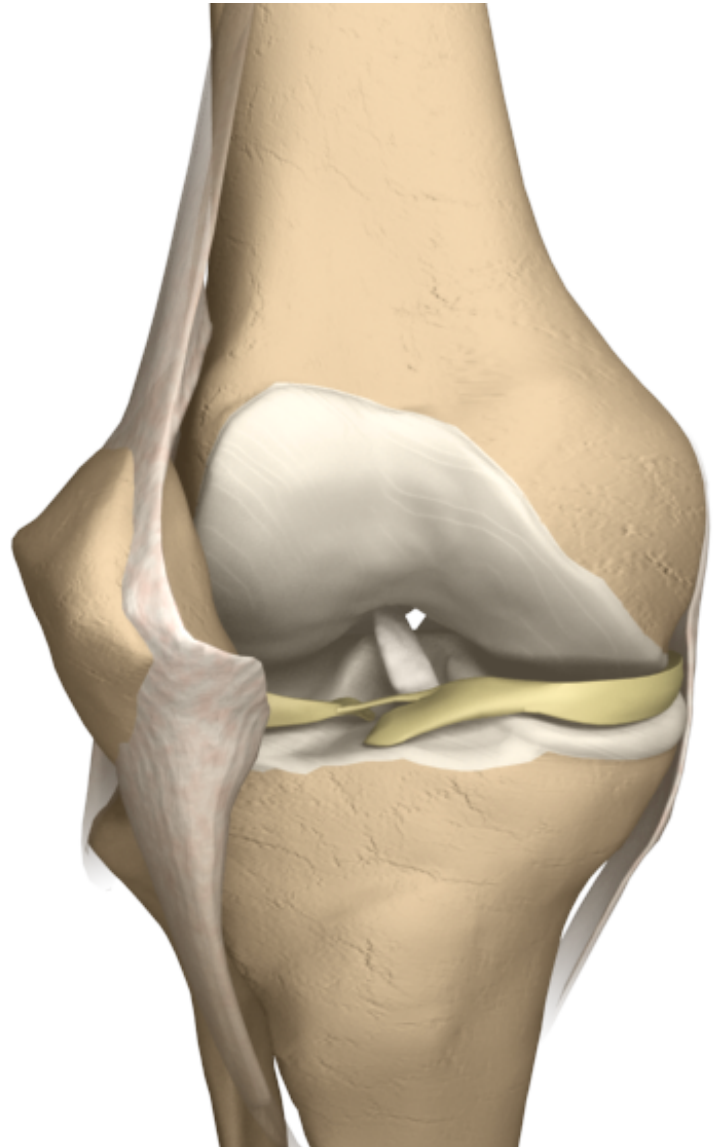


Meniscus Problems - Torn Meniscus Repair

The two crescent-shaped menisci in each knee absorb shock, disperse weight, and reduce friction when the knee moves. Activities such as walking or jumping transfer large amounts of force through the knee joints. Consequently meniscus damage is among the more common knee injuries. A torn meniscus generally results from forcefully twisting or pivoting the knee with the foot planted, such as occurs during certain sports. Tears can also result from repetitive kneeling or rising from a squatting position while lifting a load, or from wear over time as a normal consequence of aging. People usually notice pain when the tear initially occurs but are often still able to walk or continue their sporting activity; increasing pain, swelling, and stiffness typically follow the day after the injury. Other symptoms include pain with motion, instability, limited range of motion, and sometimes a popping or locking sensation if a piece of torn meniscus lodges elsewhere in the joint.

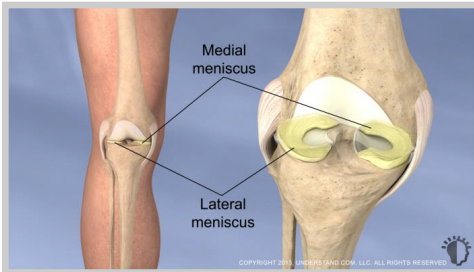


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Introduction

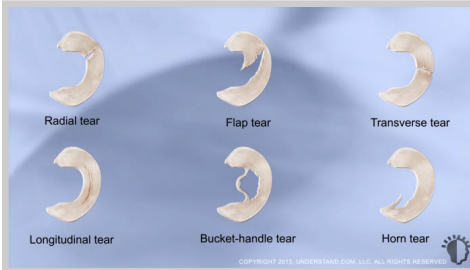
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Knee Anatomy

