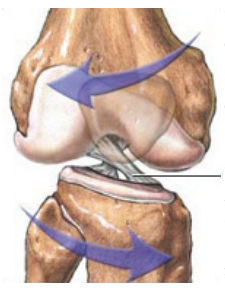
Gender Differences in ACL Injuries of the Knee

Brad J. Bernardini, MD

Anterior Cruciate Ligament (ACL) Injuries

Knee injuries in female athletes are on the rise, and ACL injuries are one of the most common severe knee injuries in sports.



They affect the lives of more than 250,000 people in the United States each year, most of them women. This is due not only to an increase in female participation in athletics, but also as a result of multiple inherent differences between males and females anatomically, biomechanically and biologically. The highest incidence of ACL injuries is in individuals 15 to 25 years old who participate in sports which require jumping, pivoting and rapid starting or stopping such as basketball, soccer, and field hockey. Most studies show that females are about five times more likely to sustain a rupture of the ACL than males.

Lack of Treatment Can Cause Serious Damage

The ACL is located inside the knee joint and stabilizes the joint by preventing the shinbone (tibia) from sliding forward beneath the thighbone (femur). A hard twist or an abnormal landing after a jump can put excessive pressure on the ACL and can tear it. Once it is torn, the knee gives out or buckles and can no longer support the body effectively. Unless an injured ACL is accurately diagnosed and treated, the cushioning cartilage (the meniscus) in the knee could be seriously damaged. Without this cushion, the thighbone and the shinbone rub against each other, leading to further damage of the cartilage and early osteoarthritis.

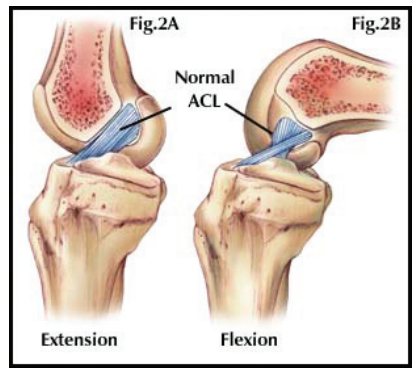
Prevention Program for Female Athletes

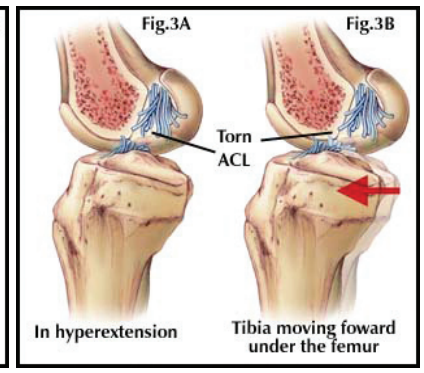
The South Jersey Center for Orthopedics & Sports Medicine has developed a screening protocol that predicts which females are likely to suffer knee injuries and currently offers testing at their Vineland facility. If athletes are found to be at high risk for ACL injuries, they are advised to begin a training program that addresses these issues.

Brad Bernardini, MD is Fellowship Trained in Sports Medicine and specializes in shoulder and knee injuries. He has been particularly interested in ACL injuries, as well as their prevention and treatment. Dr. Bernardini recently had an article published on knee joint stability in the American Journal of Sports Medicine and was the first in the region to perform the "All-Inside" ACL reconstruction and the Double Bundle ACL reconstruction techniques. Both of these procedures are shown to improve post-operative outcomes. He is currently developing a regional prevention program to decrease the rate of ACL injuries in high risk female athletes. The prevention program seeks to improve:

- Balance
- Body/joint awareness
- Movement technique
- Muscle strength, specifically in the hamstring

Generally, female athletes trained three days a week for 90 minutes, followed by 15 minutes of stretching exercises. The results demonstrated an improvement in speed, jumping ability and agility. More importantly, ACL injury rates were shown to decrease in the trained females. In contrast, the untrained female group demonstrated no significant improvement in the areas being measured and their ACL injury rates remained higher than their male counterparts.





For further information about a screening evaluation and our prevention program, Brad Bernardini, MD can be reached at the South Jersey Center for Orthopedics & Sports Medicine at 856-696-0900 or on the web at www.southjerseycenter.com.

Dr. Brad Bernardini is a New Jersey native and a fellowship trained specialist in arthroscopic surgery and sports medicine. Dr. Brad was born and raised in Vineland, NJ and graduated from Vineland High School.He then attended Bucknell University where he was named a member of the GTE Academic All-American Football Team and remains on the All-Time Record list for the Bucknell Track and Field team in both the 55 m and 100 m dashes. He received his Medical Degree in 1999 from Rush University Medical College in Chicago where he graduated as a member of the prestigious Alpha Omega Alpha National Medical Honor Society. Dr. Brad then served as a resident in Orthopaedic surgery at the University of Connecticut Medical Center where he gained extensive experience in sports medicine and general orthopaedics. His background in sports led him to an additional year of specialized training in arthroscopic surgery and the completion of a fellowship in Sports Medicine at the Taos Orthopaedic Institute in the beautiful Ski Valley of Taos, New Mexico. While there, he was trained in all-arthroscopic surgical techniques with emphasis on the treatment of shoulder and knee problems.

Currently, Dr. Brad is board certified in orthopaedic surgery and has focused his specialized practice on arthroscopic joint reconstructive and reparative surgery, with a particular interest in shoulder and knee injuries. Commonly treated conditions include rotator cuff and labral injuries in the shoulder, as well as knee ligament injuries such as the commonly injured Anterior Cruciate Ligament. Other frequently seen knee problems include cartilage and meniscus tears. Dr. Brad was the first in the region to perform the "All-Inside ACL Reconstruction" and the "All-Arthroscopic Graft Jacket Repair" for massive rotator cuff tears, and remains on the forefront of advanced arthroscopic techniques in shoulder and knee surgery. He also utilizes arthroscopic techniques in other joints such as the elbow, wrist, ankle, and hip.