

Meniscus Root Repair: Post-surgical Recovery Process, Expectations, and Timelines

Joseph Lamplot, MD

Orthopaedic Sports Medicine and Shoulder Surgeon

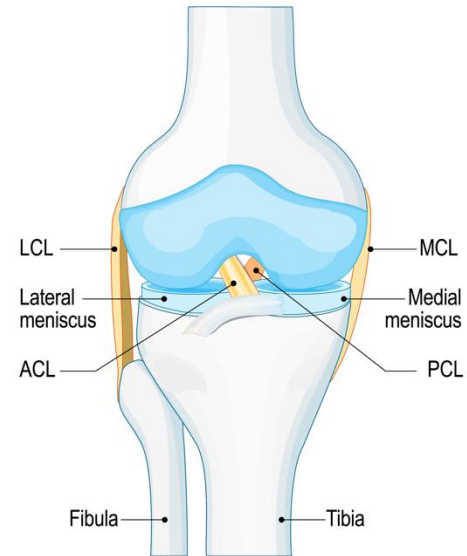
Team Physician – Chicago Fire FC

Director of Sports Medicine Research – Endeavor Orthopaedic & Spine Institute

What is the meniscus?

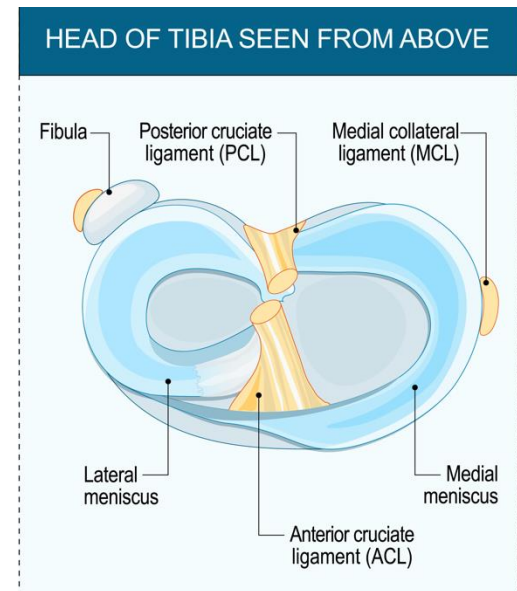
- **C-shaped rubbery cartilage disks that cushion knee joint**

- Medial (inside part of knee) is more commonly torn
- Lateral (outside part of knee) is less commonly torn



- **What does it do?**

- Acts as a shock absorber to transmit weight across knee joint
- *If torn, the torn portion is no longer functional unless repaired*



How do meniscus tears happen?

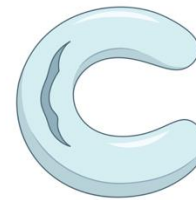
- **Acute/Traumatic**

- Generally, from a twisting, pivoting, or landing injury
- Can result in knee pain and swelling

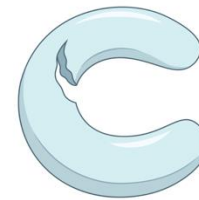
- **Degenerative**

- Due to a combination of age, wear and tear, and genetics without specific injury

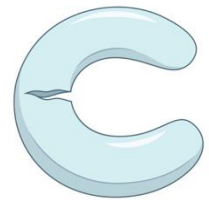
Types of Meniscus Tears



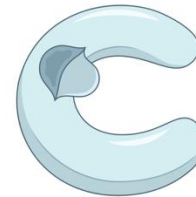
Longitudinal Tear



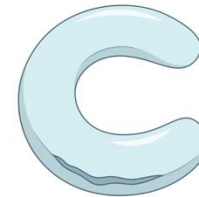
Parrot beak tear



Radial Tear



Flap Tear



Horizontal Tear



Bucket Handle Tear

Indications for Meniscus Surgery

- Repairable (stitchable) tear types
- Mechanical symptoms
 - “Stuck knee” – cannot fully straighten or bend
- Failure of non-surgical treatment
 - Oral and topical anti-inflammatory medicine (i.e. Aleve, Voltaren gel)
 - Physical therapy
 - Knee injections (cortisone)
 - No/minimal knee arthritis



Torn meniscus tissue being resected with metal biter visualized using camera (arthroscope)

Meniscus Roots

- What are they?
 - Attachments of the meniscus at the front and back part of tibia (shin bone)
- What do they do?
 - Act as anchor points to allow to meniscus to perform its function
- Why do tears in this location need to be repaired?
 - Meniscus non-functional without connected meniscus roots
 - Rapidly progressive knee arthritis

