Journal of Physiotherapy and Rehabilitation

Editorial A SCITECHNOL JOURNAL

Anterior Cruciate Ligament Injury

Jason Falvey*

Department of Physiotherapy , University of Pittsburgh, 3830 South Water Street, Pittsburgh, USA

***Corresponding author:** Jason Falvey, University of Pittsburgh Tong, Water Street, Pittsburgh, USA, E-mail: Falaveey@utes.edu.in

Received date: July 01, 2021; **Accepted date:** July 16, 2021; **Published date:** July 23, 2021

Editorial Note

An anterior cruciate ligament injury occurs when the Anterior Cruciate Ligament (ACL) is either stretched, partially torn, or completely torn. The most common injury is a complete tear. Symptoms include pain, a popping sound during injury, instability of the knee, and joint swelling. Swelling generally appears within a couple of hours. In approximately 50% of cases, other structures of the knee such as surrounding ligaments, cartilage, or meniscus are damaged. The underlying mechanism often involves a rapid change in direction, sudden stop, landing after a jump, or direct contact to the knee. It is more common in athletes, particularly those who participate in alpine skiing, football (soccer), American football, or basketball. Diagnosis is typically made by physical examination and is sometimes supported by Magnetic Resonance Imaging (MRI). Physical examination will often show tenderness around the knee joint, reduced range of motion of the knee, and increased looseness of the joint.

Prevention is by neuromuscular training and core strengthening. Treatment recommendations depend on desired level of activity. In those with low levels of future activity, nonsurgical management including bracing and physiotherapy may be sufficient. In those with high activity levels, surgical repair via arthroscopic anterior cruciate ligament reconstruction is often recommended. This involves replacement with a tendon taken from another area of the body or from a cadaver. Following surgery rehabilitation involves slowly expanding the range of motion of the joint, and strengthening the muscles around the knee. Surgery, if recommended, is generally not performed until the initial inflammation from the injury has resolved.

About 200,000 people are affected per year in the United States. In some sports, females have a higher risk of ACL injury, while in others, both sexes are equally affected. While adults with a complete tear have a higher rate of knee osteoarthritis, treatment strategy does not appear to change this risk

Some studies have suggested that there are four neuro muscular imbalances that predispose women to higher incidence of ACL injury. Female athletes are more likely to jump and land with their knees relatively straight and collapsing in towards each other, while most of their body weight falls on a single foot and their upper body tilts to one side. Several theories have been described to further explain these imbalances. These include the ligament dominance, quadriceps dominance, leg dominance, and trunk dominance theories. The ligament dominance theory suggests that when females athletes land after a jump, their muscles do not sufficiently absorb the impact of the ground. As a result, the ligaments of the knee must absorb the force, leading to a higher risk of injury. Quadriceps dominance refers to a tendency of female athletes to preferentially use the quadriceps muscles to stabilize the knee joint. Given that the quadriceps muscles work to pull the tibia forward, an overpowering contraction of the quadriceps can place strain on the ACL, increasing risk of injury.

Leg dominance describes the observation that women tend to place more weight on one leg than another. Finally, trunk dominance suggests that males typically exhibit greater control of the trunk in performance situations as evidenced by greater activation of the internal oblique muscle. Female athletes are more likely land with their upper body tilted to one side and more weight on one leg than the other, therefore placing greater rotational force on their knees.

Before puberty, there's no determined difference in frequency of ACL tears between the sexes. Changes in sex hormone levels, especially multiplied degrees of estrogen and relaxin in ladies during the menstrual cycle, had been hypothesized as causing predisposition of ACL ruptures. This is because they will increase joint laxity and extensibility of the gentle tissues surrounding the knee joint. Ongoing research has found a greater prevalence of ACL accidents in women for the duration of ovulation and fewer injuries at some stage in the follicular and luteal levels of the menstrual cycle.

Take a look at consequences have shown that woman collegiate athletes with awareness ranges of relaxin which might be more than 6.0 pg/mL are at four times higher risk of an ACL tear than those with lower concentrations.

Additionally, woman pelvises widen for the duration of puberty through the have an effect on of sex hormones. This wider pelvis calls for the femur to perspective towards the knees. This angle closer to the knee is called the Q attitude. The average Q attitude for guys is 14 levels and the average for girls is 17 levels. Steps may be taken to lessen this Q angle, including the use of orthotics. The enormously wider lady hip and widened Q perspective can also cause an elevated likelihood of ACL tears in girls

Citaion: *Falvey J (2021) Anterior Cruciate Ligament Injury. J Physiother Rehabil 5:7.*