

The Injured ACL

What is the ACL?

ACL stands for Anterior Cruciate Ligament of the knee. The knee is the largest and most complex joint in your body. It depends on four ligaments and other muscles and tendons to function properly. There are two ligaments on the sides of the knee: the medial collateral ligament (MCL) and the Lateral Collateral Ligament (LCL), and two crossed ligaments in the center of the knee, the Anterior Cruciate Ligament (ACL) and the Posterior Cruciate Ligament (PCL).

The ACL connects the front part of the shin bone to the back part of the thigh bone and keeps the thigh bone from sliding forward.

How is the ACL injured?

One of the common ways for the ACL to be injured is by a direct blow to the knee, which commonly happens in football or a fall when skiing. In this case, the knee is forced into an abnormal position that results in the tearing of one or more knee ligaments.

However, most ACL tears actually happen without contact between the knee and another object. Such non-contact injuries happen when the athlete is planting the foot and cutting, landing on a straight leg, or making an abrupt stop. These movements are common in basketball, football, volleyball, and soccer.

What are the signs of an ACL tear?

In many cases, when the ACL is torn, you will feel the knee give way with an audible “pop”. The injury is usually associated with a moderate amount of pain and continued activity is usually not possible. Over the next several hours, the knee becomes very swollen and walking becomes difficult. The swelling and pain usually are the worst for the first two days and then begin to subside.

How is an ACL tear diagnosed?

ACL tears usually cause enough discomfort to cause the injured person to seek medical attention. The physician will examine the knee, and in most cases, be able to identify which ligaments are injured. However, there may also be injuries to the joint surface that are more difficult to diagnose. In addition, swelling may sometimes make it difficult to diagnose a tear.

Will I need surgery?

The most frequently asked question after an ACL injury is, will I need surgery? The answer varies from person to person. Many factors must be considered by the patient and

the physician when determining the appropriate treatment. These factors include the activity level and expectations of the patient, whether there are associated injuries, and the amount of abnormal knee laxity, or looseness.

A young patient, who wants to return to competitive sports and has a knee that is very unstable on examination, is more likely to need surgery for a satisfactory outcome than an older patient, who wants to return to recreational jogging and has only mild laxity.

If surgery is not indicated, rehabilitation of the knee begins with exercises to help restore full range of motion. This is followed by strengthening exercises for the muscles around the knee. A return to sports with or without a brace is allowed only after leg strength, balance, and coordination have returned to near normal.

How are ACL tears treated surgically?

Many different surgical approaches have been tried for the ACL injured knee. Years of experience have shown that simply stitching the ligament together is rarely successful. Therefore, current techniques involve reconstructing the ACL by building a new ligament out of tissue harvested from one of the other tendons around the knee or from a cadaver. This tissue is passed through drill holes in the thigh bone and shin bone, and then anchored in place to create a new ACL. Over time, the new ACL regains its blood supply and cells and becomes a living ligament anchored to the bone on each end.

What happens after surgery?

Rehabilitation of the knee after ACL reconstruction requires time and hard work. Time off from work depends on the type of job, with people who work at desk jobs able to come back in one or two weeks, and construction workers usually not able to return to the job for six months. The same is true for athletes, with returning to golf occurring more rapidly than returning to football.

The overall success rate for ACL surgery is very good. Many studies have shown that over 90% of patients were able to return to sports and workplace activities without symptoms of knee instability. Although some patients do complain of stiffness and pain after surgery, these problems have been minimized by current surgical techniques and aggressive rehabilitation.