Anterior Cruciate Ligament (ACL) Injury Prevention Program
at St. Charles Hospital

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There are an estimated 250,000 ACL injuries per year in the United States, with approximately 175,000 of those injuries needing surgery for reconstruction of the ACL. More than 50% of these injuries occur in athletes 15-20 years of age.

With ACL injury rates so common today, it is essential to have a defined strategy to reduce the high incidence of these injuries. We know there are certain risk factors that predispose athletes to these types of injuries. Some of these factors we cannot change including gender (females are higher risk than males), anatomical structure, and increased joint laxity.

However there are certain factors which we can change. These are known as neuromuscular factors, specifically each individual’s ability to combine strength and motor control particularly when they are in single leg support. For example, landing from a jump, pivoting to change direction, or stopping quickly from a sprint. An athlete will have increased susceptibility to injury if they are unable to control the torque and forces placed on the knee during these high-powered movements.

Our job as sports medicine specialists is to return athletes to the sports they loving following an injury. However, we feel it is even more important to prevent injuries from occurring. Athletes who are predisposed to ACL injuries can be identified and then given access to the tools that will help them avoid these injuries.

Please see one of St. Charles Rehabilitation’s eight outpatient rehabilitation locations on Long Island for your individualized injury screen and preventative program.
ACL Injury Prevention Program

Recommend performing 3x per week during off season, and include in practice warm ups during course of the sport season.

Section I: Warm–up
(Perform with cones placed 15-20 yards apart)

A  Jog Line to Line (cone to cone)
Elapsed Time: 30 seconds
Keep the hip/knee/ankle in straight alignment without the knee caving in or the feet whipping out to the side.
Instruction: Complete a slow jog from near to far sideline

B  Shuttle Run (side to side)
Elapsed Time: 30 seconds
Instruction: Start is an athletic stance with a slight bend at the knee. Leading with the right foot, sidestep pushing off with the left foot. When you drive off with the back leg, be sure the hip/knee/ankle are in a straight line. Discourage inward caving of the knee joint. Switch sides at half field.
**C Backward Running**  
Elapsed Time: 30 seconds  

**Instruction:** Run backwards from sideline to sideline. Land on your toes without extending the knee. Stay on your toes and keep the knees slightly bent at all times. Encourage landing on toes. Be sure to watch for locking of the knee joint.

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**Section II: Strengthening**

**A Walking Lunges**  
Elapsed Time: 1 min  

**Instruction:** Lunge forward leading with your right leg. Push off with your right leg and lunge forward with your left leg. Drop the back knee straight down. Make sure that you keep your front knee over your ankle but not in front of the toes. Control the motion and try to avoid your front knee from caving inward. If you can’t see your toes on your leading leg, you are doing the exercise incorrectly.

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**B Russian Hamstring**  
Elapsed Time: 1 min  

**Instruction:** Kneel on the ground with hands at your side. Have a partner hold firmly at your ankles. With a straight back, lean forward leading with your hips. Your knee, hip and shoulder should be in a straight line as you lean toward the ground. Do not bend at the waist.

(Continues on next page.)
Control is everything! Only lean up until the point where you can return to starting position, no further. You should feel the hamstrings in the back of your thigh working. Repeat the exercise for 30 seconds and switch with your partner.

**Body weight squat**

*Elapsed Time: 1 minute*

**Instruction:** Stand up with your arms at your side. Perform controlled squat by bringing buttocks towards the floor, as if you were going to a sitting position. Your back should be maintained straight with core muscles turned on/activated.

When squatting down important emphasis is on knees staying shoulder width apart (not caving inward), and not translating forward in front of toes.

When coming up from squat, stand tall and drive hips forward, by contracting quadriceps and gluteal muscles simultaneously.

**Section III: Plyometrics**

These exercises are explosive and help to build, power, strength and speed. The most important element when considering technique is the landing. It must be soft! When you land from a jump, you want to softly accept your weight on the balls of your feet slowly rolling back to the heel with a bent knee and a bent hip.

Begin these exercises using a cone or other small obstacle. If no cone is available you may use the end lines on the field.

