

# COMBINED KNEE LIGAMENT SPRAIN



## ■ ■ ■ Description

A combined knee ligament sprain is a sprain (tear) of multiple (two or more of the four) major ligaments of the knee. The four knee ligaments are the anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), medial collateral ligament (MCL), and lateral collateral ligament (LCL). Ligaments are structures that help keep the normal relationship of the femur (thigh bone) and the tibia (leg bone). They allow motion up to certain extremes; any motion beyond these extremes result in ligament strain. Injury to multiple ligaments results in difficulty in performing sports and often even with day-to-day living. Injury to the ACL and MCL is the most common combined knee ligament injury.

## ■ ■ ■ Common Signs and Symptoms

- One or more pops heard or felt at the time of injury
- Inability to continue after the injury; knee swelling noticed within 6 hours after the injury
- Possibly, deformity of the knee
- Inability to straighten knee
- Knee gives way or buckles; often, swelling with repeated giving way
- Occasionally, locking when there is concurrent injury to the meniscus cartilage
- Rarely, injury to nerves (numbness, weakness, paralysis) or discoloration or coldness (due to artery injury) of the foot and ankle

## ■ ■ ■ Causes

Combined knee ligament sprains are caused by a force that exceeds the strength of the ligaments. Usually this is the result of a severe injury, although it may be caused by a noncontact injury (such as stepping in a hole in the ground, hyperextending the knee, and twisting it).

## ■ ■ ■ Risk Increases With

- Sports that require pivoting, jumping, cutting, or changing direction (basketball, gymnastics, soccer, volleyball) or contact sports (football, rugby); sports on uneven terrain (cross-country running, soccer)
- Poor physical conditioning (strength and flexibility)
- Improper equipment

## ■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice and competition.
- Maintain appropriate conditioning:
  - Thigh, leg, and knee flexibility
  - Muscle strength and endurance
- Use proper technique.
- Wear proper equipment (such as the correct length of cleats for surface).

## ■ ■ ■ Expected Outcome

Usually, giving way and recurrent injury to the knee with sports and often even with daily activities can be expected. Injury to the arteries or nerves have a higher risk of poor outcome. Often surgery is required for knee stability.

## ■ ■ ■ Possible Complications

- Frequent recurrence of symptoms, such as knee giving way, instability, and swelling
- Injury to the meniscal cartilage, resulting in locking and swelling of the knee
- Injury to articular cartilage and bone, resulting in arthritis of the knee
- Injury to other ligaments of the knee
- Knee stiffness (loss of knee motion)
- Permanent injury to nerves (numbness, weakness, paralysis) or arteries
- Amputation of the leg due to nerve or artery injury

## ■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling. Walking with crutches is often recommended. Bracing or casting may also be prescribed initially. Rehabilitation of these injuries usually concentrates on reducing knee swelling, regaining knee range of motion, regaining muscle control and strength, receiving functional training, getting fitted for a brace (often), and education, such as avoiding sports that require pivoting, cutting, changing direction, and jumping and landing. Properly timed surgical repair or reconstruction (replacement) of all or some ligaments, in the hands of an experienced orthopaedic surgeon, offers the best chance for an optimal result. For combined ACL–MCL injuries, ACL reconstruction usually allows for adequate MCL healing. Nonetheless, some athletes may never return to sports with these injuries, although often this depends on the associated injuries and the demands of the sport.

## ■ ■ ■ Medication

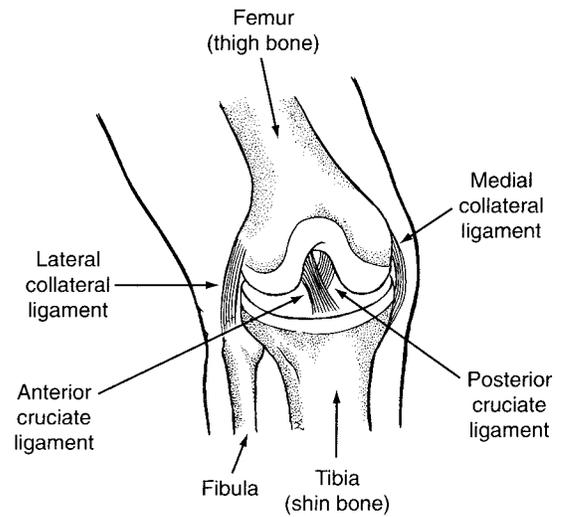
- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Stronger pain relievers may be prescribed as necessary by your physician. Use only as directed.

## ■ ■ ■ Cold Therapy

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain. Use ice packs or an ice massage.

**■ ■ ■ Notify Our Office If**

- Symptoms get worse or do not improve in 6 weeks despite treatment
- After injury or surgery, any of the following occur:
  - Pain, numbness, coldness, or a blue, gray, or dusky color in the foot or toenails
  - Increased pain, swelling, redness, drainage, or bleeding in the surgical area
  - Signs of infection (headache, muscle aches, dizziness, or a general ill feeling with fever)
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

**Figure 1**

From Economou SG, Economou TS: Instructions for Surgery Patients. Philadelphia, WB Saunders, 1998, p. 377.

Notes:

(Up to 4400 characters only)

Notes and suggestions