

PATELLOFEMORAL SYNDROME

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Patellofemoral syndrome, also called patellofemoral tracking disorder, describes various painful degenerative changes to the articular cartilage on the underside of the patella.

Sixty-five per cent of patellofemoral pain is due to tracking or instability problems (*Larson, Grana, 1993*).

The patella is a sesamoid bone that covers the anterior portion of the knee joint. It attaches superiorly to the quadriceps tendon and inferiorly to the patellar tendon. The patella is stabilized medially and laterally by the patellar retinacula.

The patella and its articulating surfaces, the femoral condyles, the patellar tendon and its attachment to the tibia, the retinaculum, the synovium and the quadriceps muscle, make up the extensor mechanism of the knee. When the knee is extended, the patella glides superior to the femoral condyles. When the knee is flexed, the patella glides inferior to the condyles. This gliding occurs along the longitudinal axis of the femur in response to the contraction of the quadriceps muscle. The pull of the patellar tendon is along the longitudinal axis of the tibia. Due to the slight valgus angulation that most knee joints assume when the knee is in extension, the long axis of the femur and the long axis of the tibia are at a slight angle to each other (*Figure 41.1*). This angle is called the Q (quadriceps) angle (*Hertling, Kessler, 1990*).

The Q angle results in a slight lateral pull on the patella. The lateral femoral condyle and the patellar groove on the femur help to prevent this lateral movement. When the knee is in flexion, the quadriceps muscle pulls the patella tightly into the femoral groove. However, as the knee approaches full extension, the patella glides in a superior direction into the shallower portion of the femoral groove. Both the vastus medialis obliquus and the medial retinaculum must function to prevent the patella from tracking laterally. This is especially important when the knee is bearing a load.