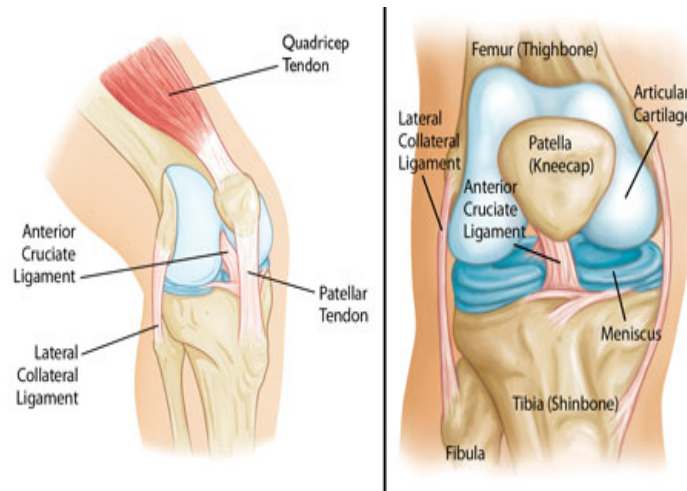


**SURGERY SPECIFIC INFORMATION**  
**Cartilage Surgeries: Microfracture, DeNovo, OATS, MACI**



**What indicates surgical intervention?**

These procedures are commonly used to treat patients who have full-thickness focal lesions of the articular cartilage in the knee - ie: the tear extends all the way down to the bone - in either weight-bearing areas between the thigh bone (femur) and the leg bone (tibia) or between the back of the kneecap (patella) and the groove that it slides in (trochlear groove).

**How will my cartilage be repaired?**

This depends on many factors including your age as well as the size and location of the cartilage defect. The surgeon will chose from one of the following procedures:

- Microfracture
  - o Procedure: Using arthroscopy, the surgeon will first remove any defective and damaged cartilage tissue from the knee joint. She will then create small holes at the site of your lesion to allow bleeding which will stimulate healing. The new tissue that grows is a hybrid of fibrocartilage and another type of cartilage that is similar to that originally in the joint. Although it is not exactly the same, this new type of cartilage is shown to be durable and to function similarly to the original articular cartilage.
- DeNovo
  - o Procedure: Using arthroscopy, the surgeon will first remove any defective and damaged cartilage tissue from the knee joint. She will then patch the cartilage defect with the DeNovo patch. This consists of baby cartilage which is able to rejuvenate and grow.
  - o You may require follow-up MRIs at 3 mo, 6 mo, 12 mo, and 24 mo after surgery.
- OCA (Osteochondral Allograft)
  - o Procedure: Using arthroscopy, the surgeon will first remove any defective and damaged cartilage tissue from the knee joint. She will then patch the cartilage defect with OATS plug, allograft donor cartilage. This does not rejuvenate, but is anchored into the bone. The body then grows into the new plug and it becomes your own.
- MACI (autologous cultured chondrocytes on porcine collagen membrane)
  - o Procedure: This is a staged surgery. Stage 1- Using arthroscopy, the surgeon will first remove any defective and damaged cartilage tissue from the knee joint. Healthy cartilage is biopsied and sent to a lab where the cartilage cells will proliferate. Stage 2- About 4-6 weeks later, the defect will be patched with your new cartilage cells.

### **Is this a cure for osteoarthritis (OA)?**

No. The above procedures are techniques to stimulate the formation of a new surface to cover only a focal defect in articular cartilage, while OA will affect a more generalized area of cartilage.

### **How long will I stay in the hospital?**

This surgery is done as ambulatory surgery, meaning you will go home the same day of surgery.

### **What are the possible risks and complications of surgery?**

As with any surgery there is a risk of DVT, nerve damage, and postoperative infection. Specific risks and complications include but aren't limited to re-injury, post-op stiffness, and arthritis.

### **Will I need to be on blood thinners after surgery?**

Depending on your risks for developing a blood clot (i.e. age, past medical history, family history, use of hormonal contraception, smoking status), you may be required to take low dose 81mg Aspirin daily for 6 weeks following the surgery to prevent blood clots.

### **When can I drive?**

You may not drive while taking pain medication. Additionally, if it is your right knee, you will not be able to drive for approximately 6 weeks after surgery after the brace is removed.

### **When can I resume jogging and more sport specific activities?**

You will not resume jogging until cleared by your physician. This typically is around 4-6 months after surgery, depending on quadriceps strength. You will be allowed to begin biking without resistance once you have adequate range of motion and will begin this with your physical therapist. Once adequate quad strength is demonstrated you will transition to the Elliptical, running is the next step, and then you may proceed to more sport specific activities.

