

ATHLETE'S EDGE

SPORTS MEDICINE EDUCATION AND INFORMATION FOR WATERLOO REGION

Patellofemoral Syndrome

Recognition, Treatment and Rehabilitation

Patellofemoral Syndrome

Chondromalacia patella is the softening and breakdown of the tissue (cartilage) that lines the underside of the kneecap (patella).

It is a common cause of anterior knee pain.

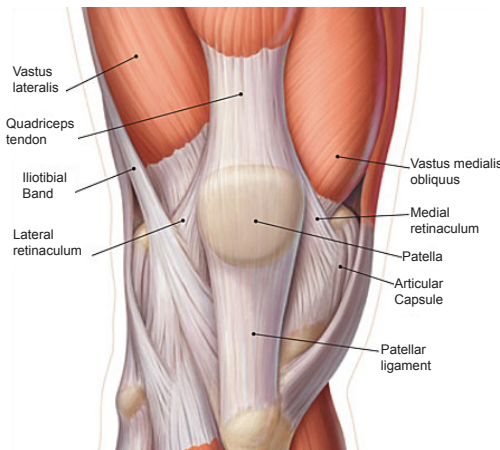
Malalignment of the knees and/or feet can cause excess lateral "tracking" of the patella.

You may display:

- increased "Q angle"
- gait (e.g. over-pronation)
- deficient VMO (vastus medialis) muscle strength.

Knee pain in Athletes

Many factors contribute to anterior knee pain in an athlete, including patella instability, weak quadriceps muscles, tight hamstring muscles, gait malalignment such as over-pronation and knee malalignment such as genu varus (bow legs) or genu valgus (knock knees). You should be referred to the appropriate health care provider (e.g. sports medicine doctor, physiotherapist, podiatrist) for advice and rehab.



Straight knee: low pressure

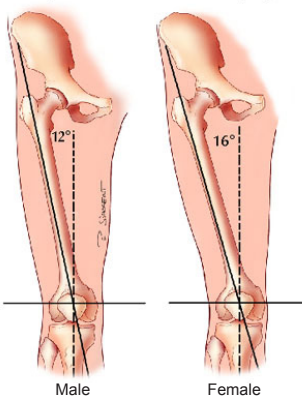


Bent knee: high pressure



Chondromalacia of the patella occurs in adolescents and young adults. The condition is more common in females. It can be related to the abnormal position of the knee. Your kneecap (patella) sits over the front of your knee joint. As you bend or straighten your knee, the underside of the patella glides over the bones that make up the knee.

Comparison of male and female Q angles



Strong tendons help attach the patella to the bones and muscles that surround the knee. The patellar tendon attaches the kneecap to the shin bone. The quadriceps tendon attaches the thigh muscles to the top of the kneecap. Problems begin when the kneecap does not move properly and rubs against the lower part of the thigh bone. This may occur because:

- The kneecap is in an abnormal position (also called poor alignment of the patellofemoral joint)
- There is tightness or weakness of the muscles on the front and back of your thigh.
- You are doing too much activity that places extra stress on the kneecap (such as running, jumping or twisting, skiing, or playing soccer)
- You have flat feet

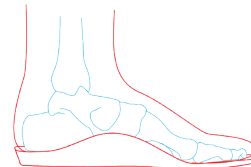
Symptoms

- **A grating or grinding sensation when the knee is flexed (moved so that the ankle is brought closer to the back of the thigh)** When you flex your knee, you may feel a grinding sensation below the kneecap. Pressing the kneecap when the knee is straightening out may be painful.
- **Knee pain in the front of the knee that occurs when you get up after sitting for a long period of time**
- **Knee pain that worsens when you use stairs or get out of a chair**
- **Knee tenderness** The knee may be tender and mildly swollen, and the kneecap may not be perfectly lined up with the femur (thigh bone)
- **X-rays are usually normal, although a special x-ray view of the kneecap may show signs of arthritis or tilting.**

Chondromalacia of the patella can also be a sign of arthritis of the kneecap, which is usually seen in older people. See Knee Osteoarthritis in Athletes' Edge publications.

People who have previously had a dislocation, fracture, or other injury to the kneecap are more likely to develop chondromalacia.

- Rest the knee, temporarily taking nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, naproxen, or aspirin to help relieve pain.
- Physiotherapy, especially quadriceps strengthening and hamstring stretching, may be helpful.
- Stretch the muscles on the back (hamstrings) and front (quadriceps) of your upper leg. Massage therapy can be useful for stretching.
- Either a PT or an RMT can teach you ways to make these muscles tighter. Stronger muscles will help hold your kneecap in the correct position.
- If you need to lose weight, find out how.
- Changing the way you exercise may help:
- Avoid running straight down hills; walk down instead.
- Bicycle or swim, instead of running.
- Reduce the amount of exercise you do.
- Run on a smooth, soft surface such as a track, rather than on cement.
- Ask about special shoe inserts and support devices (orthotics) may help people with flat feet.
- Learn taping techniques to realign the kneecap may help prevent symptoms.
- Make sure your running shoes are made well, fit well and have good cushioning inside and in the soles.



If the pain does not improve and there are signs of arthritis developing around the kneecap, surgery may be an option. There are excellent braces on the market, off-the-shelf and custom-made which are light-weight, with special hinges designed to “unload” the knee joint during activity.



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