

A COMPARATIVE STUDY OF THE INCIDENCE OF MUSCLE TIGHTNESS IN
MALES WITH AND WITHOUT PATELLO-FEMORAL ARTHRALGIA.

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ABSTRACT

Patello-femoral pain syndrome is the most common complaint encountered in the knee complex in an athletic population (Fox, 1975). The syndrome represents any disturbance of the patello-femoral mechanism which leads to pain under or around the patella (Insall, 1982).

Many aetiological factors have been proposed, including chondromalacia patellae and abnormal bony and soft tissue elements which result in abnormal patella-femoral alignment and patella tracking.

Patello-femoral pain patients may have a higher incidence of muscle tightness in the following muscle groups, hamstrings, rectus femoris, iliotibial band and gastrocnemius. However, little evidence has been established to verify this common belief.

For this reason, 17 male subjects with patella-femoral pain were carefully matched according to age, height weight, and activity level in his sport and occupation with a control subject. The 34 subjects underwent measurement for left and right hamstrings, rectus femoris, gastrocnemius and soleus muscle lengths. Neural tissue length was also evaluated because the limit of the straight-leg-raise test used to measure hamstring length may be due to neural tissue tension (Brieg 1960). Experimental subjects were grouped according to whether they suffered from unilateral or bilateral patella-femoral pain (Group AI-left patella-femoral pain, Group AII-right patella-femoral pain and Group AIII bilateral patella-femoral pain).

In this study analysis revealed that, overall patients with patella-femoral pain syndrome, disregarding whether their symptoms were unilateral or bilateral, were bilaterally tighter in hamstrings, gastrocnemius and neural tissue length when compared to the control subjects.

The finding that there was no difference in rectus femoris muscle length between subjects and controls is contrary to commonly held clinical beliefs. However, the results of this study agree with those who claim that there is little or no difference between symptomatic and asymptomatic limbs in a sample of patella-femoral subjects (Micheli and Stanitski, 1981; Beck and Wildermuth, 1985; Antich et al, 1986).

For the first time neural tissue length was documented in a sample of patello-femoral pain subjects. It was found that neural extensibility was generally less in subjects than controls. This finding has entertained the hypothesis that posterior leg (hamstrings and gastrocnemius) muscle length deficits may more reflect neural tissue decrease rather than muscle tightness. This interesting aspect requires further investigation.