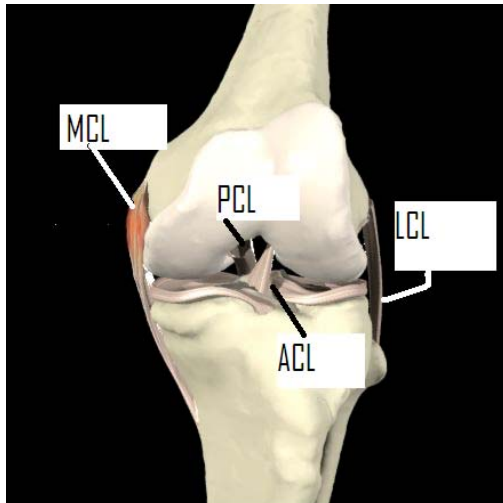


## KNEE LIGAMENT INJURIES

### Anatomy

The knee joint consists of the thigh bone (femur), leg bone (tibia) and the knee cap (patella). The smaller bone on the outer part of the leg is called the fibula. There are four major ligaments that hold the femur, tibia & fibula together: two cruciate ligaments and two collateral ligaments.



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The MCL is the most common knee ligament injured. Injuries to the MCL are usually caused by contact on the outside of the knee and are accompanied by sharp pain on the inside of the knee. The majority of MCL injuries can be treated with rest, ice, bracing and a well directed rehabilitation program. Surgery is rarely required for the MCL. The LCL is rarely injured and injuries to it usually occur in conjunction with other more severe injuries that most often require surgery.

### Collateral ligaments

The medial collateral ligament (MCL) connects the femur to the tibia on the inner part of the knee. The lateral collateral ligament (LCL) connects the femur to the fibula on the outer part of the knee.

### Collateral ligament injuries

### Cruciate ligaments

The cruciate ligaments are located in the “middle” of the knee joint and connect the femur to the tibia. The word cruciate is derived from a word meaning “cross” and thus the two cruciate ligaments cross each other. The one in the front is the anterior cruciate ligament (ACL), and the one in the back of the knee is the posterior cruciate ligament (PCL).

### ACL injuries

The ACL is the most common knee ligament injury that requires surgery. The ligament is usually injured during a sudden change of direction while running (cutting), sudden deceleration, hyperextension or direct contact (football tackle). In many cases a seemingly minor injury can result in an ACL tear.

## **Recognizing an ACL injury**

If you injure your ACL, you may not feel any pain immediately. However, you might hear a pop and feel your knee give out from under you. Within 2 to 12 hours, the knee will swell, and you will feel pain when you try to stand. Apply ice to control swelling and elevate your knee until you can see an orthopaedic surgeon that specializes in knee ligament injuries.

If you walk or run on an injured ACL, you can damage the cushioning cartilage in the knee. For example, you may plant the foot and turn the body to pivot, only to have the tibia stay in place as the femur above it moves with the body.

## **Diagnosing an ACL injury**

A diagnosis of ACL injury is based on a thorough physical examination of the knee. The exam may include several tests to see if the knee stays in the proper position when pressure is applied from different directions. Your orthopaedist may order an X-ray and MRI (magnetic resonance imaging). Most injuries are diagnosed with the examination of a well trained and experienced orthopedic knee ligament specialist. An MRI however is sometimes order to evaluate other structures within the knee.

## **Treating ACL tears**

In general when the ACL tears it does not have the capacity to heal itself. When determining the best treatment option several factors have to be considered including: 1) Patient activity level, 2) Other simultaneous injuries, 3) Occupation, and 4) Degree of knee instability. “Active” patients and manual laborers with a loose knee are going to be most satisfied with surgical reconstruction of their ACL. Also, patients that simultaneously injure other major ligaments or cartilage will often require surgery. Sedentary patients with an isolated injury of the ACL can try nonoperative treatment. If they have episodes of recurrent giving-way (instability) then surgery may be required to prevent further damage to the knee.

## **PCL injuries**

Posterior cruciate ligament, or PCL, injuries disrupt knee joint stability because the tibia can sag backwards. The ends of the femur and tibia rub directly against each other, causing wear and tear of the smooth articular cartilage. This abrasion may lead to arthritis in the knee. PCL injuries are much less common than ACL injuries.

## **Treating PCL injuries**

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Patients with PCL tears often do not have symptoms of instability in their knees, so surgery is not always needed. Many athletes return to activity without significant impairment after completing a prescribed rehabilitation program. However, if the PCL injury pulls a piece of bone out of the top of the shinbone, surgery is needed to reattach the ligament.

### **Dr. Goradia Expertise**

Dr. Goradia is fellowship trained in Sports Medicine, Arthroscopy, Knee & Shoulder Reconstructive Surgery and has performed surgery on over 500 ACL tears. Dr. Goradia has given numerous lectures and has published many articles in sports medicine journals on knee ligament injuries. He teaches knee surgery to orthopedic surgeons regularly at national medical conferences. For more information about knee ligaments or Dr. Goradia's credentials visit [www.goOrtho.net](http://www.goOrtho.net).

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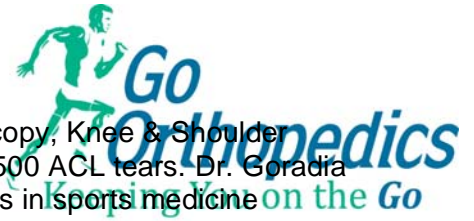
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