

MEAD PHYSIO GROUP

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Patellofemoral Pain

Knee pain that involves the kneecap or patella is called patellofemoral pain (PFP). Both internal and external factors can play a part in the onset of this condition. Biomechanical issues such as flat feet, as well as tightness and weakness throughout the leg are potential internal factors. External factors include sudden increases in the amount, intensity or type of exercise, and the type of exercise shoe worn. Typically the pain in PFP is on the front of the knee and may involve swelling, clicking and feelings of giving way. This type of knee pain is aggravated typically with squatting and stair climbing.

The main aim of PFP management is to reduce the forces through the joint. For internal factors, typical management options include:

- Stretching
- Strengthening
- Use of orthotics
- Taping the knee cap
- Functional re-training
- Bracing

External factors are managed with identifying the likely contributing issues and adjusting them accordingly:

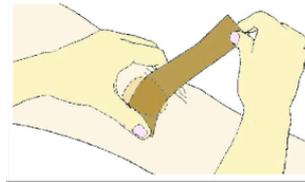
- Reduce sprinting
- Decrease running distance, intensity
- No hill running
- Cross-train to maintain fitness levels
- Selective shoe wear

Due to the complex interplay of contributing factors in PFP, a personalized rehabilitation program is paramount. In the early stages of PFP, acute knee pain is managed with a combination of an active rest phase free of aggravating activities, followed by the gradual introduction and progression of specific exercises. Specific agility exercises form the last phase of intervention in which the patient is exposed to higher

forces akin to those they are likely to encounter in their sport.

Taping & Bracing

Adjusting the alignment of the patella through the use of sports tape or bracing has been demonstrated to reduce pain (see our YouTube video on patella taping).



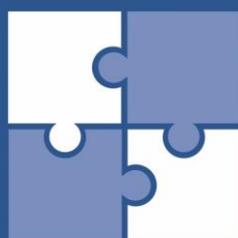
Orthotics

By altering your foot position on the ground, especially an excessively flat arch (pronation), an orthotic can reduce mal-alignment at the knee and pain.

Stretching is an important component of treatment for PFP. Muscle and soft tissues that exert excessive stress on the kneecap need to be stretched.

Principles of stretching:

- Dynamic stretches are best before training/games and after warming up. They involve moving the muscle to be stretched into, and out of, a position of comfortable tension 10-15 times for each stretch.
- Following training/games, static muscle stretches, in which the tension can be held for up to 1 minute at a time, aid in recovery.
- Never bounce your stretches or push into pain
- The best results are achieved by doing a little bit often



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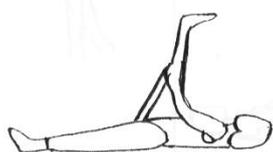
Quadriceps: Use your other hand to flex your knee and while keeping your back still, pull your hip backwards until you feel a pull on the front of your thigh muscle



Calf: With your back knee straight and the back foot pointing directly forwards while maintaining the arch in this foot, lunge forward towards your front foot



Hip Flexors: While lunge kneeling and maintaining a straight back, transfer your weight forwards



Hamstrings: While on your back, clasp the back of your thigh and slowly straighten your knee and pull your toes towards you slowly



Buttocks: Rest the foot of one leg on the thigh of the other and interlock your fingers around your knee or thigh. Gently pull that knee towards your chest.



ITB Stretch
Lie on your side with the leg to be stretched uppermost and in alignment with your body. Use your underneath foot to help stretch the top thigh towards the floor.



ITB Release
Place the leg to be released against a bolster or foam roller and roll this thigh over the bolster.

Strengthening



Straight Leg Raise
Lift a straight leg up to the height of the opposite bent knee.



Single Leg Squat
Standing on one leg, lower yourself into a shallow squat maintaining your knee alignment over your foot.



Hip Abduction
On your side, straighten your uppermost leg with your toes pointing down. Support your pelvis and elevate the upper leg to just above horizontal and lower slowly.

Clams

On your side with pelvis supported and spine stabilised, roll your top bent knee up off the bottom knee and return slowly.



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