

## Patellofemoral Pain

Patellofemoral pain syndrome (PFPS) can cause anterior knee pain and is a common clinical problem that is widely seen in sports medicine and physical therapy clinics. Runners, basketball players, young athletes and cyclists have a higher risk of developing this type of knee pain. Females are also 2.2 times more likely to develop PFPS than males. The cause of this problem is attributed to abnormal patellar tracking from muscular imbalances. Aggravating factors can include stairs, prolonged sitting, sports, and wearing high heels.

Anatomy of the Knee Joint



The patella (knee cap) sits on top of the knee joint with attachments from the quadriceps tendon (top) and the patellar tendon (bottom). Muscles that tend to be weak in people with PFPS include quadriceps (VMO to be specific), hip extensors, abductors and external rotators. When those muscles are weak people lose the ability to control their femur from adducting (moving inwards) and internally rotating during dynamic (running) and static (squatting) activities. This affects how the patella tracks, and can create knee pain. The ITB (iliotibial band), is located on the outer portion of the thigh, and can cause abnormal patellar tracking when it is tight.

Treatment for PFPS should begin with activity modification and strengthening of the VMO, hip extensors, abductors and external rotators in non-weight bearing and weight bearing exercises. It is also important to strengthen the pelvic and trunk muscles (lower abdominals, transverse abdominis, obliques, multifidi, erector spinae). Stretching of the quadriceps, hamstrings, hips and calves should to be done in conjunction with the strengthening exercises. Other treatment options may include taping techniques (McConnell or KT tape), foot orthotics to correct any biomechanical abnormalities, foam rolling of the ITB and ice to decrease inflammation.

