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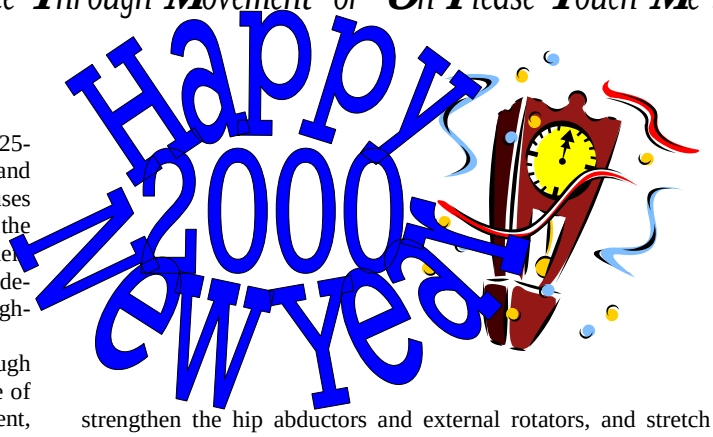
Keeping Healthy with OPTM Sports Therapy

Optimum Performance Through Movement or Oh Please Touch Me !

Patellofemoral Pain

Patellofemoral (PF) pain is a common problem affecting 25-34% of the population. It is a very difficult condition for clinicians and affects both athletes and sedentary individuals. There are various causes of patellofemoral pain: 1) muscle and movement imbalances of the lower extremity; 2) maltracking of the joint as a result of malalignment of the patella in the femoral groove; 3) overuse from activities; 4) degenerative changes which result from various causes such as a high-impact blunt trauma to the region or a genetic predisposition.

The causes of PF disorders are effectively identified through an evaluation which includes a thorough history and the performance of a systematic examination of the patient's lower extremity alignment, patellar orientation, muscle flexibility, strength, and coordination with dynamic activities as well as an assessment of soft-tissue and articular pain. Identifying the underlying etiologic factor is essential for the appropriate rehabilitation program which usually will involve a combination of muscle flexibility and strength training, taping, orthoses, and modalities.



Etiologic Factors and Treatment

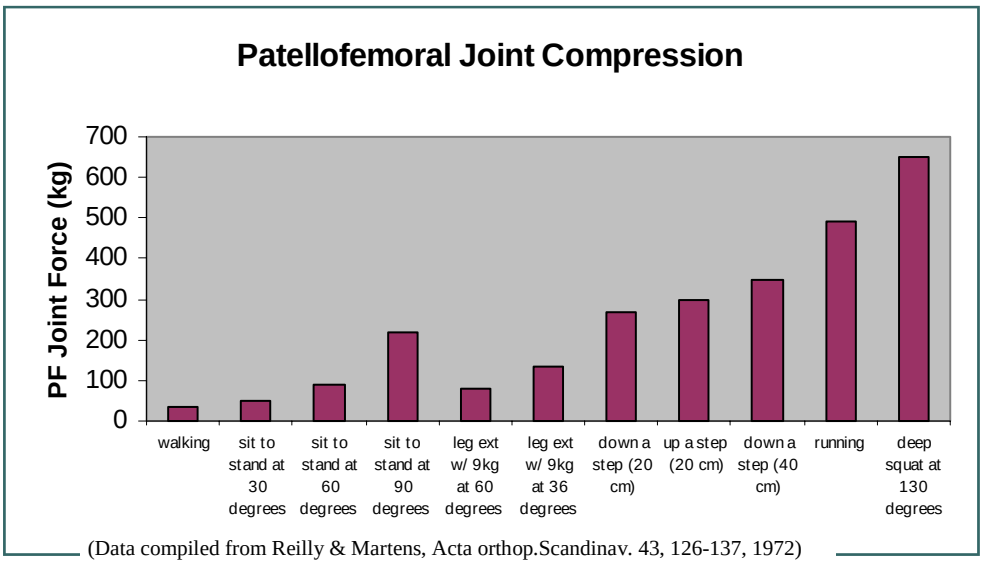
Poor dynamic control of the lower extremity from muscle imbalances can result in added stress to the PF joint. Weak gluteals can result in excessive internal rotation of the femur with weightbearing activities. In closed chain activities, tight calf musculature can restrict ankle dorsiflexion which can lead to compensatory pronation and consequently, increased internal rotation at the hip. Excessive internal rotation of the femur can cause abnormal PF mechanics. It may be important to use an orthotic or strengthen the posterior leg muscles to control excessive pronation. Therefore, it is important to assess dynamic control through gait analysis and functional activities, strengthen the hip abductors and external rotators, and stretch the tight soft tissue structures that may be involved such as the TFL, hamstrings, quadriceps, and calf.

If the PF disorder is a result of adverse dynamic patellar tracking, it is important to correct the alignment of the joint by reeducating and strengthening the quadriceps with biofeedback and in various ranges and positions. The use of tape may also assist in pain modulation and allow for more vigorous exercise.

A person with pain from overuse should rest and avoid pain provoking activities. Once the symptoms are controlled, a program focusing on motor control of the lower extremity is implemented to restore strength deficits. The quadriceps may be inhibited as a result of pain and swelling. The exercises should be performed in a painfree manner to reduce the risk of re-occurrence of quadriceps inhibition which will cause abnormal PF mechanics.

People with degenerative changes should have a program focused on strengthening the muscles of the lower chain in functional positions that are minimally stressful to the articular cartilage to prevent further deterioration. Studies have demonstrated that people with degenerative changes have experienced symptom reduction and improvement in the quality of life from exercise.

Therefore, when designing and progressing PF rehabilitation programs, it is important to be aware of the magnitude of stress that certain activities can cause to the joint which is illustrated by the graph below. The understanding of lower extremity mechanics and performing a comprehensive evaluation leads to the identification of the etiology and application of the appropriate intervention.



(Data compiled from Reilly & Martens, Acta orthop.Scandinav. 43, 126-137, 1972)

At OPTM, we consider all of these factors when evaluating and treating individuals with PF pain.

Happy New Year from the staff at OPTM: Paul Christensen, MPT, OCS, ATC; Dan Vold, MPT; Susan Casner-Kay, MPT, OCS; Louise Kobin, MPT; Fabrice Rockich, DPT.