**Lateral Hops over Cone**

*Elapsed Time: 30 seconds*

**Instruction:** Stand with a 2” cone to your right. Perform 2-legged Hop to the right over the cone softly landing on the balls of your feet in a bent knee position. Repeat this exercise hopping to the left. Progress to single leg hops following the first week of the program.
**B Forward/Backward Hops Over Cone**  
*Elapsed time: 30 seconds*

**Instruction:** Hop forward over the cone softly landing on the balls of your feet and bending at the knee. Now, hop backwards over the cone using the same landing technique. Be careful not to snap your knee back. You want to maintain a slight bend to the knee. Progress to single leg hops following the first week of the program.

**C Lateral Single Leg Hops Over Cone - after week one of program**  
*Elapsed Time: 30 seconds*

**Instruction:** Stand on right leg and hop sideways over cone landing on the ball of your foot, bending at the knee. Now, hop backwards over the ball using the same landing technique. Be careful not to snap your knee back to straighten it. You want to maintain a slight bend to the knee. Now stand on the left leg and repeat the exercise. Increase the number of repetitions as needed.
D  **Vertical Jumps**  
Elapsed Time: *Elapsed Time: 30 seconds*

**Instruction:** Stand with hands at your side. Bend the knees and push off jumping straight up as high as you can. Remember the proper landing technique; accept the weight on the balls of your feet landing with your knees bent. Repeat for 30 seconds.

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E  **Squat Jump/Tuck Jump**  
Elapsed Time: *30 seconds*

**Instruction:** Stand with hands at your side. Bend the knees and push off jumping straight up and bring your knees up to chest height. Remember the proper landing technique; accept the weight on the ball of your feet landing with your knees bent.
Section IV: Agilities

**A** Forward run with 3 step deceleration
Elapsed Time: 1 Minute

**Instruction:** Starting at the first cone, sprint forward to the second cone. As you approach the cone, use a 3 step quick stop to decelerate. Continue on to cone 2 using the same strategy to deceleration. Do not let your knee extend over your toe and cave inward upon deceleration.

**B** Lateral Diagonal runs
Elapsed Time: 1 minute

**Instruction:** Face forward and diagonally run to the first cone on the right. Pivot off the right foot and diagonally to the second cone. Now pivot off the left leg and continue onto the third cone. Make sure that the outside leg does not cave in, avoiding the knocked-knee position.
C Bounding run  
Elapsed Time: 1 minute

**Instruction:** Starting on the near sideline, run to the far side with knees up toward chest in a leaping pattern. Bring your knees up high. Land on the ball of your foot with a slight bend at the knee and a straight hip.

Following the 4 Part section, a full lower quarter stretch should be performed by each participant.

This program was adapted from the Santa Monica Sports Medicine Research Foundation Prevent Injury and Performance Enhancement (PEP) Program, and the FIFA 11+ program.
The Sports Medicine Program at St. Charles Hospital provides student athletes, professional athletes, weekend warriors and recreational athletes with an unparalleled continuum of care for injuries sustained during sport. The program encompasses St. Charles Hospital’s renown rehabilitation network, nationally recognized physicians, the ThinkSmart!™ Concussion Management Program, and state of the art diagnostic imaging services.

The team of expert physical therapists works closely with the physicians, athletic trainers and other members of the clinical team to meet the individual needs of each athlete and ensure a safe return to sport following injury. As key members of the Sports Medicine Program, St. Charles physical therapists possess specialty training, knowledge and experience in the rehabilitation and prevention of sports injuries. They work with athletes to understand their practice demands, sports requirements, and long term goals.

In addition, injury screens are available at all locations for athletes that have a potential injury or concern that they would like assessed. To schedule an injury screen contact the location that is most convenient for you.

For more information regarding the Sports Medicine Program please contact Laura Beck, Director of Outpatient Rehabilitation, (631) 476-5606 or email to laura.beck@chsli.org.
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Do you have a question about our services?
Do you need to secure an appointment with a specialist at St. Charles Sports Medicine?
Contact Ray Nelson, Sports Medicine Outreach Coordinator, at (631) 806-9205