

# Patellofemoral pain syndrome



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**Patellofemoral pain syndrome** (PFPS): a cluster of articular and soft tissue injuries arising from the patellofemoral joint. PFPS is a common cause of anterior knee pain.

## Causes:

- Malalignment of the patella during movement through the PF trochlea
- Relative VMO weakness
- Tight ITB or hamstrings
- Overuse trauma of the PFJ

## Pathophysiology:

- Patellar maltracking due to functional malalignment or dynamic valgus
- The functional malalignment is associated with quadriceps dysbalance, hamstring tightness, or ITB tightness
- This causes the mechanical axis of the limb to move lateral to the knee midline causing overstretching of the MCL, and compression of the lateral meniscus and cartilage
- Repetitive compressive or shearing forces on the PF joint leads to synovial irritation, inflammation and subchondral bony changes in the distal femur or patella

## Presentation

- Normally insidious onset
- Pain normally an ache around the patella with simultaneous localised pain concentrated behind the patella
- Running: pain normally increases with distance
- Aggravating factors: walking, squatting, kneeling and prolonged sitting with knees bent (**cinema sign**)

## Diagnosis

- PFPS is a diagnosis of exclusion - rule out other causes of anterior knee pain first
- Assess quadricep group for VMO atrophy
- +ve **Clarke's test**
- Presence of retropatellar crepitus
- Usually normal ROM
- Restricted medial glide of patella secondary to tight lateral structures



## Management

- Home exercise programme: stretching of lateral knee structures/ VMO strengthening/ gluteal strengthening
- Patient education on the nature of PFPS and activity modification: reduce running load/ take regular breaks/ try low-impact knee exercises
- Soft tissue release to lateral knee structures
- Use of orthotic insole
- **McConnell taping** with medial patella glide
- Patella mobilisations with medial glide
- **Dry needling** to lateral knee structures

## Want to learn more?

With AcePhysio the learning journey doesn't stop here! Take a look at our further reading recommendations below to become an expert in PFPS:

1. Petersen, Wolf et al. "Patellofemoral pain syndrome." Knee surgery, sports traumatology, arthroscopy : official journal of the ESSKA vol. 22,10 (2014): 2264-74.
2. Barton CJ, Lack S, Hemmings S, et al The 'Best Practice Guide to Conservative Management of Patellofemoral Pain': incorporating level 1 evidence with expert clinical reasoning. British Journal of Sports Medicine 2015;49:923-934
3. Dixit S, DiFiori JP, Burton M, Mines B (January 2007). "Management of patellofemoral pain syndrome". American Family Physician. 75 (2): 194-202.