### **How long until I see results?**

The repair process is gradual. It usually takes between 2-6 months to see noticeable improvement in the pain. Improvement is likely to continue for about 2-3 years.

### **What is the recovery period like?**

- Brace
  - o You will wear a long brace on your leg, known as a Bledsoe brace, and use crutches. You will wear it **day and night, locked straight for 6 weeks.**
    - May remove brace. But, it must be worn while sleeping or bearing any weight.
- Weight bearing precautions
  - o Immediately after surgery you will have crutches with the Bledsoe brace locked straight. **DO NOT BEAR ANY WEIGHT** on the surgical leg until the first post-op visit, day 7-14.
  - o After the first post-op visit, you'll be informed how much weight you can put on the leg.
- Continuous Passive Movement (CPM): 2 hrs/day x 6wks- *FOR DENOVO and MACI PROCEDURE*
  - o This device moves your leg for you to increase range of motion, and bathes the joint in rejuvenating synovial fluid. Remove your brace for this exercise.
    - Start 0-45 and increase to 0-60. You should be at 60° at your first post-op visit.
    - Continue to increase to 0-90, you should reach this by 6 weeks.
- Physical Therapy
  - o Prior to starting, and in addition to formal PT, do the following home exercises:
    - Quad sets : 3 sets performed three times a daily.
      - Sit or lie on your back with leg straight. Tighten your quadriceps muscle on the front of the thigh. Hold for 3 seconds, relax. Repeat x 10.
    - Heel pumps: 3 sets performed three times daily.
      - Sit or lie on your back with leg straight. Bend your foot up and down at your ankle joint, pumping the foot. Complete 10 pumps.
  - o You will **start formal PT as soon as you feel comfortable**, typically within the first week of surgery, just prior to your first post-op visit. You will go 2x/week for 3-6 months.
    - Dedication and attendance to your sessions are critical to your recovery.

## INSTRUCTIONS FOR IMMEDIATELY AFTER SURGERY:

- Activity
  - Apply ice to your knee but keep the bandages dry
  - Elevate your leg on 2-3 pillows or rolled up towels placed under the **heel** so that the heel is elevated higher than your knee. This will help reduce swelling and achieve full extension of the knee. **Avoid pillows under the knee.**
  - For the first 1-2 weeks after surgery, the **most important goal is to regain the ability to fully straighten the knee.** It is much more important initially than being able to bend the knee.
  - Follow the CPM and weight bearing precaution guidelines above.
  - Start your home exercise program
- Bandage and Incision Care
  - Under your brace is an ace wrap- leave this ace wrap on for the first 2-3 days. You may then remove the ace wrap. Underneath will be several waterproof bandaids. Keep these bandaids in place. However, if the bandaids become wet, dirty, or start to peel off, then replace with Nexcare waterproof bandaids. Under the bandaids is Dermabond, this is a surgical glue and tape that is used in conjunction with absorbable sutures to close the incision. Do not touch the Dermabond.
  - You may re-apply the ace wrap as this helps to decrease swelling.
  - Do not apply creams, ointment or lotions to your incisions for at least 3 weeks.
- Showering
  - You may shower after you have removed the ace wrap. Although the bandaids are waterproof, you should wrap the leg in saran wrap to provide an extra waterproof layer.
  - **Do not get the incision or brace wet**, however, you must wear the brace when standing. You should use a shower chair, or if you have a bathtub-shower, you can sit in the tub. If you take a bath, keep the leg out of the bath. The leg should not be submerged.
- Pain Management and Cold Therapy
  - See POST-OP PAIN MANAGEMENT handout. Around 2 weeks out, you should only be taking the pain medication at night and after strenuous activity as needed.
- Normal sensations after surgery
  - Pain
  - Swelling and warmth up to 2 weeks
  - Small amounts of bloody drainage for first few days
  - Numbness around the incision area
  - Bruising
  - Low grade temperature less than 101.0 for up to a week after surgery.
  - Small amount of redness to the area where the sutures insert in the skin
- **IF ANY OF THE FOLLOWING OCCUR, CONTACT THE OFFICE IMMEDIATELY**
  - Calf pain or ankle swelling in either leg
  - Change is noted to your incision (i.e. increased redness or drainage)
  - Temperature greater than 101.0
  - Fever, chills, nausea, vomiting or diarrhea
  - Sutures become loose or fall out and incision becomes open
  - Drainage becomes yellow, puss like or foul smelling
  - Increased pain unrelieved by medication or measures mentioned above.
- Post-op visit
  - Please ensure that you have a post-op visit scheduled for 7-14 days after surgery.