



Medial Collateral Ligament Repair Protocol-Dr. McClung

Brace:

- Normally patients will be wearing post-op knee brace locked in 30 degrees for ambulation and sleeping but drop-locked for sitting and knee ROM.
- Patients will wear the brace for 6 weeks and then they will be fitted with a functional hinged knee brace.

Brace Settings:

- Week 1-3 brace locked at 0
- Week 3-6 brace 0-30 – progressing weekly by 30 degrees as tolerated
- Week 6-12 Hinged brace is opened fully. Patient is transitioned to a functional knee brace generally with no ROM limitation

Weight Bearing:

- Patients are on strict NWB for 6 weeks with gradual weaning of the crutches over 1-2 additional weeks as long as patient has good quad control, full knee extension.

Swelling Control

- Ice, elevation, compression, and modalities as needed to decrease swelling

Range of Motion (ROM)

- No knee motion generally for the first 2-3 weeks.
- Active Assistive knee flexion ROM beginning at week 3 post-op and at least 2-3 times daily per protocol ROM restrictions
- Patellar mobilization can begin immediately at 2 days post-op and continued for up to 6 weeks if it is still limited in patellar mobility (4-6 times per day)

ROM Restrictions:

- Week 1-3 Knee Locked at 0 degrees
- Week 3-6 0-30 degrees (sometimes MD will allow 0-60 depending on repair)
- Week 6-12 Full ROM-gradually restore normal ROM but do not force knee extension

Strengthening Program:

- Quadriceps Sets, Glut Sets.
- Electrical muscle stimulation and/or biofeedback during quadriceps exercises can begin at 2 days post-op
- Straight leg raises-flexion-Can begin at 2 days post-op as long as brace is on -8 sets of 10 repetitions-gradually increase weights in 1 lb increments up to 5-7 lbs.
- Straight leg raises-abduction and extension can begin at 3 weeks post-op as long as brace is on and locked. If adding weights for hip abduction, place the weight or resistance above the knee to not put any undue stress on the repaired MCL.
- **Do not ever do SLR for Hip adduction** as this puts tremendous stress on the repaired MCL
- Do not do any closed chain knee rehab exercises until at least 6 weeks post-op which is when patient is allowed WBAT
- Stationary bicycle when MD protocol allows at least 105 degrees and patient has no pinching with end range flexion. This generally will not occur until 6-8 weeks post-op. Perform bike with low resistance and seat raised.

I. Phase I: Proliferation Phase (weeks 0-6)

Phase I: Proliferation Phase Goals:

- Protection of healing tissue from load and shear forces
- Avoid valgus stress
- Decrease pain and effusion
- Restoration of full passive knee extension
- Gradual improvement of flexion and extension within ROM restrictions of the MD protocol
- Regaining quadriceps control

Day 2-Week 1 Post-op

- Ambulation-2 Crutches and NWB with brace locked at 0 degrees
- Perform dressing change-notify MD if any signs of excessive drainage, signs of infection or DVT or any other potential complications
- Can use vasopneumatic pump and cryotherapy to decrease swelling
- High volt galvanic stimulation (HVG) can also be used along with ice to decrease swelling
- Patient should be instructed to keep leg elevated, wear ace bandage and to ice knee for 15-20 minutes at least 4-5 times per day
- Pre-modulation or interferential electrical stimulation can be used to decrease post-operative pain
- Biofeedback and/or electrical muscle stimulation can be used to facilitate quadriceps contraction
- Patellar mobilization-medial, lateral, superior and inferior
- Long sit hamstring stretch

- Gastroc stretch
- Ankle pumps to prevent lower leg edema and to prevent DVT
- Quad sets, gluteal sets, in supine
- Supine Hip Flexion Leg Raise with brace on and brace locked

Weeks 1-3 Post-op

- Continue to use Biofeedback and/or electrical muscle stimulation
- Add weights for SLR-Hip Flexion with brace on and brace locked at 0 degrees

