

# PATELLOFEMORAL SYNDROME

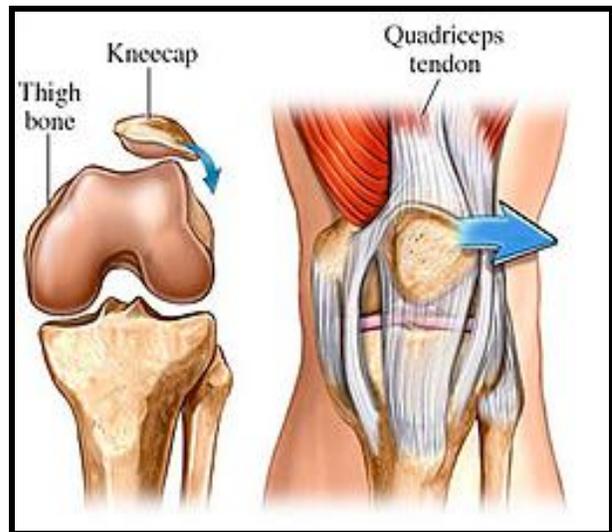
## WHAT'S THE PROBLEM?

Patellofemoral syndrome (PFS) describes a variety of injuries affecting the patella (kneecap) and its groove on the femur. The patella moves up and down in its groove when the knee is extended or flexed. If repetitive forces acting on the patella during this up-and-down motion are unbalanced, such as with running and jumping, or if the patella moves side-to-side too much, painful symptoms may develop. PFS is the most common knee injury in athletes and physically active adults. Typically, women — especially adolescent females — experience more PFS problems than men.

## HOW DID THIS HAPPEN?

The exact cause of pain is not known. The cartilage that lines the under surface of the kneecap has no nerve endings so pain is unlikely to originate here. Some experts feel the pain is a result of wear on the bone underlying the cartilage or possibly, breakdown products of injured cartilage.

Factors believed to contribute to production of retropatellar pain include impairments affecting the patellofemoral joint interface. Excessive use of the joint, either in frequency of loading or excessive loading, also contributes to the symptoms.



## HOW DOES IT FEEL?

The injury is usually a result of repetitive running and jumping activity rather than a single traumatic event. Symptoms usually develop gradually, with initial pain resembling a dull ache or knee stiffness, occur early in activity. As you warm up, the pain/stiffness may improve or disappear. Hours after the workout, symptoms may reappear.

As the injury progresses, pain may be present throughout activity. Symptoms may worsen when descending stairs or hills. Squatting and kneeling may also aggravate the symptoms. Crepitus (a "crunching" sound under the kneecap with movement of the knee) may also be present. Pain may be exacerbated by sitting with the knee flexed for a protracted period of time, such as while watching a movie, hence leading to the term "movie-goer's knee."

Tenderness often is present along the facets of the patella. Diagnosis

is dependent on a history of symptoms and pain during specific physical exams. There is no single test that confirms PFS. In fact, some athletes with this injury may have a completely normal exam.

### **WHAT CAN I DO FOR IT?**

PFS is a condition that is managed, rather than cured, due to intractable underlying biomechanical inefficiencies. Treatment revolves around relieving symptoms of the problem. About 80 percent of all patellofemoral problems can be treated without surgery.

Treatment is directed at correcting muscle imbalance, weakness or alignment problems of the lower back, pelvis, hip or lower extremity. Almost all studies of PFS indicate weakness in the medial quadriceps (the muscles in the front of the thigh). Appropriate flexibility exercises may also be used. Strengthening hip and abdominal muscles could correct abnormal alignment of the low back, hip and pelvis and relieve PFS.

As with many exercise routines, patients often fail to adhere to the exercise prescription, resulting in apparent poor treatment results when the therapeutic approach has not been given a fair trial.

### **WHAT WILL MY PODIATRIST DO FOR IT?**

Those who pronate excessively (have flat feet) are thought to be at increased risk for patellofemoral injuries. So, treatment may also include orthotics to correct overpronation. Proper footwear also

is important for individuals with PFS. The podiatrist will evaluate the patient's biomechanics and recommend proper shoes and orthotics, which in turn can lessen knee pain. Foot orthotics are often of benefit in returning the subtalar joint to a nearly neutral position, thereby reducing foot pronation, which in turn reduces rotational forces in the tibia that affect tracking of the patella during gait.

The basic exercise principles for management of PFS are restoring muscle balance within the quadriceps group, improving range of motion (ROM), and restricting the offending physical activity. This goal is accomplished best by strengthening all of the quadriceps. Ice packs frequently are used to decrease pain and inflammation associated with this condition, especially after completing the exercises

Non-steroidal anti-inflammatory drugs (NSAIDs) are often used to reduce pain from this injury. Taping is commonly used to relieve symptoms. They are effective in reducing pain severity, but do not cure the problem. Ice therapy after exercise may relieve symptoms effectively.

Surgical procedures performed for patellofemoral arthritis include lateral facetectomy and patellar resurfacing. Surgical intervention usually is in the form of arthroscopic evaluation followed by release of the lateral attachments of the patella.