

Patellofemoral Syndrome (PFS)

Patellofemoral syndrome is a term used to describe disorders of the patella which cause pain in and around the kneecap.

The undersurface of the patella has a “notch” which is designed to glide over a “groove” in the femur as the knee flexes and extends. When the patella is unable to glide smoothly in the groove, the undersurface of the kneecap and other structures in the knee become irritated, causing pain in and around the knee.

Causes

- ◆ Overuse/Patellofemoral overload
- ◆ Maltracking of the patella due to strength and/or flexibility deficits
- ◆ Muscular strength deficits of the quads, gluteus, and hip rotators
- ◆ Decreased flexibility of hamstrings, hip rotator muscles, calf, and iliotibial band
- ◆ Structural mal-alignment
- ◆ Biomechanical issues at the foot and ankle

Symptoms

- ◆ Pain in and around the knee following prolonged sitting with knees flexed or repetitive impact in weight-bearing activities
- ◆ Swelling which causes a tightness and discomfort in and around the kneecap area
- ◆ Grinding or clicking with bent knee activities

Treatment

Modification of Offending Activities/Relative Rest

Assessment of Footwear/Arch Supports/Orthotics

Patient Education (Emphasis on Rest, Exercise, and What to Avoid)

Exercises

- ◆ Strengthening: quads (emphasis on VMO), hip adductors (adductor magnus), hip abductors (gluteus medius)
- ◆ Flexibility: hamstrings, hip rotator muscles, calf, iliotibial band

Avoid

- ◆ Activities with knee bent > 90°
- ◆ Kneeling on the affected knee
- ◆ Sitting with legs bent for long periods of time/Sitting with legs crossed
- ◆ Lifting heavy objects from a squat position
- ◆ Riding an exercise bike with the seat too low or the tension set too high
- ◆ Stairs
- ◆ Leg extension machines

References:

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