

CHAPTER 1



BACKGROUND AND RATIONALE

Rapid recovery to full health and fitness is of great importance to athletes, both professional and amateur, to ensure that training and competition can be resumed as soon and as safely as possible. Today, with the increased awareness on healthful benefits of exercise, a large number of middle aged and elderly people have joined the younger generations in the track & field, the swimming pool and gymnastics. Sports has attracted not only the healthy and active but also the sick and handicapped who, through physical exercise, hope to improve their conditions.

Patellofemoral pain is a common symptom, especially in athletic population.^[1] It affects large percentage of the athletic population in their normal training and competition.^[2]

The incidence of patellofemoral pain has been reported to be high in muscular male and female athletes.^[3] It had been reported that 30% of patients seen in the sports medicine clinic had patellofemoral pain.^[4] In a study of running injuries, it was found that the patellofemoral area was the most frequent site of knee pain.^[5]

The most frequent cause of patellofemoral pain is the trauma of soft tissue which is around the patellar. It includes both acute and repetitive trauma, such as patellar chondromalacia, osteochondritis, ligamentous injury and muscular injury.^[6] Malalignment has also been shown to result in damage to the patellar articular surface as well as strain on the peripatellar structures, which can cause pain.^[7]

It has been stated that a muscular imbalance between the vastus medialis and vastus lateralis muscles contributes to patellar maltracking.^[8] Numerous electromyographic studies have documented an overall decrease in quadriceps muscle activity and an imbalance in vastus medialis and vastus lateralis muscle activity in patients with patellofemoral pain and subluxation.^[9]

The decrease in quadriceps muscle activity was found to originate from a reflex inhibition.^[10] The stimulus for this inhibitory effect has been found to originate from pain and effusion.^[11]

The conventional conservative management of PF pain has focused on modification of activities, nonsteroidal anti-inflammatory medications, and quadriceps muscle strengthening.^[12]

A part of the conservative management, patellar braces have been used to decrease pain.^[13]

Acupuncture is a special medical method of traditional Chinese medicine. It was reported that acupuncture therapy had been effective to many kinds of diseases, such as gastritis,^[14] haematopoietic dysfunction due to radio-chemotherapy,^[15] appendix mass,^[16] reaction caused by blood transfusion and fluid infusion by ear-acupuncture,^[17] etc. Acupuncture is more effective to the diseases related with nerve, such as hemiplegia caused by stroke with thread-embeddal in acupoints,^[18] parkinson's disease,^[19] trigeminal neuralgia^[20] and etc. Acupuncture was also applied in reducing some kinds of pain caused by soft tissue damage or fracture.^[21] It was reported that acupuncture had been used to reduce the pain caused by shoulder-frozen, the effective rate was 83.33%.^[22]

In China, acupuncture is a very popular medical therapy. The advantage of acupuncture is easy to perform. The cost is cheaper than drugs. But most importantly acupuncture therapy has special effect to some diseases, including the reduction of many kinds of pain caused by soft tissue damage or fracture. It has also been reported in some articles that acupuncture was good to reduce patellofemoral pain. The effective rate was 64%.^[23] But they were just clinical observations. There were neither statistical significance nor sufficient evidence to support.