

For more than a decade, researchers have debated various reasons why anterior cruciate ligament (ACL) injuries are occurring more often in women than men, ranging from anatomical to hormonal differences in the genders.

Recent studies show that female athletes participating in certain sports like soccer or basketball are three- to four-times more likely to injure their ACL than males. A majority of these injuries are occurring in women between the ages 15 and 25, it was reported at the meeting.

At a June 1999 consensus meeting sponsored by the American Academy of Orthopaedic Surgeons, orthopaedic researchers reported these factors can explain the increase in ACL injuries among the female athletic population.

- **Biomechanical factors.** Experts reported that females tend to place more emphasis on their quadriceps muscle than male athletes, making it a significant reason why they are at increased risk of ACL injuries. The panel agreed females should learn to use their hamstring muscles more often. The experts also concluded that females tend to land on a flat foot rather than their toes which can contribute to the increased injury rate.
- **Hormonal influences.** There should be no modification of activity or restriction from a sport at any time during the menstrual cycle, experts said. They also stated that a woman's hormones do not increase the chances of sustaining an ACL injury, but suggested that further investigation is warranted.
- **Environmental factors.** Functional knee braces do not prevent ACL injury, experts reported. They agreed that an athletic shoe's surface may improve performance because it provides good traction on certain surfaces, but at the same time increases the risk of injury.
- **Anatomic risk factors.** The experts concluded that there were insufficient data to support the theory that ACL size is related to injury risk. They also reported that no consensus could be reached on the role of the size of the femoral notch (the area within the knee that contains the cruciate ligaments) as it relates to injury occurrence.

The researchers agreed training programs that teach proper landing methods or basic injury prevention techniques should be adopted to help female athletes.

According to 1998 injury statistics from the U.S. Consumer Product Safety Commission, more than 81,600 people injured their knee playing soccer, and 225,800 sustained injuries in basketball- considered two high risk sports for ACL injury in females.

- Materials borrowed from the American Academy of Orthopaedic Surgeons – [www.aaos.org](http://www.aaos.org).