

ACL Tears

The anterior cruciate ligament (ACL) is one of the four ligaments that connect the bones of the knee joint. The ACL crosses over the middle of the joint and is important for knee stability. It is the primary restraint that helps control movement of the lower leg bone (tibia) in relationship to the thigh bone (femur). In addition, it prevents abnormal turning of the lower leg bone.

ACL tears are quite common. 70,000 to 80,000 are reported each year in the United States. These injuries usually occur during athletic activity, particularly in sports with forceful cutting, pivoting, and jumping. While these injuries often occur without contact, a sudden impact to the knee may also result in a torn ACL. Patients often report hearing a “pop” at the moment that the tear occurs. Pain, swelling, and a feeling of instability in the knee may occur within the immediate period after the injury.

With a torn ACL, patients often experience a sudden sense of shifting or bucking of the knee particularly while trying to jump, accelerate, change directions, or pivot on the affected leg. These shift or “giving way” episodes can damage cartilage and joint surfaces in the knee—eventually leading to arthritis.

Diagnosis of ACL tears is made by a trained physician during careful physical examination. Often, an MRI is used to confirm the diagnosis and to look for additional injury.

Treatment of ACL tears may be operative or non-operative. In most instances during the immediate aftermath of the injury, the patient is advised to stay off the leg and elevate it, apply ice, and take medication, such as ibuprofen to reduce pain and inflammation. A course of physical therapy is prescribed to strengthen surrounding muscles, and a brace may be fitted for use during activities that would place special stress on the knee.

Some people with torn ACLs are treated without surgery and use strengthening exercises and activity modification to continue to lead an active lifestyle. With this treatment option, many people are often able to use most of the equipment found at the gym or health club, swim, jog straight ahead, and possibly ski up to an intermediate level. Cutting and pivoting sports such as basketball and soccer should be avoided in patients who have non-surgical treatment. Long-term outcome for patients who are treated non-surgically varies. Those who return to unrestricted activity are likely to experience some instability in the knee and have a greater risk of arthritis.

Surgical treatment of ACL tears is the best option for many active patients. The procedure requires the replacement of the ACL with a substitute graft of tissue in its place. Sources of graft tissue include the patient’s own patellar tendons, hamstring tendon, or an allograft (cadaver tissue). The use of an allograft may speed recovery, but some surgeons believe that the long-term results may be better with the patient’s own tissue. The type of graft used is determined on a case-by-case basis.

This reconstructive ACL surgery is usually performed with the assistance of arthroscopic instruments. A fiber optic camera is inserted through a small incision and helps guide the surgery. Often, a larger incision is needed to obtain tissue for the graft.

ACL surgery is generally scheduled between two and four-weeks after the injury. This allows time for the inflammation in the area to subside, which diminishes the risk of post-operative stiffness. The appropriate timing of surgery is based on the presence of other injuries (which may require more prompt attention), physical appearance of the knee, the patient’s level of pain, degree of range of motion, and the quality of muscle control.

Following surgery, the patient enters a rehabilitation program to restore strength, stability, and range of motion to the knee. The recovery from ACL surgery varies but usually requires six to nine months of rehabilitation prior to return to unrestricted sports activity.