

Informational Guide to Patellofemoral Syndrome

Introduction

The kneecap (patella) is a unique bone that is found within the tendons of the front thigh muscles, or quadriceps. It functions to increase the force of the quadriceps as they straighten the knee. Cartilage is found on the underside of the patella and acts to help the patella glide in the groove made by the thigh bone (femur).

Often, the cartilage under the patella will wear away, causing pain. This is typically due to a tracking issue of the patella in the femoral groove. In other words, if one of the quadriceps muscles pulls too hard or is too weak, the patella will get pulled out of its natural groove causing compression on the undersurface of the kneecap and cartilage degeneration.

Problems can also occur if the muscles don't coordinate well, if there is a greater than normal angle between the femur and the leg bone (tibia), or if the femoral groove is too shallow (typically to the outside of the knee).

Symptoms

Typically pain associated with damage to the cartilage under the patella, or patellofemoral pain, is felt with activities such as walking down stairs or hills, or with maintaining a bent position of the knee for long periods of time.

The pain may vary in its intensity and position. This may range from no pain, to mild, vague discomfort at the edges or under the patella, to significant pain during many weight-bearing activities. Noise within the joint will often accompany this syndrome as the damaged undersurface of the patella rubs in the femoral groove.

Diagnosis

This syndrome is generally diagnosed by taking a thorough history of the symptoms and onset, as well as observing the patella track through the femoral groove during a quadriceps contraction. X-ray may also be used to show the patella in the femoral groove in a variety of positions. On occasion, an MRI may be ordered or surgical arthroscopy may be used to make a definitive diagnosis.

Treatment

The inflammation often associated with patellofemoral syndrome can be decreased through medication prescribed by a physician or in physical therapy with ice and ultrasound. Bracing or taping may also be performed to help reposition the patella as it tracks through the femoral groove.

If conservative methods are not working, other more aggressive means may be used.

Arthroscopic surgery may be performed to smooth the under surface of the patella.

A lateral release (cutting of the tissue to the outside of the patella) can also be done to decrease the tension at the outside of the knee. This would allow the patella to track in the groove more appropriately.

A bony realignment may be performed by moving the patellar tendon's attachment to the tibia (one of the lower leg bones). This, too, would change the pull of the patella through the femoral groove allowing proper tracking with quadriceps muscle contractions.

Rehabilitation

The goals of patellofemoral syndrome rehab include regaining flexibility, strength and muscle balance at the knee.

Taping is typically done at the patella to change the pull of the quadriceps muscles. As daily activities are performed with better patellar alignment, the muscles will learn a new resting position. As this happens, the need for tape will decrease.

A home exercise program (HEP) will be prescribed by a physical therapist to increase flexibility of the outside quadriceps muscles, the back thigh muscles (hamstrings) and the calf muscles. The HEP will also focus on strengthening the inside muscles of the quadriceps and regaining better coordination of the muscle contractions.

More Information...

For more information please contact any of our three clinics in Roseville, Spring Lake Park, or Blaine where a knowledgeable therapist will be happy to assist you with your recovery needs.