



# PEDIATRIC AND ADOLESCENT SPORTS MEDICINE UPDATE



## ACL Tears in Young Athletes

by Drew E. Warnick, M.D.

Participation in sports that involve sudden sharp changes of direction, such as football, soccer, and basketball, place athletes at the highest risk for ACL injuries. Approximately 500,000 ACL injuries occur each year in the United States, and 80% of these injuries occur in females. There is a growing number of ACL tears in children and adolescents due to the early specialization and highly competitive nature of many of today's youth sports.

### What is the Anterior Cruciate Ligament (ACL)?

The ACL is one of the four main ligaments of the knee. It stabilizes the knee joint and protects the tibia (shin bone) from sliding forward and rotating on the femur (thigh bone) during sudden decelerations, unexpected changes in direction, and landing from a jump.

### What happens when the ACL is torn?

When the ACL is torn, the knee is unstable and prone to injury. If an athlete returns to sport without ACL reconstruction, the knee may "give out" and injury the bearing surface (cartilage) and shock absorber (meniscus) inside the knee joint.

### How do I know when the ACL is torn?

An athlete feels the sensation of a "pop" at the time of injury. The athlete will then have immediate swelling and pain in the knee joint. An ACL tear is then diagnosed by physical examination. A special maneuver called the Lachman's exam is the most sensitive indicator of an ACL tear. Magnetic Resonance Imaging (MRI) is used to confirm the diagnosis and is helpful in determining concurrent meniscal and cartilage injury.

### What are my treatment options?

The most appropriate treatment for a young athlete with an ACL tear depends on skeletal maturity, family and patient desires, level of competition, functional disability and presence of other knee injuries. Functional bracing and non-operative management may lead to episodes of knee instability if the athlete returns to sport. Episodes of instability inevitably lead to cumulative damage in the knee joint and can cause early degeneration.



ACL reconstruction stabilizes the knee joint to allow participation in sports and prevent further Meniscal or cartilage damage.

### Is ACL reconstruction safe in a growing child?

Special ACL reconstruction exist that allow a pediatric sports medicine surgeon to reconstruct the ACL and avoid the problem of growth disturbance.

### How do I decide what reconstruction is best?

Different children mature at different ages. A special x-ray (Bone Age) can be taken that allows the physician to know how many years of growth remain in the young athlete. This x-ray and other signs of physiological maturity allow ACL reconstruction in a manner that avoids growth disturbance and restores stability and protection to the knee joint.

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