

Knee breakdown

During the past 15 years, there has been an increase in serious knee injuries affecting female athletes. Research suggests females suffer tears of the **anterior cruciate ligament (ACL)** three to five times more often than male athletes.

The injury

Among the ways non-contact ACL injuries can occur are sudden stops, sharp cuts or landing and changing direction with both feet planted. An athlete often feels a pop when the ACL is injured; this usually signals the ACL is torn completely.

The glossary:

Anterior cruciate ligament: The ACL is a stretchy, band-like ligament, one of four helping to stabilize the knee. The ACL connects the tibia to the femur in the middle of the knee joint. The design of the ligament is to limit turning and prevent overrotation/damage to the knee.

Femur, tibia, fibula: The bones that make up the knee. The femur is the thigh bone, the tibia runs through the calf. The fibula is also in the lower leg, running along the back of the calf.

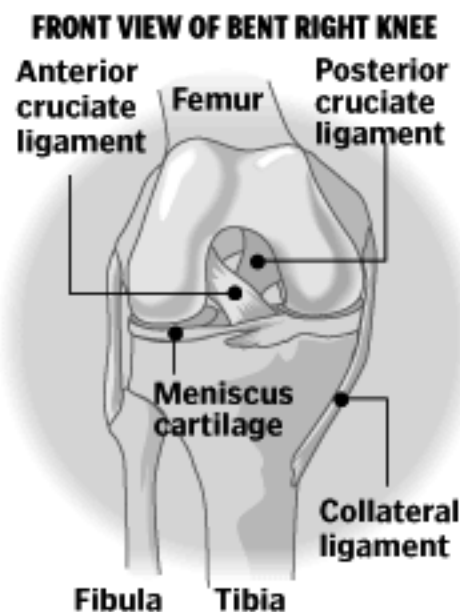
Patella: The kneecap bone.

Collateral ligaments: The most commonly injured ones are the medial collateral ligament (MCL). They run laterally in the knee, also acting as stabilizers.

Cruciate ligament: The posterior cruciate ligament is located behind the ACL and stops the tibia from moving backward.

Meniscus: Pieces of cartilage that sit between the femur and tibia, cushioning against damaging shock and stress vibrations to the bones.

Articular cartilage: It acts as a shield for the ends of the tibia, femur and patella.



The factors for female knee injuries

Here are a few of the most popularly accepted theories.

1. Muscle development: Female athletes tend to develop strong quadriceps, but do not have the same level of strength in their gluteals, abdominals or hamstring muscles. This imbalance can lead to injury.

2. Hormones: The female body is under constant, normal hormonal changes. Published research has found the monthly cycle may produce changes in muscle elasticity. Muscles may be more prone to tear during certain times of the menstrual cycle.

3. Body type: The wider angle of a woman's hips places more force on the knees. The "V" angle from a woman's hips to her knees can produce a natural tendency to turn the knees inward when jumping.

Note: Research is still ongoing to determine the exact cause of female knee injuries.