

ACL Injuries in the Knee

The knee is a frequently injured joint due to its location. The knee joint is between the two longest bones in the body, and the entire weight of the body is transferred to the foot through the knee. The knee is also more prone to injury because its stability decreases as the knee bends, since the meniscus and the ligaments provide less support in the flexed position.

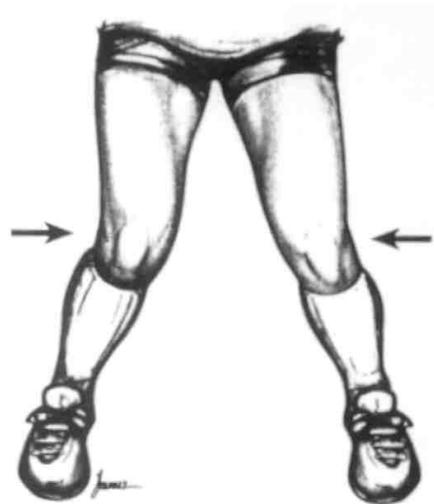
One of the most common knee injuries is an **anterior cruciate ligament (ACL)** sprain or tear. In recent years, the increase in ACL injuries has been remarkable. It is estimated that 70 percent of ACL injuries occur through non-contact injuries, while 30 percent result from direct contact with another player or object.

Athletes who participate in high demand sports like soccer, football, and basketball are at higher risk of injury to their anterior cruciate ligaments.

Several studies have shown that female athletes have a higher incidence of ACL injuries than male athletes in certain sports such as basketball and soccer.

This may be due to differences in:

- Physical conditioning
- Muscular strength, especially the hamstring muscle
- Neuromuscular control
- Reduced hip and knee joint range of motion
- Pelvis and lower extremity (leg) alignment. Some female athletes play using a knock-kneed position which can put a lot of stress on the ACL



The anterior cruciate ligament can be injured in several ways:

- Changing direction rapidly

- Stopping suddenly
- Slowing down while running
- Landing incorrectly from a jump
- Direct contact or collision, such as a football tackle

What are the signs and symptoms of an ACL injury?

- A pop or tearing sound - many athletes will hear or feel a pop when the ACL tears
- Immediate onset of swelling - this is an indication that there is bleeding from the injured ligament
- Pain - most patients experience quite a bit of pain with an ACL injury
- Instability - patients often describe a buckling or “giving out” sensation in the knee
- Loss of full range of motion (the inability to fully bend and/or extend the knee)
- Tenderness along the joint line
- Discomfort or difficulty walking

How can an ACL injury be prevented?

A recent study of NCAA Division 1 female soccer players showed that a physical therapy program lowered ACL injury rates by 41% compared with players who only did a regular warm-up. It is important to speak with your athletic trainer, physical therapist, or sports medicine specialist to get a preseason injury prevention analysis done. He or she will identify and target weak muscles (e.g., weak hips, which leads to knock-kneed landing positions, and weak hamstrings), poor foot alignment which also results in knock-kneed position, and improper jumping mechanics that can add stress on the ACL.

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