

Patellofemoral Pain Syndrome



Have you been experiencing bad knee pain after sitting for prolonged periods of time at your desk job or after participating in activities like running and jumping? If you answered yes to this question then you may be experiencing PFP, Patellofemoral Pain, also commonly known as runner's knee. PFP is one of the most common types of knee pain people experience. It accounts for around 20-25% of all reported knee pain cases!

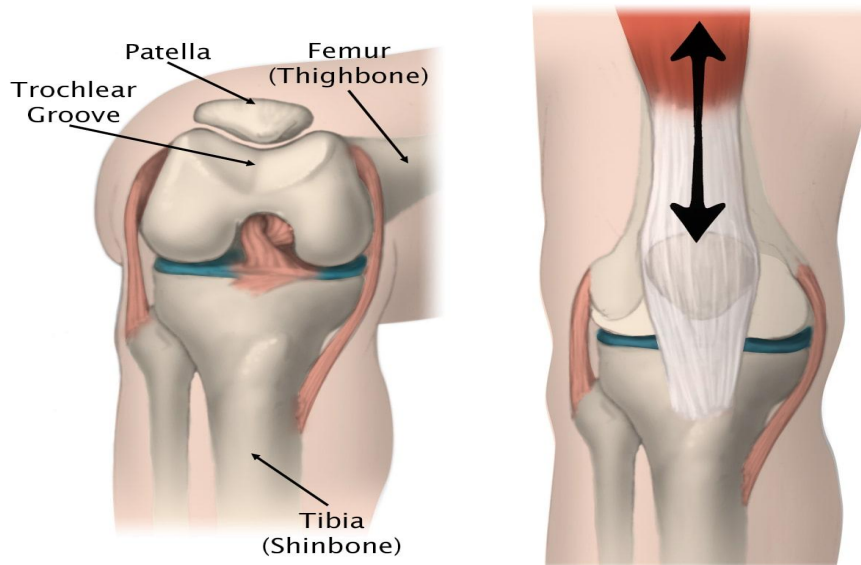
So what is PFP?

Patellofemoral pain is when you feel pain at the front of your knee or under and around your patella (kneecap). This syndrome/disorder occurs when your nerves sense pain in the soft tissue and bone surrounding your kneecap.



Doctors and researchers still are not sure what causes PFP however they do associate it with:

- Overuse; repetitive stress on the knee joint due to activities like running and jumping
- Injury; trauma to the kneecap like fractures or dislocation
- Surgery; particularly ACL reconstruction where the patellar tendon was used as a graft
- Weak quadriceps; fails to keep the kneecap properly aligned
- Poor foot support
- Patellar malalignment
 - The patella usually sits in a small groove at the end of the femur called a trochlear groove however sometimes the position of the patella can become abnormal. This is when the patella is pushed out to one side of the groove when the knee is bent. This may cause increased pressure between the back of the patella and the trochlea, irritating soft tissues.

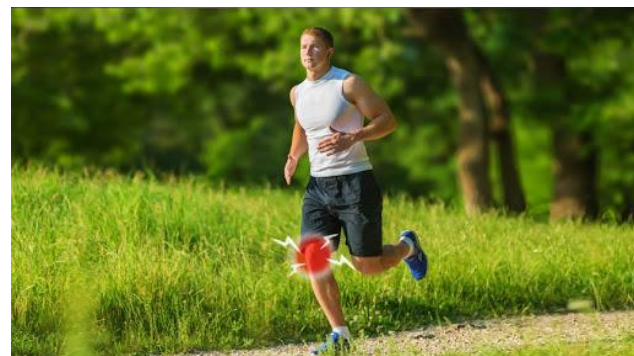


Who Does PFP Affect?

Anyone can get PFP however there are certain groups that have a higher risk of developing it!

These groups are:

- Athletes particularly runners and cyclists
 - 36% of runners will experience PFP
 - Almost 40% of cyclists will develop PFP
- Adolescents specifically those that have an active lifestyle



- Women
 - Women are 2x more likely to get PFP than men due to anatomical features like having a wider pelvis

How do I Know if I Have PFP?

