GRSM Grand River Sports Medicine Centre INJURY INFO

PATELLOFEMORAL PAIN SYNDROME

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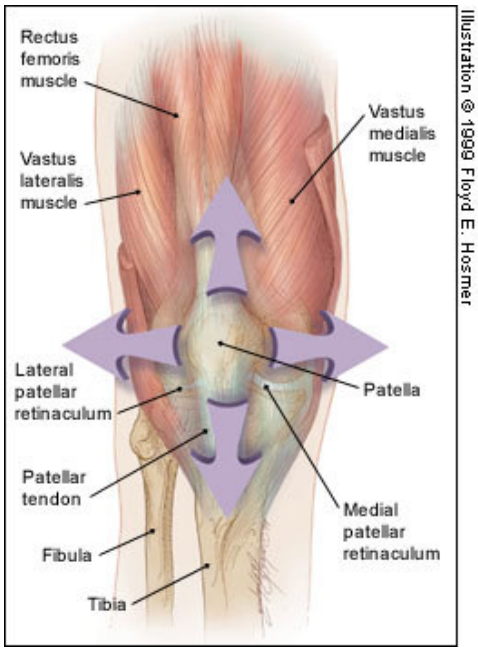
Patellofemoral pain syndrome (PFPS) is a common problem in the knee. PFPS causes pain around or behind the kneecap, which is typically worse when squatting, walking downhill or downstairs, when you are active, or even after sitting for a long time. The cause of PFPS is not known, but the basic problem is that the kneecap (the patella) slides abnormally against the thigh (the femur).



Many factors can contribute to PFPS.

Abnormal Foot Mechanics or Poor Footwear: Poor mechanics of the foot (for example very flat feet or arches that collapse when walking) can cause the knees to rotate inward and lead to altered movement of the kneecap. Shoes that don't give the proper support can emphasize this.

Tight muscles: Tight thigh or hip muscles can pull the thigh or kneecap in different directions, which can change the way the kneecap moves.

Weak or overused muscles at the front of the thigh: The quadriceps muscle uses the kneecap as a pulley. If the quads muscle is too weak or overused, it can pull through the kneecap and cause pain.

Weak hip muscles: Hip muscles control the position of the thigh and pelvis. If the hip muscles are weak, the thigh may turn in too much or the pelvis may drop down. These can both lead to changes in the way the muscles pull on the kneecap.

Twisting the knee: Sports like figure skating or dancing require a lot of twisting around the knee. The kneecap can move out of its groove, causing pain.

Training error: Insufficient warm-up or cool-down, not stretching, poor conditioning, and poor training techniques can also contribute to PFPS.

Age: Adolescents are particularly prone to PFPS because their bones grow quickly. Their muscles can't keep up and become tight, pulling on the kneecap.

There are many options for managing PFPS.

First, stop doing things that hurt: Temporarily alter your activities to reduce pain behind or around the kneecap. To keep in shape, try activities that do not involve a lot of impact or squatting, like swimming or elliptical trainers.

See a family doctor or sports medicine physician: A physician can assess your condition and order x-rays or other investigation if necessary.

Consider orthotics or proper footwear: If you have poor foot mechanics (ie. very flat feet or fallen arches), custom orthotics (arch supports) can help align your foot and knee. The right walking or running shoe also makes a big difference.

Bracing and taping: A brace or tape works by pulling the kneecap toward the inside of the knee, which can help relieve pain in some cases. Because your kneecap movement is quite complicated, knee braces don't work for everyone. The best option is to meet with a bracing specialist and try on several braces. Bracing is not a substitute for an exercise program to correct existing muscle imbalances.

Therapeutic exercise: A physiotherapist or athletic therapist will assess your body to determine which muscle imbalances are contributing to your PFPS. He or she will give you a series of individualized exercises and stretches to perform daily. It is important that you remain committed to your exercise program, since PFPS does not get better overnight and can come back if you return to your training/activities too soon.

Prevention: Before starting a new exercise program or sport, it is wise to consult a sports medicine specialist to identify imbalances in your body mechanics or muscles.

Patellofemoral pain is common in active individuals of all ages. Prevention is the best medicine, but if the symptoms of PFPS occur, see a family doctor sooner rather than later.

Gena Van Rooyen, BSc(Kin), MSc(PT), is a graduate from McMaster University's physiotherapy program. Gena has an interest in sports injuries through her lifetime participation in sports. Currently, she enjoys running and mountain biking.