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## **PATELLOFEMORAL TENDONITIS: AN ISSUE WITH MANY COMPLICATIONS AND AN OUTLOOK TOWARDS ITS LEADING CAUSES**

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Pain and discomfort are just a modest reaction for a patient suffering from patellofemoral tendinitis. According to WHO, about 365 million people suffer from knee problems, an increase of 65% in two decades. Going back in time, in 1998, four great sports medicine and rehabilitation specialists, Kevin Wilk, George Davis, Bob Mangine, and Terry Malone, presented a very detailed classification of patellofemoral tendinitis:

- iliotibial band syndrome,
- patellofemoral compression syndrome,
- biomechanical syndrome,
- dysfunction, patellar and quadriceps tendinopathy.

Aim is to find qualitative and quantitative causes of knee pain.

Material and methods. This review article synthesizes current research on knee pain through a comprehensive literature search in databases such as PubMed, Cochrane Library, and Scopus.

The most often cause of knee pain issues arise due to one causal culprit: muscle inactivation or muscle imbalance caused by latency in surrounding muscles. Wilk K.E. et al. attributed the biomechanical study on patellofemoral tendonitis, which usually presents on the lateral part of the knee and is caused by rigorous compression of the IT band pushing into the fat pad that involves the lateral epicondyle of the femur. As a biomechanical dysfunction, the patella will be smashed into the femur's groove. This compression can cause the patellar tilt and shift (creating uneven pressure on the underside of the bone). When this occurs, it leads to an achy kneecap where there is excessive pressure between the two bones (femur and patella) or on the inner or medial side where the tissues are overstretched.

A small study by Cibulka and Threlkeld-Watkins reported an abnormal case of patellofemoral pain in five patients with excessive hip external rotation. Karaman et al. added that femoral rotational malalignment  $> 10^\circ$ , both external and internal, affected the patellofemoral joint, provoking pain. These following authors have indicated towards one causation effect that all the following immobility issues and biomechanical symptoms are just a harbinger to the problem. As more evidently stated by Sang-Kyoon Park et al., knee osteoarthritis exhibited reduced hip external rotator, knee extensor, and ankle inversion muscle force output compared to healthy individuals and also increased peak knee adduction angles. Hip abductor strength was a significant predictor of function. Pelvic drop angle differences stem from poor knee flexion and ankle inversion, leading to knee overload, which in turn leads to a significant angle where muscle inactivity and a rather immobile lifestyle led to a causation of impaired biomechanics, ultimately drawing an inappropriate load on the knee.

Studies indicate that knee pain in general leads to anterior cruciate ligament and meniscal injuries, which are growing at a rapid rate and account for 17% of all knee injuries, including of poor biomechanics. To prevent a kind of "Knee Pandemic", patients and their doctors should have as much transparency as possible when symptoms occur. Immobility is the major contributor to knee and second to none is poor muscle engagement. This can be prevented with correct diagnosis and mobility to improve muscle activation and blood flow. Third, muscle stiffness due to overload and poor posture is becoming more common. A good observation and enough mobility work no lasting more than 30 minutes per week, can bring massive changes; some studies indicate this activity can delay osteoarthritis in susceptible people by as much as 23%. To prevent muscle stiffness, sports massage can improve blood flow and muscle flexibility for a good 10 minutes, which is enough to provide nutrition to lacking parts. Introduction of mobility work to children during adolescence as a curriculum could save generations from joint pathology.