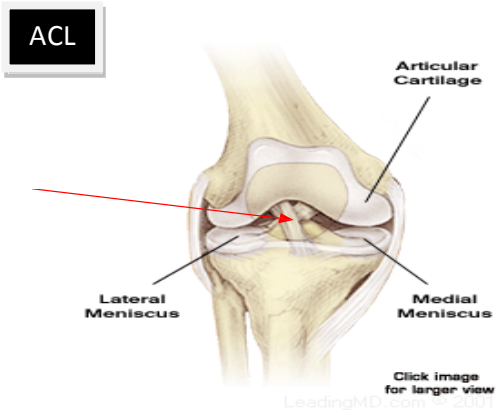
ACUTE ANTERIOR CRUCIATE LIGAMENT (ACL) TEAR

The anterior cruciate ligament is one of two ligaments inside the knee joint. The ACL prevents the tibia from sliding too far forward underneath the femur. It also helps prevent hyperextending and over-rotation of the femur on the tibia. An ACL injury usually occurs when the knee is sharply twisted or extended beyond its normal range of motion. The three grades of ACL injury range from mild to severe (Grade I-III).



♦ Signs and Symptoms of this Condition

- Pop or tear heard at the time of the injury (usually while cutting, jumping, or twisting)
- Large knee swelling (water on the knee) within hours after the injury
- Instability or giving way of the knee when pivoting or changing directions

♦ Causes

Sports and activities involving a lot of planting of the foot and cutting/quickly changing directions of running are commonly associated with ACL injuries. Soccer, basketball, skiing, and football are examples of sports in which a high number of ACL injuries occur. These sports require movements that cause the femur to pivot on the tibia.The ACL is also very susceptible to injury in contact sports.

♦ What Can I do to Prevent an ACL Tear?

- Maintain good hamstring and quadriceps strength
- Perform sport-specific neuromuscular training (balancing on one leg with eyes closed or while tossing ball at wall, single leg hopping in different directions [like hop-scotch])

♦ Prognosis

Is surgery always needed for an ACL tear?

Surgery is not required for all ACL injuries. Partial tears, in which a physical examination shows a relatively stable knee, may be treated with bracing and rehabilitation. Even some patients with complete ACL tears do not need reconstruction. These "copers" are typically older patients with lower physical activity, who do not participate in pivoting and cutting activities.

Why should the ACL be reconstructed?

One reason to reconstruct the ACL is to provide knee stability that allows for return to activities and sports. Another reason is to provide knee stability in order to prevent more injury, such as a meniscal tear, which may eventually lead to degenerative joint disease.

♦ Treatment

Y Initial Treatment
- **RICE** – Rest (crutches and staying off the extremity), Ice, Compression (with elastic bandage, and Elevation

Y Anti-inflammatory medication (aspirin, ibuprofen, etc) may be helpful in reducing both pain and inflammation

Y Rehabilitation involves eliminating the swelling, regaining full knee range of motion, regaining muscle strength (especially the hamstrings), regaining neuromuscular control of the knee through proprioceptive training exercises (exercises involving balancing on the injured extremity while providing different challenges to balance)

Quad Set: with a towel under your ankle, tighten up your quad and push your knee straight towards the floor. This will help regain full extension, strengthen the quad, and also help with swelling. Do 10 reps for a 5 second hold x 2 sets; three times a day.

Heels Slides: This exercise will help regain knee flexion and will also help reduce swelling within the knee. Start with the leg straight and slowly bend the knee until you feel a stretch or slight increase in pain. Hold the end range stretch for 10 seconds. Perform 10 reps x 2 sets; 3 times a day. You may also use a belt to assist with motion but do not be aggressive with the stretch.

Straight Leg Raise-ABDuction: This exercise will help maintain the strength of the outer hip. Outer hip strength is important for knee stabilization. Make sure your leg is in line with the rest of your body. Lift your leg up, hold for 3 seconds and slowly release to starting position. Repeat 10 times x 2 sets; 3 times a day.

Straight Leg Raise-Supine: This exercise will help maintain the strength of your leg while your injury is healing. Lift your leg up to the height of your bent knee (non-involved), hold for 3 seconds and slowly release to starting position. Repeat 10 times x 2 sets; 3 times a day.