



Patellofemoral Pain (PFP)

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What is Patellofemoral Pain?

Patellofemoral pain (PFP) is defined as pain around or behind the patella, which is aggravated by at least one activity that loads the patellofemoral joint during weight bearing on a flexed knee (e.g., squatting, stair ambulation, jogging/running, hopping/jumping). The symptoms of patellofemoral pain can vary, but patients often report a dull, aching pain sensation around the front of the knee that worsens with activities that involve bending the knee, such as walking up or down stairs, squatting, running, or jumping (1). Pain may also be aggravated by sitting for long periods with the knees bent or during activities that apply direct pressure on the patella, like kneeling. Swelling or a grinding sensation (crepitus) is also present in some cases (1). Patients with PFP often have reduced ability to perform sports, physical activity, and work-related activities, ultimately affecting the quality of life (2). Psychosocial factors are associated with symptom severity and are predictive of clinical outcomes (3), indicating that the biopsychosocial model is necessary to fully understand PFP.

Who Gets It and Why?

PFP is common and affects around one in 14 adolescents and up to one in five adults in select populations at any given time (4). It is most common in physically active populations such as runners, recruits, and similar (4). As a result, it is often considered overuse or load related. Overuse, training errors, and biomechanics factors, such as altered hip and knee mechanics, have all been proposed to contribute to the development of PFP through the loading of the patellofemoral joint. However, there is a lack of high-quality evidence to explain the causes of PFP. Currently, the development of PFP is considered multifactorial, and a range of biopsychosocial factors may play a role in the development and persistence of pain (5). A recent review found moderate to strong evidence that BMI/

body fat percentage, age and height/weight/limb length were not risk factors for developing PFP (6). The review found conflicting evidence about muscle strength as a risk factor.

How is it Diagnosed and Assessed?

The diagnosis is made as a clinical “diagnosis by exclusion” in the absence of other identifiable pathology such as meniscal injury, tendinopathy, bursitis, or apophysitis (1). A core criterion of diagnosis is pain around or behind the patella that is aggravated by at least one activity that loads the patellofemoral joint during weight bearing on a flexed knee (e.g., squatting, stair ambulation, running, or jumping) (1). Palpation test, patellar tilt test, and eccentric step test are proposed to discriminate between PFP and other non-traumatic knee disorders (7), but there is no consensus on the optimal diagnostic tests, an apparent reason being the lack of a gold standard. Imaging is usually not necessary for the diagnosis or explaining the patients’ symptoms (1).

How is it Managed?

The treatment of PFP is moving from a biomedical approach with specific exercises to a more person-centered biopsychosocial approach similar to low back pain and other chronic musculoskeletal conditions (5). Guidelines for musculoskeletal pain often recommend a wait-and-see approach. However, based on a recent living systematic review with a network meta-analysis, wait-and-see is the least effective treatment available for short-term outcomes for PFP and should be avoided (8). The evidence suggests a minimum of patient education at the first consultation and potentially adding a combination of exercise, orthoses, or patellar taping/mobilizations if the patient and clinician agree on the time requirements, cost, and benefit (8). Currently, there is no evidence to suggest that one form of exercise or orthoses are

superior. Patient preferences may therefore help guide exercise selection. Examples of hip and knee exercises and patient education.

What is the Long-Term Outlook?

Despite being offered evidence-based care, a substantial proportion of both adolescents and adults diagnosed with PFP continue to experience pain and functional limitations after 12 months. Cohort studies from adolescent populations suggest that up to 65% will continue to experience pain after 2 years and up to 40% after 5 years (9). The findings from studies on adults show a similar picture, with up to 57% reporting an unfavorable outcome after 5-8 years (10). There seems to be a transition towards more widespread pain complaints among those who continue to experience pain (11) and high use of health care utilization and impact on sleep and functional limitations (9). However, emerging evidence suggests that early and relevant treatment may improve longer-term outcomes (12).

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