

Anterior Knee Pain

Anterior knee pain (sometimes called patello-femoral pain) is common in adolescents.

It is characterised by a generalised ache around or behind the patella (kneecap). There is frequently no known cause. Pain is often aggravated by activities requiring the knee to bend, such as stair climbing, squatting, sitting and kneeling.

Management of anterior knee pain requires careful assessment of the knee by the orthopaedic surgeon or physiotherapist.

It is important to understand the structure and function of the knee.

The quadriceps is a group of muscles on the front of the thigh which straighten the knee. They attach to the patella, which joins the four individual quadriceps muscles to one common tendon (**Figure 1**).

The optimal functioning of the quadriceps mechanism depends on correct alignment of the patella in the patella groove of the thigh bone (**Figure 2**). This requires a balance between the muscles and structures attaching to the patella. On the outside, vastus lateralis (VL), iliotibial band (ITB) and the lateral retinaculum provide a strong outward pull. Opposing this force on the inside of the patella is just one active stabiliser, the vastus medialis oblique (VMO).

Weakness in VMO may result in lateral patella tracking, i.e. the patella moves slightly to the outside as the knee bends (**Figure 3**). This malalignment may cause excessive or abnormal contact on the underneath surface of the patella on the thigh bone resulting in pain, and sometimes, softening of the cartilage. VMO function may also be compromised by pain and swelling, further contributing to the cycle.

Sometimes anterior knee pain occurs without any obvious abnormality.

Anterior knee pain is usually well managed by a specific physiotherapy programme. Your physiotherapist will plan a specific exercise programme to strengthen VMO and stretch the tight structures, sometimes combined with taping. Warm packs and topical anti-inflammatory gel may be helpful. Physiotherapy generally gives good relief of symptoms and allows a graduated return to full sporting activities.

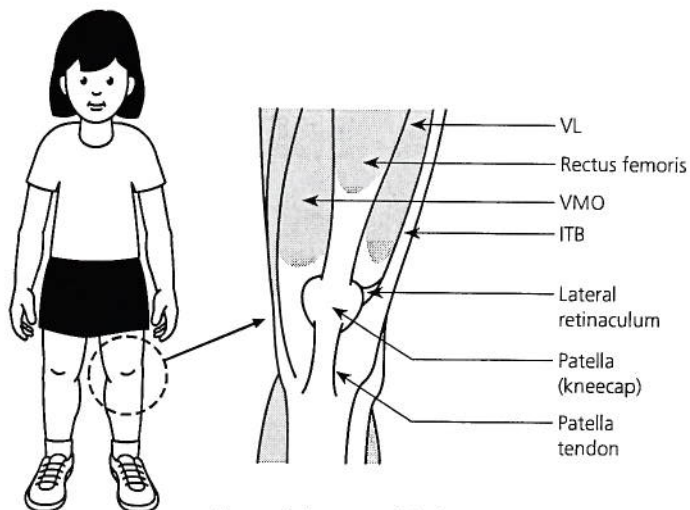


Figure 1. Anatomy of the knee.

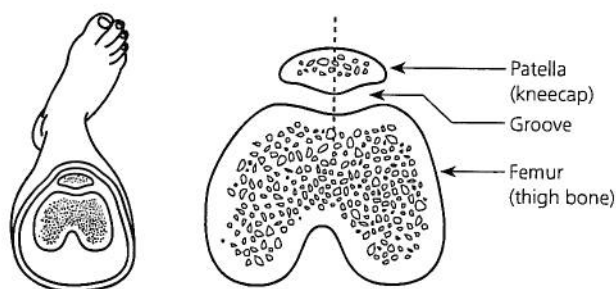


Figure 2. Correct alignment of patella in the groove of the femur.

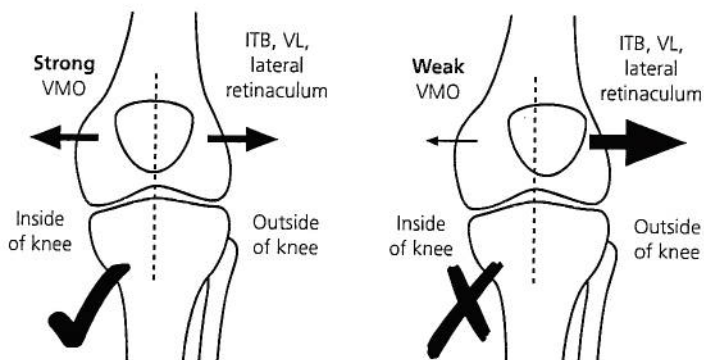


Figure 3. Correctly aligned patella (left) and weakness in VMO resulting in patella moving to outside of knee (right).