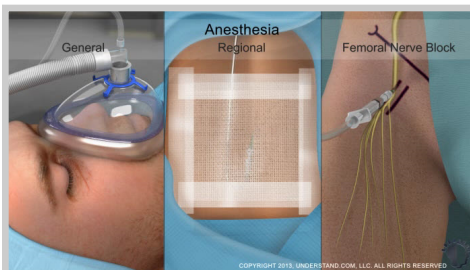
Two menisci, also known as semilunar cartilage, exist between the tibia and the femur in each knee. They are made of dense fibrocartilaginous material and function as shock absorbers that protect the articular cartilage from wear and tear. The medial meniscus is on the inside of your knee, nearest the opposite leg, and the lateral meniscus is on the outside. The upper surfaces of both menisci are concave and accommodate the femoral condyles, while the flatter lower surfaces sit atop the tibia. The thin inner margins of the menisci are free, whereas the thick outer surfaces are attached to the capsule that surrounds the joint.

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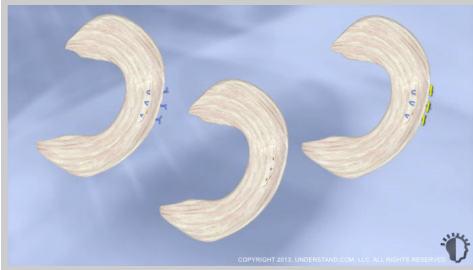
Meniscal Tears & Treatment Options

Meniscal tears occur in a variety of patterns and may worsen with time. For example, tears along the radius can progress to flap tears, while longitudinal tears can progress to bucket handle tears. Various other tear types exist and are classified by appearance and location. The ability of the meniscus to heal depends largely on whether the tear occurs in what is described as the red or white zone. The red zone exists along the outer margin where there is an adequate blood supply to promote healing. The white zone comprising the inner portion lacks a good blood supply and consequently does not heal well. Minor damage in the red zone may heal on its own after a period of rest, often in conjunction with ice, anti-inflammatories, and pain medications. Damage in the white zone does not heal well, even with surgical repair, and is usually treated by removing the damaged portion of the meniscus. Extensive damage may require removing the entire meniscus, sometimes followed by a meniscus transplant. When a meniscal tear occurs in an area with an adequate blood supply for healing, a surgical meniscal repair can be performed, as will be shown in this animation.



Torn Meniscus Repair Preparation

Prior to the meniscal repair procedure, you will be positioned on your back and may undergo general anesthesia, which is administered by intravenous injection or as a gas that puts you to sleep; regional anesthesia, in which a small tube called an epidural catheter delivers medication to the spinal column, numbing you from the waist down; or a femoral nerve block or local anesthetic that numbs the surgical region.



Procedure

Today, most meniscal repairs are done arthroscopically with a camera and small instruments that are inserted through tiny incisions, called portals, on each side of the knee below the patella. For some tear locations, additional portals may also be created. Once the joint is accessed, fluid is pumped into the knee to expand the joint space and improve visualization. The arthroscopic camera enables the surgeon to see a live view of the inside the knee on a video monitor, and the meniscus is probed to assess the tear type, location, and extent of damage.

A shaver may be used to clean up frayed edges along the tear and to stimulate the healing response. In other cases, a device called trephination needle may be used to create small holes in the meniscus, or the tear and a small portion of the joint lining (synovium) near the repair site may be scraped to stimulate blood flow and healing.

The torn edges of the meniscus are then rejoined using one of various repair methods. Some procedures are more suited to particular tear types and locations, but in general they involve using sutures or sutures and anchors to pull together the torn portions. The tear may also be repaired with special resorbable tacks or barbed fixation devices that dissolve after healing. The stability of the suture or fixation device repair is confirmed, and any remaining debris is removed or flushed from the joint before the instruments are removed. The portals are closed with sutures or surgical strips, a dressing is applied, and the knee is usually wrapped with a bandage to complete the procedure.



Recovery and Results

Meniscal repair procedures usually take thirty minutes to an hour, and most people are able to return home the day of their surgery. During the first days of recovery, you will be instructed to elevate the knee and apply cold packs for short periods to minimize swelling. Pain medication may be prescribed for a few days, but pain from the incisions is generally minimal and relief from knee pain often occurs quickly. You will walk with crutches for a few weeks, and physical therapy is usually recommended to help regain range of motion. You may be required to wear a brace and avoid bearing weight on your knee for four to six weeks. Recovery to the point where your knee functions and feels better often occurs within three to four months, but you may be advised to avoid running, jumping, or twisting from the knee for up to six months after the procedure. When recovery recommendations are followed, torn meniscus repair procedures have a high success rate and high degree of patient satisfaction.