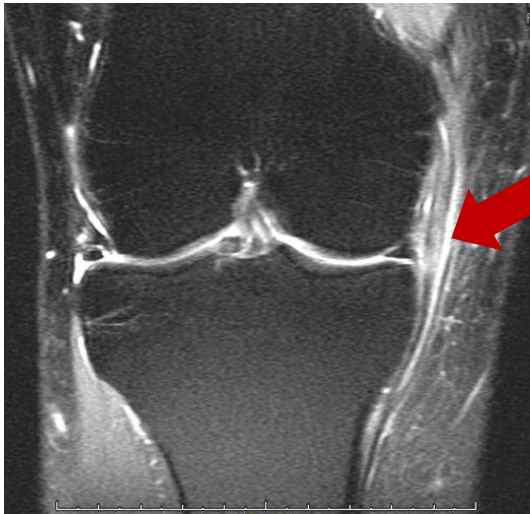


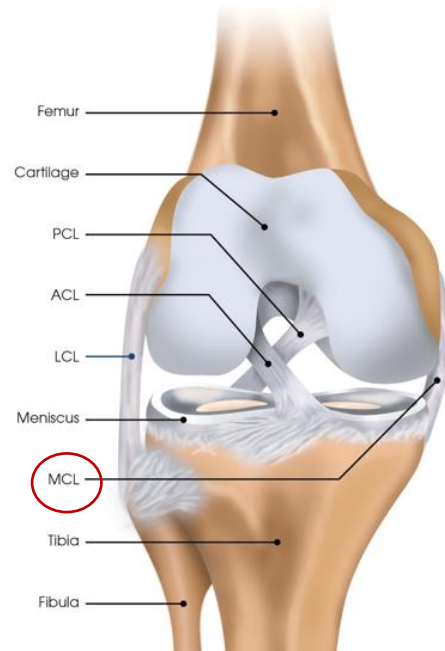
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Medial Collateral Ligament Sprain

The medial collateral ligament sprain is a tear to one of the four major stabilizing ligaments of the knee. The medial collateral ligament (MCL) is a structure that helps keep the normal relationship of the femur (thigh bone) and the tibia (leg bone) along the inner side of the knee. The MCL prevents the knee from buckling inward and is the ligament most commonly injured in sports. When torn, this ligament usually heals, although it may heal in a lengthened position (slightly loose). Sprains are classified into three grades. In a *first-degree* sprain the ligament is not lengthened but is painful. With a *second-degree* sprain, the ligament is stretched but still functions. With a *third-degree* sprain, the ligament is completely torn and does not function.



MRI image of injured MCL. Note the bright fluid that indicates swelling and injury



Frequent Signs and Symptoms

- Pain and tenderness on the inner side of the knee
- A popping, tearing, or pulling sensation noted at the time of injury
- Swelling and bruising (after 24 hours) at the site of injury
- With lesser degrees of injury, may continue to play
- Knee stiffness
- Limping, often walking with bent knees



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Etiology (Causes)

MCL sprains are caused by force that exceeds the strength of the ligament. Most commonly this injury is the result of a direct blow to the outer side of the knee, usually while the foot is on the ground. This injury may also be a result of a non-contact injury.

Risk Factors

- Contact sports (football, rugby) and sports that require pivoting and cutting (sudden change of direction), such as soccer and baseball
- Poor physical conditioning (strength and flexibility)
- Improper equipment

Prevention

- Appropriately warm up and stretch before practice and competition.
- Maintain appropriate conditioning:
 - Thigh, leg, and knee flexibility
 - Muscle strength and endurance
 - Cardiovascular fitness
- Wear proper protective equipment (such as the correct length of cleats for surface).
- Functional braces may be effective in preventing injury, especially re-injury.

Outcomes

When an isolated injury, the MCL usually heals on its own with physical therapy and avoiding aggravating activities. Rarely, isolated severe MCL injuries require surgery.

Potential Complications

- Frequent recurrence of symptoms, such as knee giving way, instability, and swelling
- Injury to meniscal cartilage, resulting in locking and swelling of the knee
- Injury to articular cartilage, possibly resulting in knee arthritis
- Injury to other ligaments of the knee
- Knee stiffness

Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the knee. Walking with crutches until you walk without a limp is often recommended (you may put full weight on the injured leg). Your physician may recommend a knee brace with a hinge to protect the MCL while working to regain knee motion. Range-of-motion, stretching, and strengthening exercises may be carried out at home, although referral to a physical therapist or athletic trainer is usually recommended. Rehabilitation of MCL sprains generally concentrates



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on reducing knee swelling, regaining knee range of motion, regaining muscle control and strength, and a short period of bracing. For severe MCL sprains or those associated with other knee ligament injuries, surgery may be recommended.

Possible Medications

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

Modalities (Heat and Cold)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

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