Weeks 3-6 Post-op

- At the end of week 3-Patient can begin active assisted knee flexion seated over the edge of the bed or table within ROM restrictions outlined by MD
- AA Knee Flexion using other leg if patient having difficulty regaining knee flexion (don't go beyond ROM restrictions which are generally 0-30 degrees)
- Multi-angle (MAI) quadriceps isometric exercise within ROM restriction (at 30 degrees, 45 degrees and 60 degrees)
- Continue hamstring and gastroc stretches
- Scar massage to improve scar mobility
- SLR-Hip Abduction/Hip Extension with brace on and within ROM restrictions-add weights above the knee as tolerated

II. Phase II: Transition Phase (weeks 6-12)

Criteria to progress to Transition Phase

- Full passive knee extension
- Knee Flexion to full (135 degrees)
- Minimal pain and swelling

Phase II: Transition Phase Goals:

- Gradually increase ROM and WB
- Gradually improve quadriceps strength/endurance
- Gradual increase in functional activities

Brace

- Continue functional hinged knee brace for additional 6 weeks for ambulation with WBAT with assistive devices

WB Status

- Progress WB as tolerated (Physician Direction)
- Discharge crutches at 6-8 weeks

ROM:

- Gradual increase ROM generally to full extension and flexion as tolerated unless otherwise directed by MD
- Regain full passive knee extension
- Continue patellar mobilization and soft tissue mobilization, as needed
- Continue stretching program

Week 6-12 Post-op

- Active SAQ (if extension ROM allows) can begin if patient can lift at least 3 lbs on SLR hip flexion with no extensor lag and no pinching in the knee
- If patient can lift 3 lbs on 4 way SLR- progress to hip strengthening on the cable column or multi-hip machine. Can do cable column hip flexion/abduction/extension but **do not do hip adduction**
- Can begin aquatic exercise for open chain hip flexion/abduction/extension
- Standing gastroc and soleus stretch
- Standing bilateral heel raise with brace locked in extension
- Stationary bike if range of motion per MD ROM restrictions allows, begin with low resistance and seat elevated
- Gradually add resistance for SAQ's
- D/C brace for ambulation at 12 weeks post-op
- Cone walk-forward and laterally
- Leg Press (2 legged)-begin at 0-30, progress to 0-45 and then 0-60
- Two leg bridge on table
- Physioball two leg bridge with knees extended
- One leg standing balance
- Progress to one leg balance-Airex
- Begin physioball wall squats or wall squats 0-30 progressing to 0-45 degrees
- Front step-ups
- Lateral step-ups
- Quadriceps stretch in sidelying or prone
- BOSU forward/back and side to side
- One leg heel raise
- Physioball wall squats or wall squats 0-45 degrees
- Begin Resisted knee extension (FAQ) with ankle weights (20-90 degrees)
- When patient can do FAQ with 5 lbs., can add leg extension machine from 20-95 degrees and add weights as tolerated
- Treadmill walking to increase endurance and cadence
- Elliptical machine to increase endurance
- Leg Press-one leg from 0-45 and progress to 0-60 degrees as tolerated

Week 12-16 Post-op

- Step down
- BOSU mini-squats (0-30)
- Physioball wall squats or wall squats 0-60 degrees
- Physioball one legged bridge with knee extended
- Physioball two legged curl for hamstrings

4 -6 month Post-op

- Begin hamstring curl machine
- Lateral shuffle with band
- Monster walk with band
- Airex box drill with band for 4 way hip
- Cone reach with knee straight
- Cone reach with knee bent slightly
- Forward lunge (limited range of motion)
- Do not do lateral lunge

Criteria to Start Running/Agility Program

- MMT at least 5/5, ROM equal to uninvolved side or at least 0-125
- Normal gait pattern at least 20 minutes without symptoms
- Leg Press test within 75-80% of contralateral LE
- Hamstring and quadricep strength 70 % of the involved side isokinetically,
- Lateral step test within 75-80% of contralateral LE
- No pain, crepitus, edema or giving way
- Normal stability with valgus stress test
- Clearance from MD

5-12 Months Post-op

- Lateral shuffle/Carioca
- Agility Ladder
- Sport Cord jogging
- Treadmill jogging or Aquatic jogging and Water Aerobics