

# Anterior knee pain: Patellofemoral Pain

## What is patellofemoral pain?

Patellofemoral pain is a common knee problem. It results in pain that feels as if it is deep behind the knee cap, or just general pain around the knee. The pain can get worse when you're active or when you sit for a long time. It can affect one or both knees.

The exact cause of patellofemoral pain isn't known. It can be due to arthritis and your doctor will check for this. In the absence of arthritis, it probably has something 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?

- Reduce high impact physical activity that 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, and if you do run, do so on treadmills. As your knees feel better, you can slowly go back to your normal sports. But do this slowly, and increase the amount of time you do the sports activity by only about 10% a week.
- Do the exercises shown in this handout. Each exercise should take only a few minutes. Doing them twice a day is a good start. Your doctor will tell you which exercises are best for you. The most important ones are usually the first two. These two exercises make your front thigh muscles (called "quads") stronger. This is important because your quad muscles control the movement of your kneecap.
- Talk to your doctor about footwear. It would 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 much less expensive than a custom-made orthotic.
- Ice your knees for 10 to 20 minutes after activity. A medicine like ibuprofen may also help, but talk to your doctor before you take this medicine.
- Consider seeing a specialist for further advice on more advanced interventions.

## Be patient!

Continue the exercises (below) 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. You'll be less likely to get this pain again if you stay in good shape, but don't make sudden changes in your workouts.

If you have ongoing pain, consult a specialist to discuss other interventions.

Here are some exercises to help 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:  
Position yourself as shown. Hold your right leg straight for 30 seconds and then relax. Do the exercise 5 to 10 times.



2. Quadriceps strengthening: straight leg lift. Position yourself as shown. Raise your right leg several inches and hold it up for 15 seconds. Then lower your leg to the floor slowly over a few seconds. Do the exercise 5 to 10 times.

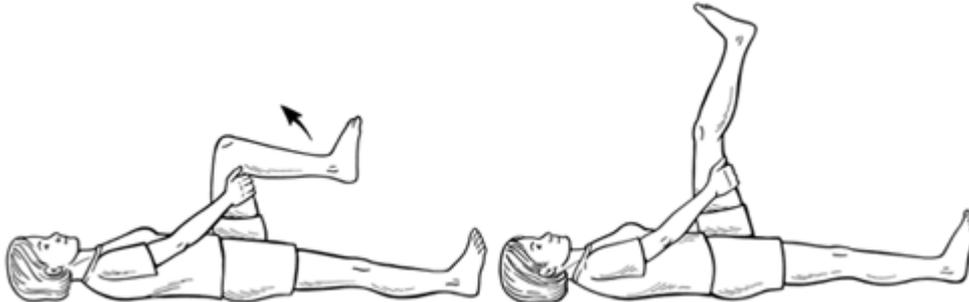
3. Iliotibial band and buttock stretch(right side is shown). Position yourself as shown. Twist your trunk to the right and use your left arm to "push" your right leg. You should feel the stretch in your right buttock and the outer part of your right thigh. Hold the stretch for 30 seconds. Do the exercise 5 to 10 times.





4. Iliotibial band stretch (left side is shown). Position yourself as shown, 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 30 seconds. Do the exercise 5 to 10 times.

5. Hamstring stretch. Position yourself as shown in the bottom drawing. 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 30 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 15 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, 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, and don't let your knees turn inward during bending. It helps to do this in front of a mirror!





8. Hip and buttock stretch (left side shown). Position yourself as shown, 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 very straight. Hold the position for 30 seconds and then rest for several seconds. Do the exercise 6 times.

9. Calf stretch. Position yourself against a wall as shown. Keep your left heel on the ground to feel the back leg stretch. Hold for 30 seconds. Do the exercise 6 to 10 times.



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This handout provides a general overview on this topic and may not apply to everyone. To find out if this handout applies to you and to get more information on this subject, talk to a doctor.