

The anterior cruciate ligament (ACL) is located in the center of the knee joint. It functions to stabilize the bones of the knee in cutting and pivoting types of activities. When the ACL is torn, the knee may be unstable during sports that require these types of movements, leading to a feeling that the knee will “give out”. This feeling may lead to significant restrictions in activity. Being that most young, active patients are unwilling to limit their activities, surgery may be necessary to reconstruct the ACL so that knee stability is reestablished, and the previous level of activity may be resumed.

Management of ACL Tears

ACL tears can occur after many different types of trauma. Most commonly, an abnormal twisting to the knee, because of contact with another athlete or with no contact, can tear the ACL. Some people will feel (or hear) a “pop” in their knee as the ligament tears. The knee almost always gets swollen and further competition is impossible. While crutches can sometimes help initially, most patients can bear weight a few days after the injury. The swelling will gradually diminish and range of motion will gradually return. However, a persistent feeling of something “wrong” in the knee can continue.

The initial evaluation by a sports medicine specialist will attempt to evaluate how badly the knee was injured. Usually x-rays are taken to evaluate for fracture and other related abnormalities. Further, many ACL injuries are combined with injuries to other structures within the knee, most commonly meniscus tears and collateral ligament injuries. A collateral ligament injury is suspected if there is significant pain over the collateral ligament with associated looseness. A brace is usually given to support the ligament as it heals. An MRI scan can help evaluate the extent of meniscal cartilage tears as well as the ACL and collateral ligament injuries.

Treatment of any ACL injury begins with the restoration of knee range of motion and removal of swelling. Sometimes physical therapy can help restore the range of motion faster. During this time, activities are limited to prevent further injury to the knee. Once the swelling is diminished and normal range of motion is restored, further treatment, either surgical or conservative, can be discussed.

Treatment Options

A torn ACL will not heal on its own. Therefore, the treatment goals of ACL injury focus on restoring knee stability so normal activities may be resumed without restriction. While some patients will not have significant problems associated with an ACL tear, others will have persistent knee instability. Persistent knee instability can cause even more damage to the knee, usually by causing meniscus tears and other cartilage injury. Historical data shows that meniscus tears can lead to early arthritis due to the loss of their protection to the underlying cartilage.

Bracing

A custom fit ACL brace may restore knee stability to the point that no surgery would be necessary. The brace would normally be worn when activities that involve pivoting and cutting are expected. The results of bracing are mixed with a fair amount of data noting that active patients many times are unhappy with the restrictions in their activity because of the brace. For patients who wish to avoid surgery this may be an acceptable option. However, if persistent knee instability exists, despite bracing, surgical reconstruction may be recommended.

Surgery

ACL reconstruction is recommended to restore knee stability in active patients. This procedure is performed through small incisions, arthroscopically, usually in an out-patient setting. The goals of the surgery are to remove the torn ACL and replace it with new tissue called a graft. There are many different graft types that fall into two categories: autografts, which are taken from the person having the surgery, and allografts, which are donated grafts from other people, and are obtained from tissue banks. There are advantages and disadvantages to each type of graft. This should be discussed with your surgeon prior to your surgery.

The surgery requires the removal of the torn ACL so that its anatomic attachment sites within the knee can be seen. Holes are then drilled in the tibia bone and the femur bone directly where the old ACL attached. The new graft is then pulled into the holes and held with screws or other types of fixation. Screws and other hardware are utilized to hold the graft in place while the bone heals to the tissue. Early, accelerated, rehabilitation is started to regain knee range of motion and strengthening. Return to full activity is expected in six to eight months following the surgery.

As with any invasive procedure, there are associated risks which should be discussed in detail with your surgeon. A few of the most worrisome complications associated with ACL surgery are infection, blood clots (deep venous thrombosis), and postoperative knee stiffness. The incidence of infection following this surgery is low and antibiotics are administered intravenously at the time of the surgery. Your surgeon will closely follow your healing course postoperatively to look for increased swelling, redness, or drainage from the incisions that could be a sign of infection. If an infection develops within the knee, further surgery might be required to eliminate the infection. Deep venous thrombosis (DVT) or blood clots can develop in the legs following knee surgery. Life threatening consequences can occur from such an event. The risk of a significant complication occurring from a blood clot after ACL surgery is small. Your surgeon will discuss with you current techniques involved in decreasing the risk of blood clots. However, you should communicate with your surgeon if you have a diagnosed blood clotting abnormality, or have had a blood clot in the past. Knee stiffness can be a significant problem following ACL reconstruction. Advanced rehabilitation techniques have decreased the incidence of this problem. Some individuals have a propensity to become stiff after ACL surgery. The importance of physical therapy postoperatively cannot be stressed enough. In the unfortunate event that the knee becomes stiff, further surgery may be warranted to try to increase the motion.

While many potential complications exist with any type of surgical intervention the above is presented to highlight some of the most common complications. A thorough discussion with your surgeon regarding the risks and benefits of any surgical procedure should be performed so that your consent to surgery is informed to your satisfaction.