

# Patellofemoral pain syndrome

## Introduction

Patellofemoral pain is a common clinical problem both in the athletic and non-athletic population. It accounts for 25-40% of all knee pain. Patients usually present with an aching pain which is poorly localised in the peripatella region that is of insidious onset. Discomfort is brought on by athletic activity, prolonged sitting (movie goers' sign), ascending and descending stairs, or squatting. Symptoms of crepitus and giving way may also be associated.

The maximal patellofemoral contact area is reached at approx 45° of flexion. Considerable compression forces are exerted during flexion with up to 5.6 times body weight during running alone.

## Etiology

The etiology is thought to be primarily due to the pathomechanics of the tracking of the patella within the femoral condyles. Deviation of the patella laterally generates increased pressure behind the lateral patella facet on the lateral femoral condyle is proposed as the main cause of pain.

Thus a lack of congruency of the patella tracking can be caused through osseous or soft tissue structures. The knee "Q" angle may be a predisposing factor as may foot alignment looking for signs of excessive foot pronation. Excessive foot pronation causes increased internal tibial rotation and has been directly linked to PFPS.

Torsional deviations of the femur such as femoral anteversion will cause increased internal knee rotation.

## Examination

A thorough knee examination needs to be made and should include the following assessments,

- Patella apprehension test.
- Patella compression tests in 30, 60 and 90 degrees of flexion.

- Palpation of the peripatella region and patella facets for localised pain.
- Assessment of patella position (squinting, frog's eye, Alta or Baja) and patella movement (medial, lateral, proximal and distal).
- Testing of quads, hamstring and hip rotator strength and flexibility.

## Treatment

Strengthening the quadriceps is an essential component to successful treatment as patients with this condition suffer quadriceps strength loss. An eccentric quad strengthening is the preferred treatment regime. This can be initiated simply utilising a home exercise programme or specific weight equipment. Pain tolerance to any exercises prescribed is the best approach by the practitioner.

Also stretch any tight tissues that provoke poor patella tracking such as the lateral retinaculum and ITB. Orthotic devices have also been found to be effective in the treatment of PFPS. Excessive or prolonged foot pronation maintains the knee in an internally rotated position. Poor or worn footwear may also be a contributing factor in the development of the condition so always check these.

McConnell taping of the patella medially can often have dramatic results. Kinesiotape is ideal for this.

## Take home messages

- Appropriate management of PFPS is critical in obtaining a successful treatment outcome.
- Consider fundamental treatment principles first before complicating treatment.
- Review foot and lower limb biomechanics in standing, walking, and running and view patella motion during these assessments.
- McConnell taping is often a good diagnostic test and self treatment option.