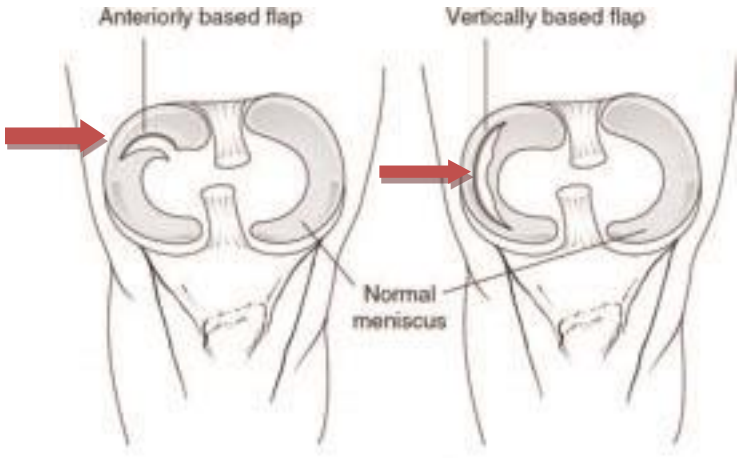
Meniscus Tear

The meniscus is a C-shaped fibrocartilaginous structure in the knee that sits on top of the leg bone (tibia). Each knee has two menisci, an inner and outer meniscus. The meniscus functions like an adapter between the rounded thighbone (femur) and flat tibia.



It also serves to help distribute the forces between the two bones over a greater area (rather than point to point), helps supply nutrition to the cartilage that lines the bones (articular cartilage), and helps stabilize the knee. The meniscus is rubbery tissue that loses its elasticity (suppleness) with age. Nonetheless, each individual meniscus can be torn. Meniscus tears are very common, occurring in up to one third of all sports injuries. The inner meniscus is injured most often.

Frequent Signs and Symptoms

- Pain, especially with standing on the affected leg and squatting, and tenderness along the joint of the knee
- Swelling of the affected knee, usually starting one to two days after the injury (may occur right after the injury)
- Locking or catching of the knee joint, causing an inability to straighten the knee completely
- Giving way or buckling of the knee

Etiology (Causes)

- Direct blow to the knee, twisting, pivoting, or cutting (rapidly changing direction while running), as well as kneeling or squatting
- Without injury, due to aging

Risk Factors

- Contact sports (football), sports in which cleats are used with pivoting (soccer) or sports in which good shoe grip and sudden change in direction are required (racquetball, basketball, squash)
- Previous knee injury
- Associated knee injury, particularly ligament injuries
- Poor physical conditioning (strength and flexibility)

Prevention

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Thigh, knee, and leg strength
  - Flexibility and endurance
- For jumping sports (basketball, volleyball) or contact sports, protect vulnerable joints with supportive devices, such as wrapped elastic bandages, tape, or braces (these have not been proven effective).
- Wear proper protective equipment and ensure correct fit, including proper cleats for the surface.

Outcomes

Some meniscal injuries can heal on their own, and some do not heal but may not cause any symptoms. However, the only definitive treatment for meniscal tears requires surgery. Surgery may provide complete healing in six weeks.

Potential Complications

- Frequent recurrence of symptoms, resulting in a chronic problem; appropriately addressing the problem decreases frequency of recurrence
- Repeated knee injury, particularly if sports are resumed too soon after injury or surgery
- Progression of the tear (the tear gets larger) if untreated
- Arthritis of the knee in later years (with removal of tear or without surgery)
- Complications of surgery, including infection, bleeding, injury to nerves (numbness, weakness, paralysis) continued pain, giving way, locking, nonhealing of meniscus (if repaired), need for further surgery, and knee stiffness (loss of motion)

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Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the affected joint. Sometimes walking with crutches until you walk without a limp is recommended (you may put full weight on the injured leg). Range-of-motion, stretching, and strengthening exercises may be carried out at home, although referral to a physical therapist or athletic trainer may be recommended. Occasionally your physician may recommend a brace or immobilizer or crutches to protect the joint. Surgery is often recommended as definitive treatment and is performed arthroscopically. Usually the tear is removed partly or completely, although in some instances it is possible to repair the cartilage (less than 20 percent of the time). After surgery or immobilization, stretching and strengthening of the injured, stiff, and weakened joint and surrounding muscles are necessary. These may be done with or without the assistance of a physical therapist or athletic trainer.

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.
- Pain relievers may be prescribed as necessary by your physician. 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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