Symptoms of patellofemoral pain include:

- Pain during activities that continuously bend the knee
 - Running
 - Jumping
 - Squatting
 - Climbing stairs
- Pain after being seated for an extended period of time
- Pain related to a change in activity level, playing surface, or equipment
- Popping or crackling sounds in your knee
- Kneecap that is tender to the touch
- Rubbing, grinding, or clicking sounds when you bend and straighten your knee



What is the Diagnosis Process Like?

Researchers and clinicians refer to the diagnosing process for PFP as a diagnosis of exclusion. This is due to the fact that there are numerous other knee conditions that could be causing the same pain and symptoms. Your doctor or physiotherapist will usually test for problems concerning your patella tendon, quadricep tendon, hofa's fat pad, menisci, ACL, and PCL before they consider diagnosing you with PFP.

In some cases, imaging like x-rays and MRIs will be used to help rule out any other possible conditions or problems.

I Have PFP, What Now?

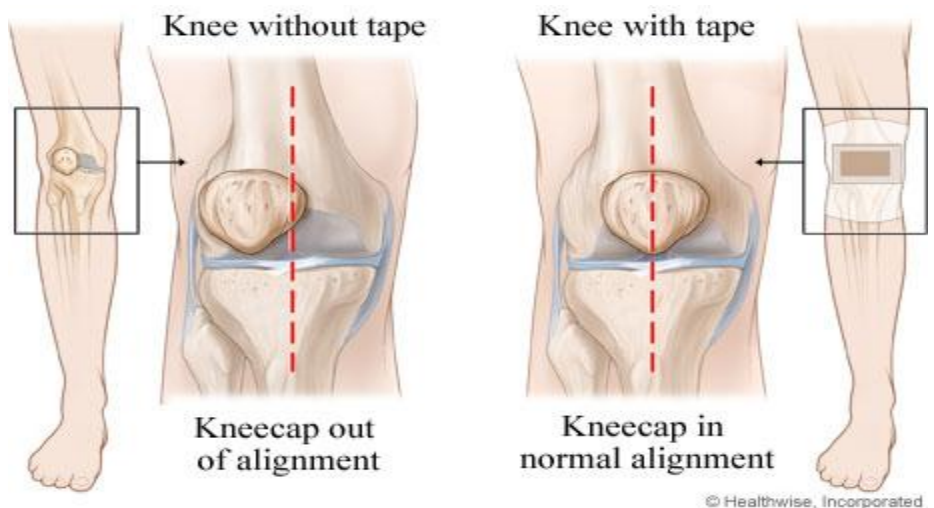
The good news is that PFP is entirely treatable! There are a variety of different treatments available depending on the severity of your case.

Many PFP cases can be treated through activity changes, the RICE (rest, ice, compress, elevate) method, and over-the-counter anti-inflammatory medications.

However, it is entirely possible that your doctor will recommend that you attend physiotherapy! Physiotherapy treatment has a lot of benefits and can help ensure that you do not develop PFP again.

Physiotherapy treatment would include:

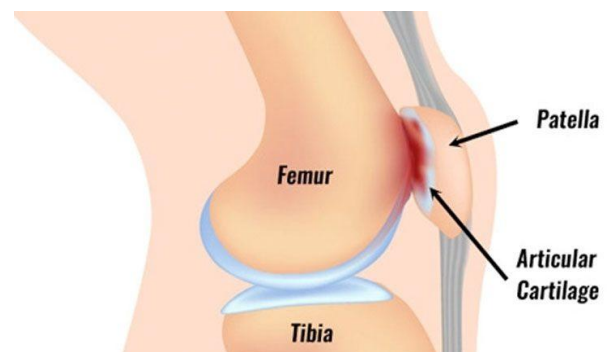
- Strengthening exercises
 - These exercises will help to strengthen the muscles around your hip and knee
- Patella taping
 - Helps to move and control the position of your patella which then helps the patella track away from any sore spots when your knee bends
- Orthotics
 - Your physiotherapist may recommend shoe inserts since they help to take stress off the lower leg and knee by stabilizing the foot and ankle
- Coordination training
 - Helps to retrain your hip and knee movement patterns in order to reduce your pain



