

## Knee Injury and Risk Reduction in Young Female Athletes



Natalia Pallares  
PT, DPT, OCS  
Physical Therapist

Natalia Pallares, PT, DPT, OCS  
Memorial Hospital Miramar  
U18 Sports Medicine

Female athletes are at an increased risk of incurring noncontact injuries to their knees while playing sports. Recent studies show significantly higher ACL injury rates in female athletes compared with their male counterparts. The ACL or anterior cruciate ligament is one of the principle ligaments inside the knee that helps keep the knee stable during cutting and deceleration movements. Women are two times more likely than men to injure their ACL from sports.

This is most evident in such sports as basketball and soccer. Increased valgus (abnormal knee angle), instability in the knee and muscle imbalance in the legs that cause the quadriceps to work more than the hamstrings during activities increase the stress on the ACL in women. Women also tend to play sports in a more upright posture, increasing the load and force placed on the knee. It is estimated that nearly 38,000 young female athletes in the United States tear their ACL every year. This amounts to \$1 billion in yearly costs to diagnose and treat these injuries.

Through proper training and education we can decrease the incidence of ACL injuries in teenage female athletes. Current initiatives, including the Sportsmetrics Program, focus on preventing ACL injuries through performance enhancement techniques. The program uses jumping drills and sports-specific speed, agility and conditioning drills to teach the athlete to preposition the body safely when jumping, landing, accelerating and decelerating. This helps decrease noncontact knee injuries by avoiding poor movement strategies that place the athlete at risk. Participation in this type of program has been documented to decrease the incidence of ACL tears in young female athletes by 80 percent. The physical therapists at U18 Sports Medicine are trained and certified by Sportsmetrics to use these principles in the prevention of further injury with patients who are returning to sports after having sustained an ACL injury or who are being treated for other conditions and demonstrate increased risk for serious knee injury.

For more information about reducing the risk of knee injury, U18 Sports Medicine, or the Sportsmetrics program, please visit [U18sportsmedicine.com](http://U18sportsmedicine.com) or [sportsmetrics.net](http://sportsmetrics.net).

### References:

- Booden BP, Griffin LY, Garrett WE. Etiology and prevention of noncontact ACL injury. *The Physician and Sports Medicine*. 2000; 28.
- Hewett TE, Meyer GD, Ford KR. Anterior cruciate ligament injuries in female athletes: part 1, mechanics and risk factors. *Am. J. Sports Med*. 2006; 34: 299-311.
- Hewett TE, Meyer GD, Ford KR. Anterior cruciate ligament injuries in female athletes: part 2, a meta-analysis of neuromuscular interventions aimed at injury prevention. *Am. J. Sports Med*. 2006; 34: 490-498.
- Meyer GD, Ford KR, Hewett TE. Rationale and clinical techniques for anterior cruciate ligament injury prevention among female athletes. *Journal of Athletic Training*. 2004; 39:352-364.



### TIP:

WHEN LANDING OFF A JUMP: LAND SOFTLY, ALLOW YOUR KNEES TO BEND, AND AVOID BRINGING KNEES TOGETHER.