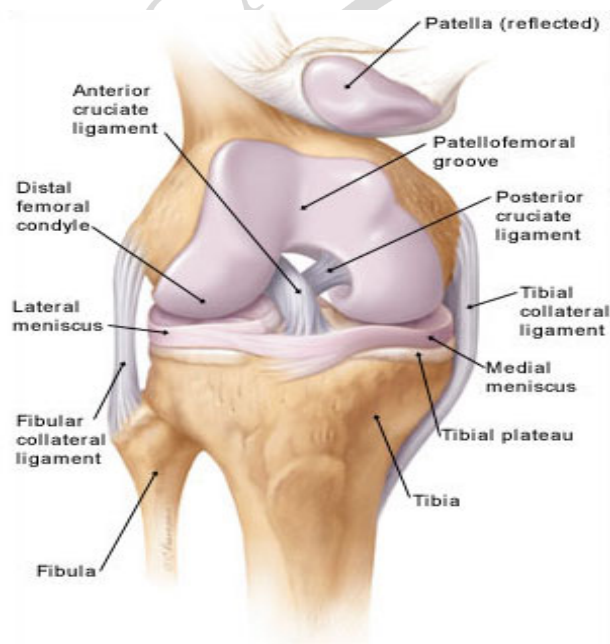


## ACL Ruptures in Female Adolescents

The knee joint is the largest joint in the body. It allows for bending and straightening, as well as some slight side to side turning. The anterior cruciate ligament (ACL) runs from the bottom of the thigh bone (femur) and angles to the front top portion of the knee bone (tibia).



Women's athletics has come a long way in the past 10-20 years, but that success has come at a price. Female athletes, especially younger ones, outnumber males when it comes to tears of the anterior cruciate ligament (ACL). Let's face it, God made us different! Females have been keeping up with the male species and in some cases surpassing them. However, in sports, the female knee could be at a biomechanical disadvantage. "I think girls run and jump and land differently than boys.

It's just the way we're built." <sup>1</sup> These differences, say Mayo Clinic Dr. Amy McIntosh, could be part of the problem. Another theory is... "That we're more prone to an ACL tear during certain periods of our menstrual cycle because of estrogen receptors on the ACL." <sup>1</sup> Females also have a smaller "notch" inside the knee for the ACL to sit in.

"Up until puberty, ACL ruptures reportedly occur at about the same rate in males and females. At the age of 12, there is a large rise in ACL injuries in females, according to researchers. The peak rate of ACL injuries reportedly occurs near the age of 16 in girls." <sup>2</sup>

There appears to be evidence that hamstring and hip abductor muscles are weaker in many girls. This can cause the knee to buckle and rotate in, thereby increasing the risk of possibly suffering an ACL tear.

Unless the injury is mild, it often leads to knee instability, potentially requiring reconstructive surgery and lengthy rehabilitation. In addition to interrupted sports participation, ACL injuries may lead to loss of scholarship funding, lower academic performance and a greatly increased risk of developing osteoarthritis in the knee.

Effective training programs for rehabilitating ACL's are those that focus on a combination of exercise which: targets muscle imbalances, improves coordination and movement patterns, and improves balance/position sense (proprioception).

Stay tuned...Next month we will introduce a scientifically proven program to help reduce incidence of injury in adolescent girls.

- 1) Mayo Clinic Medical Edge. [ACL Injuries in Girls](http://www.mayoclinic.org/medical-edge/scripts/radio/2008apr30.pdf)

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- 2) [Teenage girls have greater ACL injury risk than boys.](http://www.utsandiego.com/news/2010/dec/14/teenage-girls-have-greater-acl-injury-risk-than/) Training and biomechanical analysis are important preventive measures moving forward

<http://www.utsandiego.com/news/2010/dec/14/teenage-girls-have-greater-acl-injury-risk-than/>

**The health information contained herein is provided for educational purposes only and is not intended to replace discussions with a healthcare provider. Decisions regarding patient care must be made with a healthcare provider, considering the unique characteristics of the patient.**

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