

## **PHYSICAL THERAPY CAN HELP PREVENT ACL INJURIES IN FEMALE ATHLETES**

In the knee, there are four main ligaments that hold the knee together and keep it stable. The function of the ligament is to hold bone to bone. The ACL is the anterior cruciate ligament, one of the ligaments inside the knee joint. This particular ligament prevents the lower leg bone, the tibia, from sliding too far forward or rotating on the thigh bone, the femur.

As fall soccer season kicks off at schools across the county, Complete Physical Therapy, LLC urges female athletes to consider a new warm-up program to help lower their growing risk of ACL injuries. Concurring with a study published in the *American Journal of Sports Medicine* (August 2008), Complete Physical Therapy, LLC says specialized stretching, strengthening, agility and jumping exercises could lower the overall ACL injury rate among female athletes.

The study evaluated outcomes of NCAA Division 1 female soccer players who performed the Prevent Injury, Enhance Performance (PEP) program, designed by physical therapists at Santa Monica (CA) Orthopedic and Sports Medicine Group. Those who performed the PEP program had an overall ACL injury rate 41 percent lower than a group of female athletes who did their regular warm-up. This was one of the largest studies conducted in the NCAA with 1,435 athletes participating.

The PEP program, one example of the many physical therapy-based programs that have demonstrated an equal ability to reduce ACL injuries among female athletes, consists of sport-specific agility exercises and addresses potential deficits in the strength and neuromuscular coordination of the stabilizing muscles around the knee joint. A program designed to strengthen weaknesses in the lateral hip muscles, gluteal and core muscles were also addressed.

According to recent research published in the *British Journal of Sports Medicine* found that ACL tears occur four times more frequently in females than in males involved in the same amount of sports participation. The difference in the neuromuscular control, or the way our muscles contract and react, is one of four primary factors contributing to why women are more susceptible to knee injuries than men. Other discrepancies are anatomical (men and women are structurally different), hormonal (women's hormonal makeup affects the integrity of the ligament, making it more lax), and bio-mechanical (the positions our knees get in during athletic activities).

While men use their hamstring muscles more often, women rely more on their quadriceps, which puts the knee at constant risk. To combat these natural tendencies, physical therapists may develop a treatment program to improve strength, flexibility, and coordination, as well as to counteract incorrect existing patterns of movement that may be damaging to joints.

Physical therapist-designed programs can teach athletes how to avoid abnormal movement patterns and lessen stress on the knee, which may include exercises to strengthen hamstring and core muscles. Whether patients are athletes or not, the physical therapist's expertise includes not only rehabilitation and restoration of normal levels of function, but also education regarding how to prevent further injury.