Posterior Root Tear

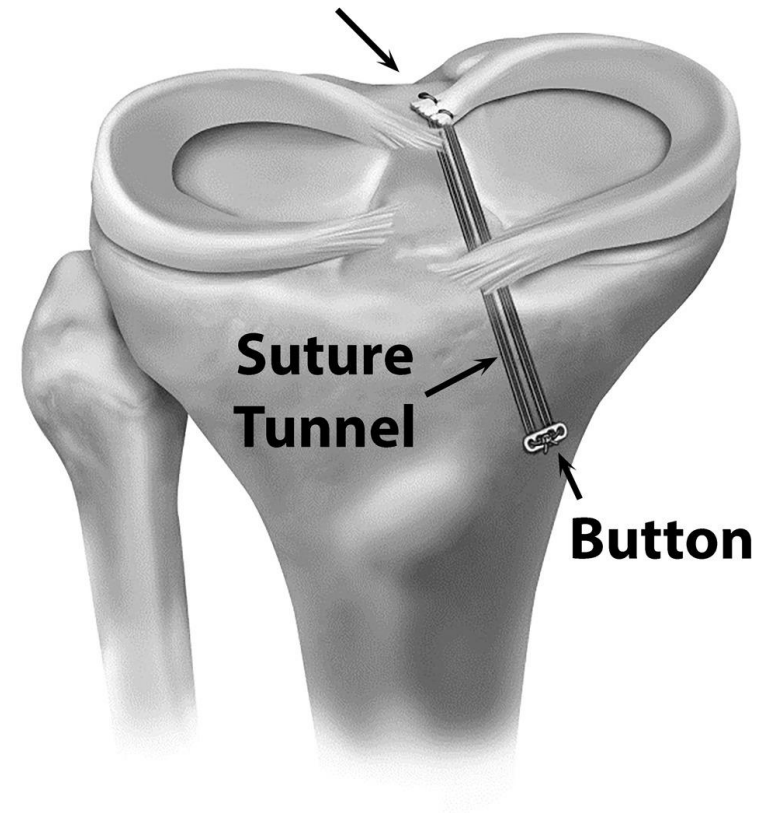
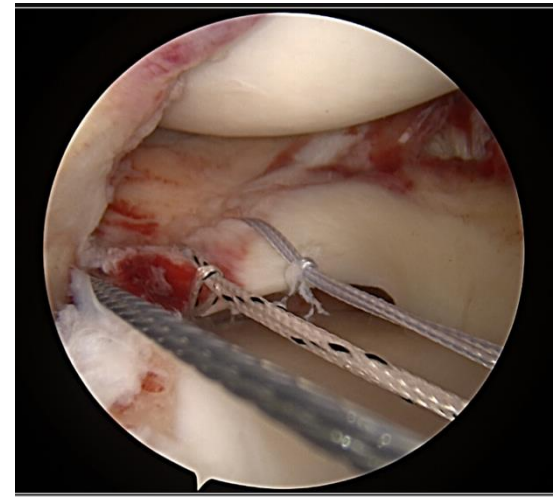


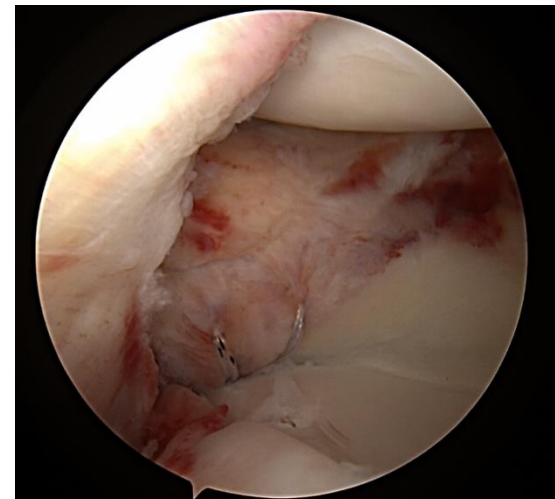
Figure 6: Chahla J, Moulton SG, LaPrade CM, Dean CS, LaPrade RF. Posterior Meniscal Root Repair: The Transtibial Double Tunnel Pullout Technique. Arthrosc Tech. 2016 Mar 28;5(2):e291-6. doi: 10.1016/j.eats.2016.01.006. PMID: 27354949; PMCID: PMC4912629.

How is Surgery Performed?