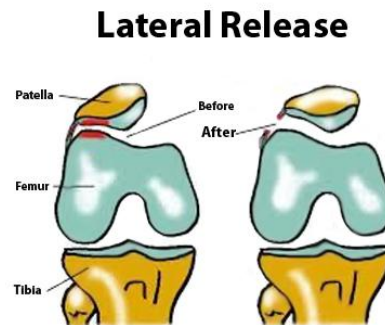
In rare and severe cases, surgery may be recommended. It is important to note that surgery is only considered if you have already tried the above treatments and did not respond well to them!

Possible surgical treatments include:

- Debridement
 - Removal of damaged articular cartilage from the surface of the patella which should provide pain relief.



- Lateral release
 - Loosens the tissue to correct patellar malalignment.



- Tibial tubercle transfer
 - Realigns your kneecap which allows for better and proper tracking of the patella in the trochlear groove.

How can I Protect Myself From PFP?

Great question! There are a number of different strategies you can implement in your everyday routine to avoid developing PFP or to prevent PFP from reoccurring.

These strategies include:

- Maintaining appropriate conditioning of the muscles around the knee particularly your quadriceps, hamstrings, and hip abductors.
- Avoiding rapid spikes in activity level
- Implementing flexibility and strength exercises to improve your technique for jumping, running, and pivoting which can help your patella track properly
- Warming up and stretching for at least 5 minutes before any sport or fitness activity
- Making sure your shoes fit well so they can provide suitable shock absorption

Basic Stretches Include:

Calf wall stretch

Stand facing a wall with your hands on the wall at about eye level. Keep one leg back with the heel on the floor, and the other leg forward. Keeping your back leg straight and your back heel on the floor, bend your front knee and gently bring your hip and chest toward the wall until you feel a stretch in the calf of your back leg. Hold the stretch for 15-30 seconds. Repeat 3 times and then switch the position of your legs and repeat the exercise 3 times.



Quadriceps stretch

If needed hold on to a chair, counter, or wall. With your free hand, grasp the ankle of one of your legs and pull your heel toward your buttocks until you feel a gentle stretch across the front of your hip and down the front of your thigh. Don't arch or twist your back. Keep your knees together. Hold this stretch for 15 to 30 seconds. Repeat 3 times.



Hamstring wall stretch

Lie on your back in a doorway, with one leg through the open door. Slide your other leg up the wall to straighten your knee. You should feel a gentle stretch down the back of your leg. Hold the stretch for at least 1 minute. Then over time, try to lengthen the time you hold the stretch to as long as 6 minutes. Repeat 2 to 4 times.



Quad sets

Sit with one leg straight and supported on the floor/bed. Place a small, rolled-up towel under your leg. Your other leg should be bent, with that foot flat on the floor. Tighten the thigh muscles of the straight leg by pressing the back of your knee down into the towel. Hold this position for 10 seconds. Relax. Do 3 sets of 10.



Straight leg raise

Lie on your back with one knee bent so that your foot rests flat on the floor. Your other leg should be straight. Make sure that your low back has a normal curve. Tighten the thigh muscles in the straight leg by pressing the back of your knee flat down to the floor. Keeping the thigh muscles tight and your leg straight, lift your leg up so that your heel is about 30 centimetres off the floor. Hold for about 6 seconds, then lower your leg slowly. Repeat 8 to 12 times.



Side lying hip abductors

Lie on your left side and slowly raise your right leg. While raising your leg make sure that your heel is pointing towards the ceiling and that your leg remains aligned with your back at all times without allowing your pelvis to roll backwards. Then lower your leg slowly while controlling the movement. Do 2 sets of 10 reps.



What Next?!

If you think you have patellofemoral pain or have been diagnosed by a doctor, you should see a physiotherapist! Together we can come up with a treatment plan that works best for you! Email us at informphysio12@gmail.com for more information!