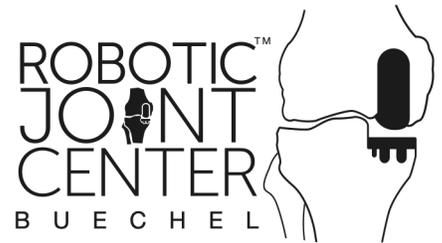


Frederick F. Buechel, Jr. MD

Robotic Joint Center

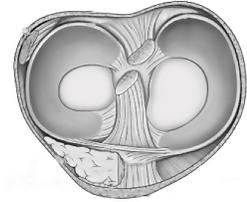
737 Park Avenue, Suite 1C
New York, New York 10021



MENISCUS INJURY AND TEARS: DIAGNOSIS AND TREATMENT

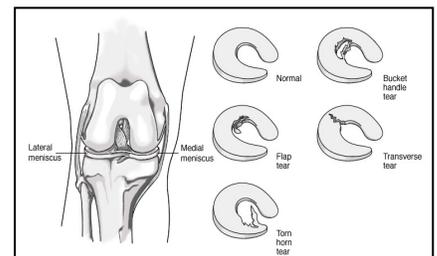
MENISCUS ANATOMY & FUNCTION

- **The meniscus** is a tough, smooth, rubbery C-shaped piece of cartilage (fibrocartilage) that is wedged shaped and sits between the cartilage surfaces of the bones
- It distributes your body weight more evenly across the knee joint and improves the stability of the joint.
- Each knee has two menisci, the medial (inside) and the lateral (outside). They attach to the top of the shin bone (tibia) and make contact with the thigh bone (femur).
- They act as shock absorbers during weight bearing activities.
- The wedged profile helps maintain the stability of the joint by keeping the rounded femur surface from sliding off the flat tibial surface.
- The meniscus is nourished by small blood vessels, but the meniscus also has a large area in the center of that has no direct blood supply (avascular).
 - This presents a problem when there is an injury to the meniscus as the avascular areas tend not to heal. Without the essential nutrients supplied by blood vessels, healing cannot take place.



MENISCAL TEARS

- The two most common causes of a meniscus tears are due to traumatic injury (often seen in athletes) and degenerative processes (seen in older patients who have more brittle cartilage) and can occur from simple activities.
- The most common mechanism of a traumatic meniscus tear occurs when the knee joint is bent, and the knee is then twisted.
- They can occur suddenly, from a single incident (such as a twisting injury)
- Can develop gradually, as the cumulative result of many small insults to the knee over the years.
- The loss of meniscal integrity to injury can lead to early degenerative arthritis of the knee.
- Meniscal tears generally do not heal. Therefore, treatment usually requires surgery.



SYMPTOMS

- Knee Pain
 - with twisting, squatting, rising and sitting
 - with pressure against your other knee when sleeping
- Knee Swelling
- Tenderness when pressing on the meniscus
- Popping or Clicking in the knee
- Limited Motion of the knee
- Torn cartilage fragments can catch in the knee, causing locking, catching, giving away or sharp pain.

DIAGNOSIS

- The diagnosis of a meniscal tear is usually determined by patient history & symptoms, along with a physical examination.
- X-rays and MRIs are the two tests commonly used in patients who have meniscus tears. An x-ray can be used to determine if there is evidence of degenerative or arthritic changes to the knee joint. The MRI is helpful at actually visualizing the meniscus. However, simply 'seeing' a torn meniscus on MRI does not mean a specific treatment is needed. Treatment of meniscus tears depends on several factors, as not all meniscus tears require surgery.

TREATMENT

• **Nonsurgical Treatment**

This may include a temporary knee brace and rehabilitation to keep the knee muscles strong while the knee is not bearing as much weight. This approach is most effective for small tears (5 millimeters or less) near the edge of the meniscus, where healing might occur, or for people who are not good candidates for surgery.

• **Surgical Treatment**

KNEE ARTHROSCOPY

- **KNEE ARTHROSCOPY** is a procedure in which the doctor examines your knee with an instrument called an arthroscope to diagnose or treat the cause of pain, swelling, tenderness, or weakness in your knee. An arthroscope is a tube with a camera and light at its end that projects an image of the inside of your knee on to a television monitor. The arthroscope is about the diameter of a pencil.
- The surgeon will put an arthroscope and one or two tools into the knee joint through small incisions (cuts). Fluid is injected into the knee to expand the joint so that the structures and cartilage can be seen. The surgeon will examine the knee to find any damage. He may repair torn cartilage, or shave down the cartilage in the knee, and/or remove pieces of cartilage. The arthroscope and tools are then removed, and the incisions are closed with stitches.

MENISECTOMY

- **An arthroscopic meniscectomy** is a procedure in which the surgeon uses an arthroscope and other tools to remove all or part of a damaged meniscus in the knee.
- **Partial Meniscectomy**
 - Surgery to remove part of the meniscus If the tear involves a part of the meniscus where healing is poor, the surgeon may trim away ragged edges along the tear to allow the joint to move smoothly.
 - The recovery after partial meniscus tear excision is typically 2 to 8 weeks.

MENISCAL REPAIR

- Surgery to repair the tear with stitches if the tear is in the vascularized zone and in the correct orientation. It can take 3 to 6 months for a repaired meniscus to heal.

CHONDROPLASTY

- **An arthroscopic chondroplasty** of the worn or damaged articular cartilage surfaces trims and smooths degenerated edges in arthritic knees while debris is removed with suction shaving devices.

SYNOVECTOMY

- **An arthroscopic synovectomy** is the removal of inflamed tissues on the inner lining of the knee joint that is abnormally growing from the tissues that are normally not irritated and inflamed. This can be done with small tools that are introduced into the knee joint and can trim and seal tissues.

ALTERNATIVES TO ARTHROSCOPIC MENISECTOMY:

- Reducing your physical activity
- Taking orally or injecting anti-inflammatories to reduce swelling
- Physical therapy
- Open knee surgery
- Choosing to have no treatment, while recognizing the risks of your condition

WHAT RISKS ARE ASSOCIATED WITH THIS PROCEDURE?

- There are risks associated with general anesthesia, discuss these with your anesthesiologist
- Local anesthesia may not numb the area quite enough, and you may feel some minor discomfort. In rare cases, you may have an allergic reaction to the drug used in this type of anesthesia.
- Local anesthesia is considered safer than general anesthesia in older people and for people that have certain medical conditions
- The blood vessels and nerves around the knee may be injured, causing numbness or weakness in the leg below the knee
- There is a risk of deep vein thrombosis, a condition in which a blood clot forms within a deep vein
- There is a risk of infection and bleeding
- Most pain, but not always all pain is removed from this procedure depending on individual joint conditions

WHAT IS THE PROCESS THE DAY OF THE PROCEDURE?

- Your surgery will be done as an outpatient unless other medical conditions require admission.
- You will come in before the procedure for your registration and check in.
- You will be given a general, regional, or local anesthetic. Which type depends on you, your anesthesiologist, and your surgeon.
- A general anesthetic will relax your muscles, and make you feel as if you are in a deep sleep.
- Both local and regional anesthetics numb part of your body while you may remain awake.
- All three types of anesthesia should keep you from feeling pain during the operation.