



The American Orthopaedic Society for Sports Medicine

## SPORTS TIP

# The Injured ACL

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### What is the ACL?

The ACL is the anterior cruciate ligament. The knee is the largest and most complex joint in your body. It depends on four primary ligaments as well as multiple muscles, tendons, and secondary ligaments 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 top part of the shin bone to the back bottom part of the thigh bone and keeps the shin 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. 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 noncontact injuries happen when the running athlete changes direction or hyperextends their knee when landing from a jump. These movements are common to all agility sports.

### 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

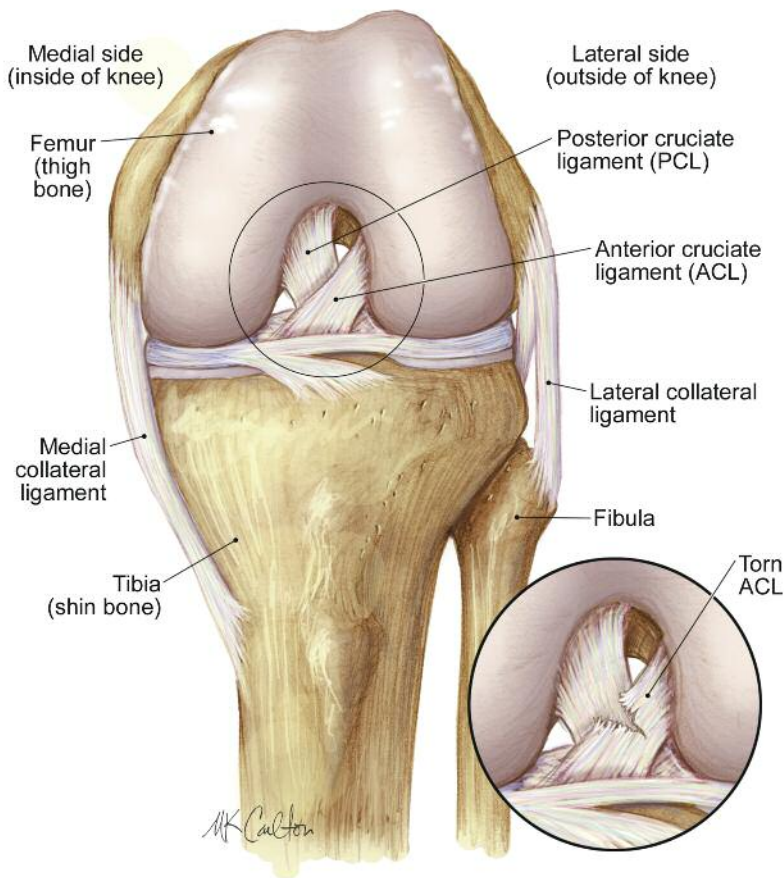
pain and continued activity is usually not possible. Over the next several hours, the knee becomes very swollen and walking becomes difficult. The swelling and pain usually increase over the first two days and then begin to gradually subside.

### How is an ACL tear diagnosed?

Discomfort after an ACL tear is usually severe enough that the injured person

will 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. At times, swelling may make it difficult to diagnose a tear. This will necessitate the use of an MRI scan or arthroscope to ensure that an accurate diagnosis is made.

Left knee bones in flexion (bent)





## The Injured ACL

### Will I need surgery?

The most frequent 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, the presence of associated injuries (cartilage tears, etc.) and the amount of abnormal knee laxity.

A young patient with an ACL tear and knee laxity who wants to return to competitive sports is more likely to require surgery for a satisfactory outcome. The older patient who can return to limited activity is less likely to require surgical stabilization.

In either scenario, 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. 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 developed 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 an

organ donor. 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 this graft matures and becomes a new, living ligament in your knee.

### What happens after surgery?

Rehabilitation of the knee after ACL reconstruction requires time and hard work. Time off from work varies depending on job type. Employees with desk jobs can return in one or two weeks, whereas construction workers usually are not able to return for approximately three to six months. The same is true for athletes. The rate of rehabilitation may take even longer, depending on the specific requirements of the individual's sport/activity and rate of recovery.

The overall success rate for ACL surgery is very good. Many studies have shown that over 90 percent of patients are 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.