

Treatment

Conservative Treatment

Conservative Treatment is done in a three-stage system:

1) **Controlling Pain & Inflammation**

To help settle the pain and bring the client relief. Ice is used to help settle inflammation. Any activities should be reduced/modified until pain and inflammation have been controlled.

2) **Regaining Function & Strength**

Flexibility exercises are given to help lengthen the IT band and quadriceps muscles that pull the patella out of alignment. Strengthening exercises aimed at activating the medial quadricep muscle are often given as well as hip rotator and hip abductor exercises to strengthen weak hip muscles and to prevent the knee from rolling medially. These are done in the clinic and are given as a home program. Gait Retraining is often done to create better alignment of the lower extremity.

3) **Return to Sport & Activity**

Education will be provided regarding activities that should be avoided. A slow reintroduction to sport and activity should be implemented to decrease chances of PFPS recurring as you strengthen.

**** If your PFPS is due mainly to structural malalignment then BRACING may be needed to promote recovery.** Research has shown that bracing can reduce PFPS pain and allow the patella to sit more centered within the femoral groove and stabilizes it. There are many different kinds and brands of stabilizers. Talk to your therapist about what stabilizer they suggest.

Surgical Treatment

If Conservative Treatment is not successful a patient may need to seek surgical intervention. There are many different procedures including the following:

- 1) **Lateral Retinacular Release** The retinaculum on the outside of the patella when tight can pull the patella to the outside of the knee joint. This procedure releases the retinaculum allowing the patella more freedom to sit centered in the femoral groove.
- 2) **Patella Realignment** Combining a lateral retinacular release with application (folding) of medial structures, the medial quadriceps and the medial retinaculum, so the patella is able to sit in the center of the femoral groove.
- 3) **Patellar Tendon Transfer** Moves the patellar tendon medial on the Tibia allowing for correction of severe malalignment and tracking problems.
- 4) **Patellar Debridement** The areas behind the patella that are irregular and rough are scraped by a surgeon to help increase cartilage regrowth.

Your Orthopedic Surgeon will discuss your options with you if needed and choose the correct method for your case.



5121-47 St
Red Deer, Alberta
T4N 1R8

Telephone: 403-314-4458

Fax: 403-314-4227

E-mail: reddeer@collegiatesportsmedicine.ca

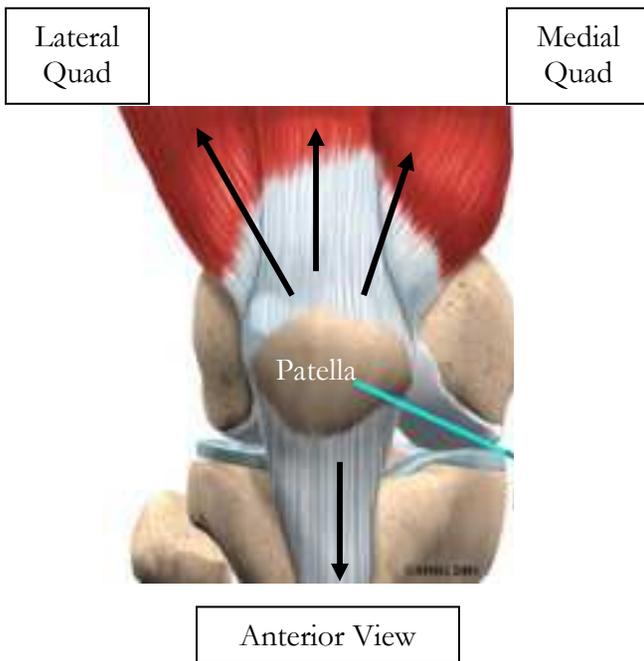
Website: www.collegiatesportsmedicine.ca

Patellofemoral Pain Syndrome (PFPS)



Basic Knee Anatomy

The patella or “kneecap” sits in a groove on the upper leg bone (femur). This joint is referred to as the patellofemoral joint. The quadriceps or thigh muscles attach to the patella. In a normal, healthy knee the patella sits right in the center of the joint, also known as the femoral groove, and glides smoothly as the quadricep muscles contract. The back of the patella is like a sponge and soaks up joint fluid called synovial fluid each time it is compressed against the joint. This compression occurs when one bends or straightens the knee.



All of the quadriceps muscles of the thigh attach to the patella. The forces of the quadricep muscles and the patellar tendon pull on the patella keeping it stable in the femoral groove. Encircling the knee and attaching to the patella is a thin but strong band of connective tissue called Retinaculum.

What is Patellofemoral Pain Syndrome (PFPS)?

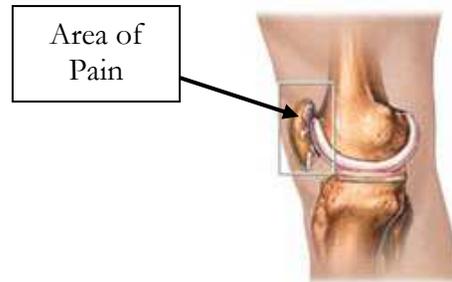
Patellofemoral pain is often described as a **general anterior knee pain** that is difficult to locate. This syndrome is often caused by many different factors. If Patellofemoral Pain Syndrome isn't treated it can lead to a more degenerative disorder called Chondromalacia Patella. The further along Chondromalacia progresses, the less likely it can be healed. Chondromalacia is a deterioration and softening of the backside of the patella and goes through four stages:

Stage One: Cartilage softening & swelling

Stage Two: Cartilage cells begin to separate causing roughening of articular surface

Stage Three: Separation increases to a deeper fissure & cartilage begins to split

Stage Four: Backside of patella is significantly damaged & may result in a fracture



Common Signs & Symptoms

- General anterior knee pain & often swelling
- Most often a gradual onset of pain
- Pain is increased with activities such as squatting and going up & down stairs
- Pain with prolonged sitting
- Tenderness behind the patella most commonly under the medial side

Contributing Factors & Causes

The main contributing factors in PFPS include:

- ❑ Weak Glute Medius Muscle
- ❑ Low Back or Hip Injury can lead to hip weakness and PFPS
- ❑ Any knee trauma or surgery
- ❑ Tight Quadriceps, Iliotibial (IT) Band & Glute Maximus
- ❑ Abrupt change in training activity, surface, intensity, or duration that loads the patellofemoral joint
- ❑ Genu Valgum (knock knees)
- ❑ Foot over-pronation & or Lateral Tibial Torsion, Fallen Arches
- ❑ Tight Lateral Retinaculum at knee
- ❑ Weak Medial Quadricep Muscle

A tight IT Band on the outside of the thigh and a weak medial quadriceps usually causes patellar malalignment and creates a laterally positioned patella in the femoral groove. For the patella to be nourished it needs to sit centered in the femoral groove so it can soak up joint fluid. Since the lateral side of the patella touches the femur it gets the nutrition it needs to stay healthy. If the medial (inside) of the patella isn't in contact with the femoral groove it doesn't get proper nutrition. Without proper nutrition the medial side of the patella starts to soften & becomes painful. If training volume remains high the lateral side can become over compressed thus leading to bruising under the patella's lateral side, also causing pain.

