic tilt exercise. Gently place both hands behind your head for support and tuck your upper body in. **DO NOT PULL YOUR HEAD WITH YOUR HANDS.** The movement should come from squeezing your abdominal muscles.



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9. **Forearm Plank** - Lie down facing the floor on your forearms. Raise yourself up until resting on your knees and elbows. Maintain your body straight from your head to your knees. Hold for five to ten seconds. If this is easy for you, lift your knees up off the floor. You may be able to work up to holding plank for 30 seconds to 1 minute, but only do this if you can keep your body straight like a board.



10. **Plank (Upper Pushup)** - Lie down facing the floor with your hands planted on either side next to your chest. Raise yourself up until resting on your knees and hands. Maintain your body straight from your head to your knees. Hold for five to ten seconds. If this is easy for you, lift your knees up off the floor and keep a straight line from head to toes. You may be able to work up to holding plank for 30 seconds to 1 minute, but only do this if you can keep your body straight like a board.



11. **Opposite Arm and Leg** - Lie down facing the floor. You may use a rolled up towel under your forehead for comfort. Lift up the opposite arm and leg two inches above the floor. Hold this position for five to ten seconds. Repeat 10 times on each side. Do three sets.



12. **Dead Bugs** - Lie on your back and place both hands under your buttocks. Bring both legs up to point to the ceiling with knees slightly bent. Gently lower one leg towards the ground then slowly back up. Try to keep your lower back on the floor. Repeat with opposite leg. Complete 3 sets of 10.



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Patella dislocation Stage II exercises

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13. **Standing Calf Stretch** - Facing a wall, put your hands against the wall at about eye level. Keep the uninjured leg forward and your injured leg back about 12-18 inches behind your uninjured leg. Keep your injured leg straight and your heel on the floor and keep your toes pointed towards the wall. Next, do a slight lunge by bending the knee of the forward leg. Lean into the wall until you feel a stretch in your calf muscle. Hold this position for 30-60 seconds, and repeat 3 times.



14. **Standing Soleus Stretch** - Facing a wall, put your hands against the wall at about eye level. Keep the uninjured leg forward and your injured leg back about 4-6 inches behind your uninjured leg. Keep both heels on the ground and gently bend your knees until you feel a stretch in your calf muscle. Hold this position for 30-60 seconds, and repeat 3 times.



15. **Hamstring Stretch** - Lie on your back and bring affected leg towards your chest. Grab the back of your thigh and try to extend your leg. Hold this position for 30 to 60 seconds, feeling a stretch in the back of your thigh. Repeat three times. You may also try this with a towel around your foot if it is more comfortable.



16. **Quadriceps Stretch** - Stand sideways to a wall, about an arm's length away from the wall, with your injured leg towards the outside. Facing straight ahead, keep the hand nearest the wall against the wall for support. With your other hand, grasp the ankle of your injured leg and pull your heel up toward your buttocks. Do not arch or twist your back. Hold this position for 30 seconds. Repeat three times.



This may also be done while laying on the opposite side and grasping the ankle of the affected leg. Do not arch or twist your back. Hold this position for 30 seconds. Repeat three times.



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Alternative Quadriceps Stretch - Place affected leg on a sturdy chair or low stool, and place opposite hand on a wall to the side of you. Slowly bend front leg, hold for 30 seconds, repeat 3 times.



17. **Clamshells** - Lie on your side with your knees slightly bent, keeping your legs and ankles together. Open and close your knees like a clam by lifting your top knee up until its parallel with your hip. Keep your feet together throughout the exercise, move slowly and controlled as if someone is pushing against your knee while you are pressing it up. Complete 3 sets of 10.



18. **Sidesteps with Theraband** - Place theraband around your ankles and lower down into a half squat with knees bent and toes pointing forwards. Step to the right with your right foot while staying low in your squat position, then bring your left foot in. Repeat 10 times in each direction. Do 3 sets.



Prevention

1. **Stay in shape**
2. **Stretch** - before doing any strenuous activity, do a 5 minute warm up and do stretching exercises. Remembering to stretch your knee will help keep the structures around the knee flexible and less likely to be irritated by activity
3. **Increase training gradually** - dramatic increases in activity over a short period of time can result in overuse injuries
4. **Use proper running gear** - make sure that your shoes fit properly and provide good support
5. **Use proper running form**
6. **Strengthening of thigh, hip and trunk muscles** - Helps to “off-load” stress on the patellofemoral joint using the above mentioned exercises

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 longer healing times. Everyone recovers at a different rate. Returning 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 pain began. Typically for patellar dislocations it will take about 3 months before returning to sporting activities. After successful completion of physical therapy and a home exercise program, it may be recommended to use a patella stabilizing or “J” brace which can be purchased at most sporting good stores, medical supply stores and online through retailers like amazon.com.