



## The Injured Anterior Cruciate Ligament (ACL)

ACL stands for the anterior cruciate ligament of the knee. The knee is the largest and most complicated joint in the body and depends on four ligaments and several muscles and tendons to function properly. The medial collateral ligament and lateral collateral ligament are positioned on the inner and outer aspects of the knee and the two crossed ligaments in the center of the knee are the anterior cruciate ligament (ACL) and the posterior cruciate ligament (PCL). The ACL keeps the shin bone from sliding forward on the thigh bone.

### ACL Injury

A common way for the ACL to be injured is by a direct blow to the knee as in football or other contact sports. A fall when skiing, if the binding does not release, is also a common way in which the ACL is injured. One or more of the knee ligaments can be injured this way. Most commonly, however, ACL injury happens without contact when the foot is planted and the knee is twisted, usually inward, with the foot pointing outward. Sometimes it is caused by making an abrupt stop.

When the ACL is injured, the patient often feels the knee give way with an audible popping noise and sensation. This is associated with moderate pain. Over one or two hours the knee becomes very swollen and walking becomes increasingly difficult. The swelling and pain are usually worse over the first few days and then begin to subside. This can give the patient a false sense of security that the knee is improving, which it really is not.

### Diagnosis

A torn ACL usually causes enough discomfort and problem to the knee that the injured person seeks medical attention. The physician often can determine which ligaments are injured by physical examination of the knee. Plain x-rays of the injured knee are important as an aid in diagnosis to rule out other conditions that could also occur. Further evaluation of the knee is frequently done with an MRI x-ray study. Arthroscopic surgery may be necessary to evaluate the injury to fully determine the state of the injury.

### Need for surgery

Whether a person will require surgery for an injured ACL depends on many factors. It depends on the degree of injury to the ligament, on the activity level and expectations of the patient, whether there are associated injuries and the amount of abnormal knee looseness. A younger person who wants to return to competitive activities and has a very loose knee is more likely to require surgery than an older patient who wants to return to recreational activities and has only mild looseness or laxity as it is termed medically.

If surgery is not indicated, rehabilitation of the knee becomes extremely important.



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Sometimes return to activities is allowed with a brace after the period of rehabilitation.

A recent NCAA study concluded that female basketball players are up to 20 times more likely than male players to sustain an injury to the anterior cruciate ligament. Exactly why this is so has become a subject of great concern and investigation.

## Surgical Treatment

Many approaches have been tried for repairing the ACL injured knee. Trying to repair the ligament itself has rarely been successful. Current techniques involve reconstructing the ACL by building a new ligament out of tissue from one of the other tendons around the knee. This tissue is passed through tunnels drilled in the thigh and shin bone and then anchored in place to create a new ACL, which over time regains blood supply and cells to become a living ligament anchored to the bone on either end. The patient often is hospitalized overnight after the procedure. Three to six months of rehabilitation are required as a rule for a good outcome of the procedure.



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**Please consult Dr. Haverbush or a physician for specific treatment recommendations.**

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