

ACL Tears -- A Major Sports Medicine Injury **By R. Stephen Lucie, M.D.**

Each year in the NFL and the NBA, a big-time athlete is lost to a tear of the anterior cruciate ligament (ACL) of the knee. Not only is the athlete's season ruined, the team's championship hopes are often lost, as well. It has been said when God designed the ACL, he obviously was not thinking of the NFL or NBA. In the general public, occurrence of an ACL injury is about 50 per 100,000 people per year. Snow skiing is the most common sport for ACL tears with over 25,000 per year.

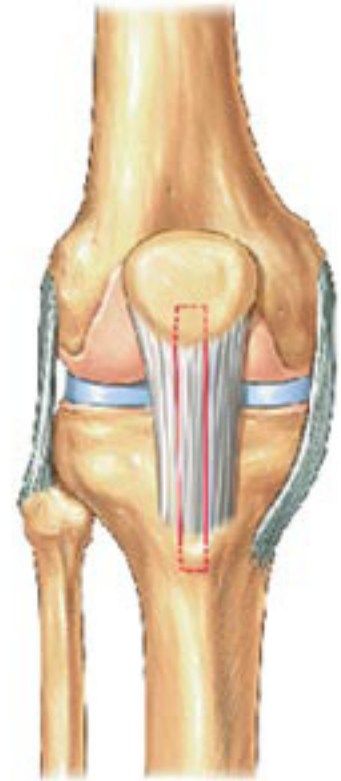
A torn ACL can be a very painful and debilitating injury which weakens and destabilizes the knee. This can be the worst news a sports medicine physician can bring to his coach or report to bring to his weekend warrior patient for his or her coach. Until about 15 years ago, a knee injury such as this often ended an athlete's career. Attempts at ACL reconstruction were often met with stiff or arthritic knees because the types of repair or reconstruction were not biomechanically sound. Basic research in sports



medicine has now led us to procedures that enable surgeons to reconstruct and make new ACLs which are as strong as the body's original ACL. Newer techniques and arthroscopic surgery have reduced the amount of trauma to the knee necessary for these types of procedures. In this country, the ACL is usually reconstructed using tissue from other parts of the body or the knee. The most popular ACL reconstruction performed today is using a strip of the patellar tendon, which is the tendon that connects the kneecap to the tibia or lower bone below. A 1 cm strip of this tendon with a small piece of bone from the kneecap and the lower tibia is harvested at the beginning of the procedure, and then, by placing drill holes in the exact location of the previous ACL, a new ACL is formed. The ACL can also be replaced with allograft or cadaver patellar tendon, which is harvested from organ donors, and frozen to be used at a later time. Reconstructions using

hamstring tendons are also popular in many areas of the United States.

Advances in the treatment of ACL injuries are not confined just to surgical treatment. In recent years, an increasing number of therapists and sports medicine physicians have adopted an accelerated form of ACL rehabilitation. This new ACL rehab features early weightbearing and knee extension. Following surgery, a hinged knee brace is usually worn, but the athlete is allowed to begin walking on the knee as soon as pain and swelling allows. This innovative approach is credited with dramatically decreasing the incidence of stiffness and a much earlier return to functional walking and working activities. The key to this accelerated program is regaining a full range of motion of the knee as soon as possible. Often, patients and players are able to fully extend and bend their knees to 90 degrees after the first week. As soon as pain allows, early weightbearing prevents wasting or atrophy of the leg muscles and a more functional performance of day-to-day activities. Once range of motion and normal function has been restored, then exercises that emphasize strength, power and endurance are begun. Often, patients may begin straight-line running by three months after their surgery, and usually agility-type exercises can be begun between five and nine months.



While many of these elite athletes and weekend warriors may be ready sooner to perform sports-specific activities, it is critical to the athlete and patient to understand that the "new" ligament is being remodeled by the body and does not reach its full strength until six months to a year. Sports-specific activities that involve running, jumping and cutting are very hazardous for this first six-month period. Often during this period of time, athletes will wear ACL braces to help protect the knee ACL graft as the athlete returns to normal play.

All athletes and patients are not created equal. The exact time to recover from this injury varies from person to person. Persons with limited mobility and some older individuals may not even need the surgery. Upon completion of a comprehensive ACL rehabilitation program, they may resume low-demand activities.

For those patients who do require surgery, the exact time to return to their specific sports may vary. Many therapists and physicians disagree about the exact length of time that ACL rehab encompasses. Many athletes find that their knee continues to require extra

rehab for over a year and that the knee continues to improve for up to two years after one of these complex surgeries. With early, prompt diagnosis, modern surgery and an aggressive rehab program, many people do return to their sport and enjoy an active lifestyle.



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