- Arthroscopic (minimally invasive)
- 2 small incisions below the kneecap on front of knee
- 1 small incision 2 inches lower overlying tibia bone
- 30-minute outpatient procedure
 - General anesthesia (asleep)
 - Stitches placed into torn tissue
 - Stitches fixed to bone using small medical-grade plastic anchor



Stitches (blue and white) placed into torn meniscus and shuttled down small tunnel using wire (black)



Meniscus after repair – now stable

Expectations for Day of Surgery

Day of Surgery: At Surgery Center

- Will arrive to surgery center approximately 2 hours prior to surgery
 - Surgery center will call with specific time day before surgery
- Nothing to eat or drink after midnight
- Shower with Hibiclens night before and morning of surgery
- Time at surgery center:
 - **Before surgery:** Check in, paperwork, IV placement, meet anesthesia team (1-2 hours)
 - **Surgery:** Roll back to operating room, go to sleep, surgery performed, wake up (1 hour)
 - **After surgery:** Roll to recovery room. Pain will be controlled. Water and crackers administered. Roll to car for family member/friend to take you home.



Mountainside Medical
Equipment

Day of Surgery: Home

- Ice and elevate knee above level of heart
 - 15 mins on and 15 mins off
 - Recommend ice machine (purchase on Amazon) or compressive device (rent/purchase GameReady)
- Resist temptation to place pillow under knee – **KEEP KNEE STRAIGHT WHEN RESTING!**
- Take medications as directed on discharge instructions for pain and inflammation
- Light diet on day of surgery - avoid heavy/greasy foods
- Limit time with leg not elevated to minimize swelling
- Limit narcotic use – do not “stay ahead” of the pain



Day after Surgery: Home

- Continue to ice and elevate knee above level of heart to control swelling
 - Consider ice machine for ease of use
- Resume your regular diet
- Use crutches until instructed to discontinue by Dr. Lamplot or your physical therapist
 - *Do not put full weight on leg until instructed to do so*
- May shower the day after surgery
 - Remove Ace bandage
 - Leave waterproof dressings in place until follow-up visit
 - Wrap knee in Saran wrap/food cling and discard after shower



Home Exercises:
***Start prior to outpatient Physical
Therapy the day after surgery***

*Please note in all pictures, the involved leg is the right leg which is identified with a yellow band around the right ankle. If it is your left knee that is injured (involved), follow these directions using your left leg.

Knee Extension

It is very important to get your knee fully straight prior to surgery

- Lie on your back with both legs straight.
- Place a rolled up towel under the heel of your injured leg.
- Relax and let your involved knee straighten as much as possible.
- Try to maintain this position for 2-3 minutes.
- Then place the towel under your knee for a 30 sec rest period.
- Repeat this sequence 4-5 times.
- Perform 3-5 times per day until your knee is fully straight.
- A cold pack can also be applied during this exercise.



Quadriceps Set

- Lie on your back with a towel roll under your involved knee and your noninvolved knee bent.
- Tighten your quadriceps (the muscles on the top of your thigh) and gently press the back of your knee into the towel roll. NOT as hard as you can. Do NOT lift your heel off the bed
- Should you experience any pain or discomfort, make the towel roll thicker/bigger.
- Hold 10 seconds. Rest 10 seconds. 15 repetitions. 5-7x /day.
- Goal is 100 repetitions per day.



Knee Bending (Flexion) and Straightening (Extension): Active / Active-Assisted Range of Motion

(1) Sit at the edge of the bed or a firm surface. Support your involved leg (band) with your non-involved leg.

(2, 3) Gently allow your involved leg to bend by supporting it with the assistance of your non-involved leg.

When your knee bends to an angle of approximately 70 degrees (or at an angle that you deem comfortable) slowly remove your non-involved leg from behind your involved leg and dangle as tolerated

(4) Attempt to bend your involved knee under the bed or firm surface. Hold a gentle stretch for 5 seconds

(6) Place your non-involved leg back behind your injured leg for support. Straighten your involved knee with the assistance of your non-involved leg

Repeat 20 times. 3-5 times per day.

When range of motion improves, advance this exercise by:

(5) Placing your non-involved leg in front of your involved leg and together with your involved leg gently bend your involved knee back until you feel a gentle stretch. Again hold 5 seconds.



