

## Female athletes at risk

Young female athletes – particularly soccer, volleyball and basketball players – are more likely to injure the anterior cruciate ligament (ACL) of the knee than males in the same sports and at the same level of play. The ACL is the main stabilizing ligament of the knee. Female ACL injuries are primarily non-contact, unexpected injuries. The ligament can tear if an athlete stops, turns or lands from a jump in an awkward position or with poor balance and control.

Several factors put females at risk for ACL injuries, including alignment, ACL structure, estrogen effects, playing surfaces, muscular imbalances, jump mechanics and conditioning. Some of these risk factors can be reduced through education and training. In fact, research has shown that the incidence of ACL injuries in female athletes can be lowered by as much as eighty percent with proper training.

CHKD's **Strong Girls** program helps prevent ACL injuries with strengthening techniques, core stabilization exercises, jump training, stretching, balance and coordination training. Classes and clinics led by physical therapists, exercise specialists and athletic trainers focus on proper jumping, landing and cutting techniques.

### SPORTS MEDICINE LOCATIONS

#### *Norfolk*

Children's Hospital of The King's Daughters  
601 Children's Lane  
and  
CHKD Health Center at Kempsville  
171 Kempsville Road, Building A

#### *Chesapeake*

CHKD Health Center at Oakbrooke  
500 Discovery Drive, Suite 202

#### *Hampton*

CHKD Health Center at Butler Farm  
421 Butler Farm Road

#### *Newport News*

CHKD Health and Surgery Center at Oyster Point  
11783 Rock Landing Drive

#### *Virginia Beach*

CHKD Health and Surgery Center at Princess Anne  
2021 Concert Drive



Children's Hospital  
of The King's Daughters

Sports Medicine

*Training and Treatment for Young Athletes*

(757) 668-PLAY (7529)

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# Strong Girls

Training to improve performance  
and prevent ACL injury



Sports Medicine

# Strong Girls Program Options



## Strong Girls Clinic

One 1-hour class — Free

This clinic introduces ACL injury prevention strategies to parents, coaches and female athletes. Covered topics include: the anatomy and function of the ACL; risk factors for injury; training recommendations to reduce the risk of injury; dynamic and static stretching techniques; proper athletic stance and form for jumping; ideal mechanics of squatting, jumping and turning; key muscle groups to target during strength training and balance training. Participants will receive handouts summarizing injury prevention strategies. *This clinic may take place at the CHKD sports medicine gym or off-site.*

## Strong Girls Comprehensive Program

Classes twice a week for 6 weeks — \$150 per person with a group, \$300 per person individually

A comprehensive small-group or individual training program designed to give each participant instruction on evidence-based strategies for reducing the risk of ACL injury. Participation in a program like this has been shown to reduce the risk of an ACL tear by up to 80 percent. Sports medicine staff will introduce the anatomy of the knee and describe common risk factors for ACL injury. The instructor will lead the athlete in:

- dynamic stretching
- key muscle group strengthening
- progressive jump training and activities to improve balance and coordination
- core stabilization training
- drills to improve form and control with cutting, turning, and deceleration maneuvers and jump landings
- static stretching

Class will progress in difficulty and intensity, so we strongly recommend that athletes attend all sessions.

The instructors will perform pre- and post-training assessments to determine each athlete's level of improvement. A summary of results and recommendations for continued training is provided. *This program will take place at the CHKD sports medicine gym.*

## Strong Girls Team-Site Program I

Two 1-hour team clinics — \$150/team  
(up to 15 athletes; \$10 fee per additional athlete)

This series will introduce coaches, parents and female athletes to the structure and function of the ACL, risk factors for injury and injury prevention training strategies to incorporate into regular practice and game settings.

*Clinic Day 1:* Sports medicine staff will discuss and demonstrate:

- knee/ACL anatomy, structure and function
- risk factors for non-contact injury in female athletes
- mechanics of squatting, jumping, turning and cutting
- proper athletic stance; dynamic stretching principles; single limb balance drills; strengthening exercises for key muscle groups to support muscle balance; core stability and injury prevention

Athletes will demonstrate each activity, and staff will provide feedback on correct form and technique.

*Clinic Day 2:* Sports medicine staff will:

- introduce evidenced-based safe jumping program
- provide coaches/parents/athletes with the entire jump program for independent progression
- teach safe techniques for turning, cutting and decelerating
- assess jumps and landings and provide feedback

We will provide recommendations for a more comprehensive injury prevention program to those athletes demonstrating high risk for injury. *Team will provide location for this clinic.*

## Strong Girls Team-Site Program II

Team clinics once a week for 6 weeks — \$375/team  
(up to 15 athletes; \$20 fee per additional athlete)

Research shows that the most successful injury prevention programs are performed twice a week for a minimum of 6 weeks and incorporate the entire Hewett jump program progression. This on-site clinic provides one hour of ACL injury prevention teaching and training from CHKD's sports medicine staff and a sports-specific reinforced curriculum for the coach.

The sports medicine staff will introduce athletes to the anatomy, structure and function of the ACL and risk factors for non-contact injury. Athletes will learn the ideal mechanics of squatting, jumping, turning and cutting. Each weekly 1-hour supervised session will include dynamic warm-up, strengthening techniques, activities to improve balance and coordination, core stabilization training and progression through an evidenced-based jump program.

The team coach will receive instructions for an additional 25-minute session to be performed each week. The entire program can be used at the beginning or end of a practice and may be split up according to specific needs.

Brief pre- and post-training assessments will be performed on each athlete. Each athlete will receive her results along with recommendations for continued training. *Team will provide location for this clinic.*

For more information about Strong Girls,  
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