MCL Ligament Injuries

Knee Anatomy
Ligaments are structures within the body that connect one bone to another. They are strong bands of tissue that add strength and give stability to a joint. The collateral ligaments in the knee connect the femur (thighbone) to the tibia (shinbone). They’re supposed to limit the side-to-side motion of the knee. But, when they get stretched too far, they can tear.

There are four ligaments in the knee. Two are called collateral ligaments and the other two are cruciate ligaments. The collateral ligaments, called the medial collateral ligament (MCL) and the lateral collateral ligament (LCL) are found on the sides of the knees. The MCL is also known as the tibial collateral ligament. This ligament helps the inner part of our knee to stay stable by connecting the femur to the tibia. The LCL, which connects the femur to the fibula, on the other side of the knee can also be torn, but it is less common than the MCL. The LCL is also called the fibular collateral ligament.

The two other ligaments, the cruciate ligaments, are crossed over the center of the knee. Often, with a tear of the MCL, the anterior cruciate ligament (ACL) may also be torn.

What is a Collateral Ligament Tear
The tear may occur in the middle of the ligament, or it may occur where the collateral ligament attaches to the bone, on either end. If the force is great enough other ligaments may also be torn. Ligament tears, referred to as ligament sprains, vary in severity from minor tears in a few fibers of ligament, to complete tears of entire ligaments and loss of the use of a joint. The severity of the tear determines what the injury is graded. When the knee is stressed, a grade I tear is present if the joint space opening is less than 5 millimeters. A grade II sprain is diagnosed if the space is between 5 and 10 millimeters and a grade III is diagnosed if the space is greater than 10 millimeters. A grade II tear is considered a partial tear and a grade III is considered a complete tear.

Causes of a Collateral Ligament Tear
The cause of an injury to the MCL is a blow to the outer side of the knee that pushes the knee inward. This is frequent in contact sports like football or hockey. The blow stretches and most often tears the ligament on the inner side of the knee. Another cause of collateral ligament injury is twisting of a joint in the knee and tearing its ligaments.

To help prevent injuries to collateral ligaments, physicians encourage warming up before participating in sports or exercising. Specifically, one should stretch the quadriceps (muscles in the front of the thigh) and
the hamstrings (muscles in the back of the thigh) and work on strengthening the leg muscles. One should also wear properly fitting shoes.

**Symptoms of a Collateral Ligament Tear**
As is often the case with sprains, the pain increases with the seriousness of the sprain.
- Swelling and/or stiffness of the knee
- Pain and tenderness over the ligament
- Instability of the knee when standing or attempting to walk
- May feel “locking” or “popping” of the knee
- May feel knee buckle sideways
- Bruising
- Decreased range of motion

**Treatments of a Collateral Ligament Tear**
X-rays often will show torn ligaments when the knee is stressed. Another test, a MRI, will let physicians look at the soft tissues around the knee to assess the collateral ligament tear and see if there might be other injuries as well.

Dr. Gudeman commonly examines the healthy knee first and then compares it to the injured knee. When diagnosing a collateral ligament injury, he puts pressure on the side of the knee to determine the degree of pain and looseness of the joint.

All MCL injuries are likely to heal so treatment is usually conservative. The average healing time for a grade I sprain is two weeks if the patient sticks to a program of resting, icing, using compression and elevating. A patient should ice for 20 to 30 minutes, three to four times per day for one week or until his or her symptoms are gone. Dr. Gudeman may prescribe anti-inflammatory medicine and may even order the patient to use crutches. Treatment for grade II and III sprains are similar to that for a grade I sprain, with the addition of a hinged brace and some weight bearing if the patient can tolerate the pain associated with it. With a grade III sprain, healing may take four to six weeks. He may recommend a rehabilitation program guided by a physical therapist or athletic trainer. Even for grade III strains, surgery is typically not recommended unless other injuries are present.

**Prognosis**
Long term instability of the knee following a collateral ligament injury is uncommon. However, chronic pain and a proneness to re-injuring the knee may occur.

Furthermore, depending on the severity of the injury and your activity level, you may need to wear a brace. In the case of a grade I or II collateral ligament tear, the brace will be worn for three to six weeks. A grade III tear may require longer recovery. Formal physical therapy or therapeutic exercises may be necessary before resuming full activity. Therapeutic exercises will include range of motion and strengthening. Surgery may be needed.

**Informative Websites**
www.saveyourknees.org
www.orthoinfo.org
www.sportsmed.org
www.aana.org

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Helping you achieve the optimal activity level for your lifestyle is my first priority.

- Scott Gudeman, MD

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