

## Why ACL Injuries are So Common for High School Females, and How to Avoid Them

### General Facts Concerning Female Athletes and ACL Injuries

(For visual information on ACL injuries refer to the article on the [sgptr.com](http://sgptr.com) website under injury/wellness info)

- In the past 15 years the number of females participating in sports, high school and collegiate, has increased by 700%; many more girls are getting out onto the playing fields and courts which unfortunately means more injuries as well
- In all sports, the most common type of injuries for female athletes are to the knees, and most knee injuries involve the anterior cruciate ligament, or ACL
- Over 1.4 million women have been affected by ACL injuries in the past 10 years with injuries increasing by 172%
- One in every 100 high school female athlete suffers from an ACL injury of some sort, usually a tear
- ACL tears that are serious enough can have the potential to prevent an athlete from competing in their respective sport for the rest of their lives
- Females are much more prone to ACL injuries than males, up to 8 times more susceptible

### Why the ACL? Why Females?

- The ACL is an extremely vulnerable ligament for all athletes, both males and females; any time an athlete changes direction, pivots, jumps or slows down from running, the ACL is stressed, and if overstressed, can easily tear. The most common theories as to why females are more vulnerable to ACL injuries include the following:
  - A. In general, females have weaker quadriceps and hamstring muscles than males; weaker supporting musculature (although it has not been proven) may have an effect on stability when females plant their feet during sudden jumping, cutting and stopping;
  - B. The female pelvis is wider and girls tend to be more “knock-kneed” than males, (the knees are abnormally closed together), causing stress and potential injury to the knees;
  - C. Others say that a female’s hormone level, which can change during menstrual cycles, can increase ligament laxity, making them prone to tears and other injuries;
  - D. Some theories hold that the actual ACL of females may be much smaller and weaker than males
- Additional contributing factors are too much playing time, lack of preventative measures and not enough stretching before competing/playing/practicing
- Whatever the *exact* reason females are more vulnerable than males may not be known at this point, but an ACL injury for an athlete of either sex may cause arthritis in the knee of victims later in life, and also has the potential to prevent the athlete from playing or competing in a sport for the rest of their life

### Can ACL Injuries Be Prevented?

Although there is no actual proof, some theories of prevention seem to make sense in attempting to prevent injuries:

- Girls who participate in year round sports may not have enough time to train in between seasons; some doctors prescribe that they should have 4-6 weeks for personal training before seasons; if that amount is not possible, they should incorporate 10-15 minutes of that training into their daily workouts
- Warm-up before playing by jogging or doing slides and backpedals
- Strengthen leg muscles by doing lunge walks, ball bridges and calf raises
- [Plyometrics](#): lateral, front/back and single leg hops, rebound and scissor jumps
- Increase agility with exercises like the shuttle and pivot runs
- Always **STRETCH** the hamstrings, quads, calves, groin and hip flexors
- Strength training, speed training and building joint flexibility may also help extremely in preventing ACL injuries
- Athletes should also learn the proper way to land when jumping, pivoting and coming to a complete stop after running;\_ for further tips on how to go about doing this from the American Academy of Orthopedics, click [here](#)
- There are numerous injury prevention plans out there presently provided by Sports Medicine groups (see links below)

It is unfortunate how many female athletes’ careers can come to a sudden halt in an instant from something as simple as landing the wrong way after a rebound or by coming to a complete stop after running down a field. ACL injuries are a far-too-common occurrence in female high school sports today. While no particular measure is proven to be 100% effective, taking some of the basic steps provided here will certainly help. Coaches need to encourage more preventative techniques before physical activity, as well as additional training aside from normal practices. The more work that goes into preventing ACL injuries, it seems the less likely the chance is of actually injuring the important ligament.

### **Additional Links**

1. <http://newsbureau.upmc.com/SportsMed/FemaleAcl.htm>
2. <http://www.urmc.rochester.edu/pr/news/story.cfm?id=554>
3. <http://www.chron.com/disp/story.mpl/health/4072217.html>
4. <http://www.nubella.com/content/view/1511/50/>
5. <http://orthopedics.about.com/cs/aclrepair/a/acl.htm>
6. [http://sportsmedicine.about.com/cs/knee\\_injuries/a/aa021902a.htm](http://sportsmedicine.about.com/cs/knee_injuries/a/aa021902a.htm)
7. <http://www.sport-fitness-advisor.com/plyometrics.html>

By  
Gregory Gargiulo  
Updated 9/06