STANFORD
SCHOOL OF MEDICINE
Stanford University Medical Center

DEPARTMENT OF ORTHOPEDIC SURGERY
SPORTS MEDICINE
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COMBINED KNEE LIGAMENT SPRAINS

DESCRIPTION

This is a sprain (tear) of multiple (2 of the 4) major ligaments of the knee (see knee dislocations for injuries to 3 or all 4 main ligaments, see isolated). The four knee ligaments are the anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), medial collateral ligament (MCL) and lateral collateral ligament (LCL). Combined knee ligament injuries are injures to 2 or more ligaments in the knee. Ligaments are structures that help keep the normal relationship of the femur (thigh bone) and the tibia (leg bone). They allow motion until 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.

FREQUENT SIGNS AND SYMPTOMS

- One or more pops are usually heard or felt at the time of injury, an inability to continue after the injury, and knee swelling noticed within 6 hours after the injury. There may be a deformity of the knee
- Inability to straighten knee.
- Knee giving way or buckling,, often there is swelling with repeated giving way.
- Occasionally locking may exist 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

Force that exceeds the strength to the ligament. This injury usually is the result of a severe injury, though it may be a result of a non-contact injury (stepping in a hole in the ground hyperextending the knee and twisting).

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/flexibility)
- Improper equipment

EXPECTED OUTCOME

Usually giving way and recurrent injury to the knee with sports and often even with daily activities. Injury to the arteries and/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

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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, functional training, bracing (often) and education, such as avoiding sports that require pivoting, cutting, changing direction and jumping/landing. Properly timed surgical repair or reconstruction (replacement) of all or some of the ligaments in the hands of an experienced orthopaedic surgeon has the best chance for an optimal result. For ACL - MCL injuries, ACL reconstruction usually allows for adequate MCL healing. Nonetheless, some athletes may never return to sports with these injuries, though often this depends on the associated injuries and the demands of the sport.

MEDICATION

- Non-steroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take if surgery planned in 7 days or less), 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 allergic reaction occurs.
- 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 10-15 minutes every 2-3 hours for inflammation and pain. Use ice packs or 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:
    - You experience 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.

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