SUPPORT



RELAX TO
BEND



RELAX TO
BEND



DANGLE



BEND



STRAIGHTEN
WITH SUPPORT

Straight Leg Raise (Lying on your back)

- Lie on your back with your involved knee straight and your other knee bent as shown.
- Tighten your stomach, tighten the muscles on top of your thigh (quadriceps), keep the leg completely straight, and then raise it to the height of your other knee.
- Hold for 1 second and slowly lower.
- Perform 1 set of 10 repetitions, 3 times per week
- Advance to 2 sets of 10, then 3 sets of 10 as tolerated.
- Use a brace if recommended by your physician or if you can't keep your knee straight when lifting.



Calf Stretch

- Sit Up with your knee straight with a STRAP or Towel around the ball of your foot.
- With your hands, gently pull the strap/towel (foot) towards you to feel a stretch in your calf and behind your knee.
- Hold 30 seconds. Repeat 3 sets. Perform 2 times per day.



IMPORTANT!!!!

- DO NOT PUT PILLOW OR BLANKET UNDER KNEE WHEN RESTING OR SLEEPING!
- **CRITICALLY IMPORTANT** TO REGAIN KNEE EXTENSION (STRAIGHT KNEE) AFTER SURGERY



Outpatient Physical Therapy

Start 2-3 days after Surgery

Outpatient Physical Therapy

Make sure to call ahead, as they often book out weeks in advance

Goals of Physical Therapy

1. Control pain
2. Regain full range of motion
3. Activate (early) and strengthen (later) quadriceps muscles
4. Wean off crutches
5. Return to desired activity level

Please discuss goals with Physical Therapist

1. Specific job demands (i.e. manual labor job)
2. Fitness goals
3. Return to sport (competitive/recreational)

Expectations: Symptoms

Time after Surgery	0-2 weeks	2-6 weeks	6 weeks-3 months	3-6 months	6 months - 1 year
Noticeable knee swelling			Tapers off		
Bruising	Patient-dependent				
Knee stiffness			Tapers off		
Knee soreness with daily activities (walking, standing)			Tapers off		
Knee soreness (frontal) with activities				Tapers off	Rare
Weakness of surgical limb (quadriceps)					Restored
Pain medication needed		Tapers off	NSAIDs/Tylenol only	Minimal, if at all	None

Note: Recovery timelines are general expectations and vary from person to person based on a variety of factors including age, presence/severity of meniscus tear, baseline strength and activity level, body habitus, compliance with postoperative instructions including home exercises and physical therapy, and other health factors.

Expectations: Function

Activity	0-2 weeks	2-6 weeks	6-12 weeks	3-4 months	4-6 months	6-9 months	9 months +
Driving (surgery on left knee) *must be off narcotic pain meds							
Driving (surgery on right knee) *must be off narcotic pain meds		Once able to bear weight and push pedals confidently. Start on side streets or parking lots and once comfortable, OK for busy streets/highways					
Desk work	Plan to take anywhere between 2 days and 2 weeks off						
Walking without crutches	Will be nonweightbearing		Taper off				
Long distance walking							
Basic housework (cleaning)			Ramp up slowly				
Light manual labor				Wait for clearance from Dr. Lamplot			
Heavy manual labor					Wait for clearance from Dr. Lamplot		
Jogging/light athletics					Light jogging no sooner than 4 months		
Deep squatting						No deep squats until 5 months, no deep loaded squats (weights at gym) until 6 months	

Additional Considerations

- **Females over 40 years old:** Take 5000 IU Vitamin D (over the counter) once daily for one month unless already taking **prescription** Vitamin D or bone density medication (i.e. bisphosphonate, Foreto)
- **Optimize body weight:** Decreased load through knees will improve longevity of knee joint and prolong need for joint replacement surgery
- **Low-impact exercise:** “Smooth” exercises (elliptical, stational bike/spin class, rowing machine, weight machines) may be more beneficial and less painful than high-impact (i.e. running and jumping)
 - OK to modify group fitness classes (you do not have to do Burpees or box jumps)
 - *Long walks do not adequately strengthen the quadriceps muscle* – focus on leg presses, spin class, and other exercises that better strengthen the quadriceps muscle
- **Maintenance Program: Your work does not stop when physical therapy ends** – make a lifestyle change and continue physical therapist-directed fitness program to prevent recurrence of knee pain

Crutch Height:

adjust so the pad is 2 finger widths
below the armpit



Hand support:

aligns with the crease of the wrist
when the arm is hanging relaxed



Final Fit:

Elbows are slightly bent when the
hands are grasping the supports



Questions?

Contact us via:

Northwest Community (NCH) – MyChart

NorthShore – NorthShore Connect