Patellofemoral Pain Syndrome

What is patellofemoral pain?

Patellofemoral pain is a common knee problem. If you have this condition, you feel pain under and around your kneecap. The pain can get worse when you're active or when you sit for a long time. You can have the pain in one or both knees.
The exact cause of patellofemoral pain isn't known. It probably has to do with the way your kneecap (patella) moves on the groove of your thigh bone (femur).

What can I do to help my knee get better and hurt less?

- **Take a break** from physical activity that causes a lot of pounding on your legs, such as running, volleyball or basketball. If you want to keep exercising, try swimming or another low-impact activity. You may want to try working out on nonimpact elliptical trainers, which are popular at gyms. Because these machines support your body weight, they put less stress on your knees. As your knees feel better, you can go back to your normal sports. But do this slowly, increasing the amount of time you do the sports activity a little at a time.
- T**he exercises** shown in this handout can help strengthen your muscles and relieve your pain. Each exercise should take a few minutes. Doing them twice a day is a good start. Your doctor will tell you which exercises are right for you. The first 2 are usually the most important ones. These 2 exercises make your front thigh muscles ("quads") stronger. This is important because your quad muscles control the movement of your kneecap.
- **Talk to your doctor** about footwear. It may help to bring your shoes in for the doctor to see. Proper walking or running shoes can help knee pain. Even a simple arch support insert from a shoe store can be helpful. This insert is less expensive than a custom-made support or brace.
- **Ice your knees** for 10 to 20 minutes after activity. This can ease the pain and speed up healing. To keep your hands free, use an elastic wrap to hold the ice pack in place. A medicine such as ibuprofen (one brand name: Motrin) may also help relieve your pain, but talk to your doctor before you take this medicine.

If the pain does not stop after 3 or 4 weeks, call your doctor.

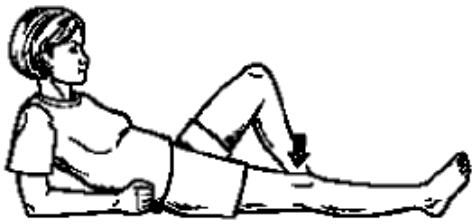
How is it treated?

Usually, putting ice on your knee, changing your activities, and following a physical therapy program works best. This type of program may include exercises to make your muscles stronger and more flexible. Taping the knee or using show insoles can be helpful for some people. It may take weeks or months of treatment for the pain to go away.

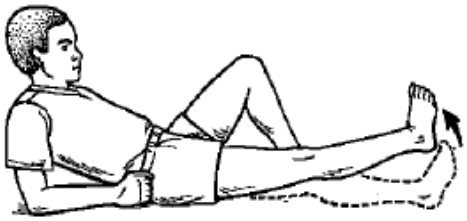
Exercises to help your knee pain

Be patient! Keep exercising to get better. Patellofemoral pain can be hard to treat, and your knees won't get better overnight. Some people are lucky and get better quickly. But it might take 6 weeks or longer for your knee to get better. You'll be less likely to get patellofemoral pain again if you stay in good shape, but don't make sudden changes in your workouts.

Here are some exercises to help relieve your knee pain. After you do all the exercises as shown in the drawings, reverse your position, and do the exercises with your other leg, so both knees get the benefit of stretching.



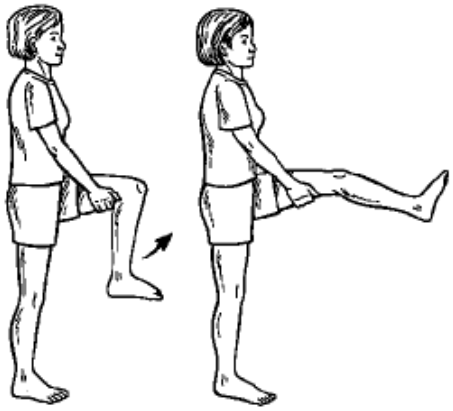
1. Quadriceps strengthening: isometrics. Position yourself as shown above. Hold your right leg straight for 10 to 20 seconds and then relax. Do the exercise 5 to 10 times.



2. Quadriceps strengthening: straight leg lift. Position yourself as shown above. Raise your right leg several inches, and hold it up for 5 to 10 seconds. Then lower your leg to the floor slowly over a few seconds. Do the exercise 5 to 10 times.

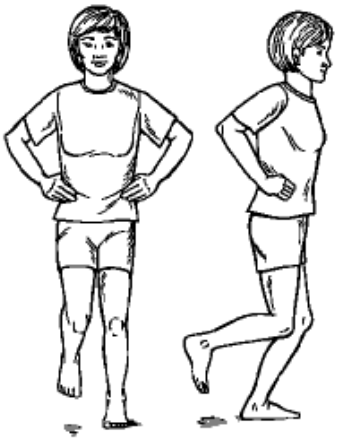
3. Iliotibial band and buttock stretch (right side shown). Position yourself as shown above. Twist your trunk to the right and use your left arm to "push" your right leg. You should feel the stretch in your right buttock and the outer part of your right thigh. Hold the stretch for 10 to 20 seconds. Do the exercise 5 to 10 times.

4. Iliotibial band stretch (left side shown). Position yourself as shown above, with your right leg crossed in front of your left leg. Hold your hands together and move them toward the floor. You should feel a stretch in the outer part of your left thigh. Hold the stretch for 10 to 20 seconds. Do the exercise 5 to 10 times.



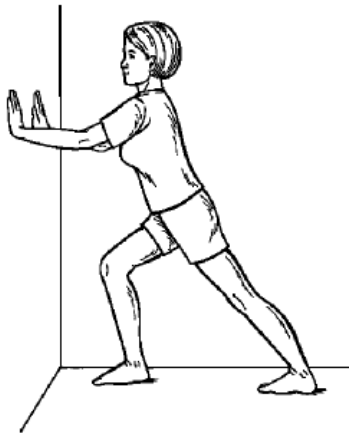
5. Hamstring stretch. Position yourself as shown in the left-hand drawing above. Bend your left knee. Grip your thigh with your hands to keep the thigh steady. Straighten your left leg in the air until you feel a stretch. Hold the stretch for 5 to 10 seconds. Do the exercise 5 to 10 times.

6. Hip adductor strengthening. While sitting, squeeze a rubber ball between your knees. Hold the squeeze for 5 to 10 seconds. Do the exercise 5 to 10 times. (If you don't have a ball, put your hands or fists between your knees and then squeeze.)



7. Hip abductor strengthening (left side shown, front and side views). Position yourself as shown above, standing on your left leg with the knee slightly bent. Slowly raise your right foot about 30 degrees, hold for a few seconds, and then slowly lower the foot and straighten both legs. Do the exercise 10 times. Don't let your pelvis tilt (be crooked), and don't let your knees turn inward during bending.

8. Hip and buttock stretch (left side shown). Position yourself as shown above, with your left leg over your right leg, and place your hands over your left knee. Pull the knee slightly toward you while sitting up straight. Hold the position for 20 seconds, and then rest for several seconds. Do the exercise 6 times.



9. Calf stretch. Position yourself against a wall as shown above. Keep your left heel on the ground to feel the back of the leg stretch. Hold for 10 to 20 seconds. Do the exercise 6 to 10 times.

Source

Written by familydoctor.org editorial staff.

Patellofemoral Pain Syndrome: A Review and Guidelines for Treatment by MS Juhn, D.O. (*American Family Physician* November 1, 1999, http://www.aafp.org/afp/991101ap/2012.html)

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