

## Sports Injury Prevention Programs

**When should injury prevention programs be introduced to young athletes?** Any child old enough to participate in organized sports (6 and up) may participate in these programs.

**What effect will these injury prevention programs improve performance?** YES! "...benefits include increased vertical jump, improved control of dynamic load of the knee, improved balance and increased hamstring strength, power and peak torque."

**What should an ACL injury prevention program include?** They should "include strength and power exercises, neuromuscular training, plyometrics and agility exercises. "An emphasis ... on proper landing technique" and avoiding buckling in of the knees "upon landing and squatting" must be included.

**Should these programs be done in or out of season?** "Maintenance and compliance of prevention programs before, during and after the sports participation season are essential to minimize injuries."

**What is the minimum duration of an injury prevention program?**  
4-6 weeks, twice per week

**Do these programs need to be continued throughout the course of the season?**  
"Maintenance of the program in a routine manner as part of a warm-up and ongoing training is crucial to successful reduction of injury."

Renstrom, P, et. Al. Non-contact ACL Injuries in Female Athletes: an international Olympic committee current concepts statement. *Br J Sports Med* 2008;42(10):394-412.

## ACL Injuries

- An ACL injury at an early age is a life-changing event
- ACL injuries are associated with a 10-fold increased risk for degenerative knee arthritis
- Depending on the sport, women are 2 to 8 times as likely as men to sustain an ACL injury
- **1 in 100 high school female athletes will suffer a serious knee injury**
- The majority of ACL injuries are non-contact in nature meaning there is no physical contact between athletes when the injuries occurred.



**Our computerized video analysis** of the athlete's knee position when jumping and landing allows us to see the forces on the knee joint. **We use exclusive software developed by Cincinnati Sports Medicine** that measures the separation between the knees just before the athlete lands, at landing, and at take-off. The software shows the alignment of the hips, knees, and ankles and the degree of shear forces on the knees.

## Rotator Cuff Injuries

- Rotator cuff injuries in sports are usually a result of either direct trauma or microtrauma from repetitive movements
- This damage to the joint structures can significantly affect shoulder function and often force athletes to decrease their activity levels and change their life styles permanently
- Rotator cuff injuries may require surgery and many months of rehabilitation before an athlete can return to a competitive level.

### Rotator Cuff Tear



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## Program Directors

### Dr. Steven Horwitz

- Certified Chiropractic Sports Physician
- Certified Strength and Conditioning Specialist
- USA Weightlifting Club Coach
- Certified Sports Nutritionist
- Active Release Technique® Certified
- Graston Technique Certified
- 1996 US Olympic Team Medical Staff
- Maryland Director, National Strength and Conditioning Association

### Dr. Paul Glodzki

- Certified Strength and Conditioning Specialist
- Active Release Technique® Certified
- US Rugby Select Side Player
- PAC Rugby Team Chiropractor

*“Too many athletes end their athletic careers not because they want to, but because they have to. Injuries prevent them from continuing. Others have their careers interrupted for various periods of time for the same reason.... There is no question that sports related injuries are a significant problem both for top level sport and for public health.”*

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International Olympic Committee  
Medical Commission Chairman  
Arne Ljungqvist

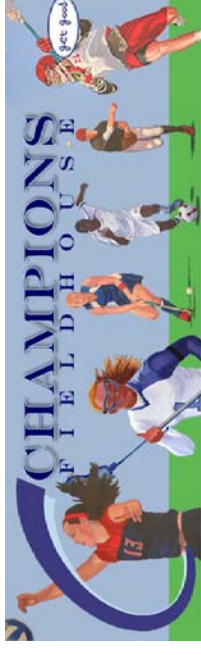
***“You can prevent ACL injury. If you have a daughter who is playing basketball, soccer, handball ..., then it is crazy if her team isn't undertaking one of the evidence-based warm-ups targeting lower limb injury prevention.”***

Preventing ACL injuries, turning research into practice and avoiding media ambush. Br J Sports Med October 2008 42(10):483-484.

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