Rate of pediatric ACL tears increasing 2.3% annually
by Melissa Jenco, News Content Editor

The rate of anterior cruciate ligament (ACL) tears among children and teens has been increasing about 2.3% per year for the past two decades, according to a new study.

The authors say their research is the first that looks at a broad range of children over a long time period.

In the study "ACL Tears in School-Aged Children and Adolescents Over 20 Years," (Beck NA, et al. Pediatrics. Feb. 22, 2017, http://pediatrics.aappublications.org/content/early/2017/02/20/peds.2016-1877), researchers reviewed insurance billing data on children ages 6-18 years from 1994-2013 and found that on average, ACL tears occurred at a rate of 121 ± 19 per 100,000 person-years.

The incidence rate per 100,000 person-years rose 2.5% annually for females and 2.2% annually for males over 20 years.

The authors noted that other studies have attributed rising ACL tears to increases in females and younger children participating in sports, greater clinician awareness and improved diagnostics.

Females accounted for about 52% of the 3,303 injuries and outpaced males at younger ages, although not at ages 17-18. The risk for females peaked at age 16 and for males at 17.

The higher rates of injury for females "are thought to be related factors such as geometry of the intercondylar notch, and smaller size of ACL, as well as biomechanical and neuromuscular factors such as higher quadriceps-to-hamstring ratio and landing from a jump with less hip and knee flexion and more hip adduction leading to increased dynamic knee valgus with greater knee abduction angles," according to the study.

In 2014, the Academy released a clinical report aimed at helping pediatricians diagnose, treat and prevent ACL tears and suggested neuromuscular training as a means of prevention.

"Neuromuscular training appears to reduce the risk of injury in adolescent female athletes by 72%," the AAP report states. "Prevention training that incorporates plyometric and strengthening exercises, combined with feedback to athletes on proper technique, appears to be most effective."

Resources

- Video on preventing ACL injuries
- AAP News story "ACL injuries on the rise, but evidence-based program can reduce risk: clinical report"
- Information for parents on ACL injuries
- AAP Council on Sports Medicine and Fitness