



Dr. John Awowale, MD
Meniscal Root Repair Protocol

Phase 1 – Maximum Protection Phase (0-6 weeks)

Goals for Phase 1

- Protect repair
- Minimize effusion
- ROM per guidelines listed, emphasis on extension
- Encourage quadriceps function
- Scar tissue mobility

Precautions

- Avoid knee hyperextension during this phase
- No isolated resistance knee flexion for 6 weeks due to semi-membranous attachment to medial meniscus and popliteus to the lateral meniscus

Immobilization/Weight Bearing

- 25% weight bearing with crutches and brace from 0 – 90° for 6 weeks

Range of Motion

- 0-6 weeks: 0-90° PROM, emphasis on full extension

Brace

- 0-6 weeks: brace opened from 0-90° and to be worn at all times unless performing physical therapy or for hygiene. Keep brace locked at 0° for ambulation.

Manual Therapy

- Patellar mobility (superior, medial, lateral)
- Scar massage when incisions closed
- Gentle flexibility using deep tissue mobilization or the “Stick” – hamstring, quadriceps, gastroc-soleus, ITB
- PROM knee flexion to 90°, strong emphasis on full knee extension
- Quadriceps setting
- NMES if needed to promote quadriceps contraction
- Avoid knee hyperextension with quadriceps setting

Strengthening

- Hip strengthening
 - Multi-plane open kinetic chain SLR with brace on if needed for quad lag
- Core strengthening

Modalities

- Vasopneumatic compression for edema management 2-3x/week
- Cryotherapy, 3 x per day for 20 minutes each with knee elevated above heart
- NMES for quadriceps function if quad lag present

Phase 2 – Moderate Protection Phase (6-8 weeks)

Goals for Phase 2

- Minimize effusion
- Gently increase ROM
- Normalize gait with heel-toe pattern
- Discharge brace
- Closed kinetic chain strengthening program

Immobilization/Weigh bearing

- Slow progression back to FWB with BW% increasing by 25% every 3-4 days if patient has controlled effusion and appropriate knee control

Range of Motion

- Gradually progress toward full range of motion

Brace

- Begin progression of opening brace from 0-30° if able to demonstrate good quad control during ambulation with brace being further opened every 3-4 days until 90° is reached.
- Expectation of 0-90° while weight-bearing for 3-4 days without crutches before



discharge or brace

Precautions

- No kicking in pool for 12 weeks
- Avoid closed kinetic chain knee flexion past 90°
- Avoid twisting and pivoting for 12 weeks

Manual Therapy

- Gentle flexibility – hamstring, quad, gastroc-soleus, ITB

Strengthening

- Stationary bike with light resistance (seat height=less than a 120° knee angle through entire revolution on upright bike)
- Bilateral gym strengthening program (mini squats, leg press, 4-way hip strengthening, step-ups, bridging, calf raises)
- Initiate knee AROM with CKC strengthening
- Core strengthening

Aquatics

- Initiate aquatic therapy program when incisions are closed

Neuromuscular Control

- Proprioception on stable surface

Modalities

- Vasopneumatic compression for edema measurement 2x/week
- Cryotherapy, 2 x per day for 20 minutes each with knee elevated above the heart
- NMES for quadriceps function if quad lag present with SLR

Phase 3 – Advanced Strengthening Phase (8-12 weeks)

Goals for Phase 3

- Progress muscle strength, endurance, and balance

Range of Motion

- Restore full ROM

Strengthening

- Stationary bike or elliptical for warm-up
- Bilateral gym strengthening with progression to unilateral as able (leg press, step-ups, hamstring curls, side-stepping, single leg squat, multi-directional lunges)
- Hamstring strengthening with progression to OKC
- Core strengthening

Neuromuscular Control

- Advanced proprioception on unstable surfaces
- Add dual tasking and sport specific balance as able

Precautions

- No kicking in pool for 12 weeks
- Avoid twisting and pivoting for 12 weeks
- Avoid deep squatting for 4 months
- Avoidance of impact activity until able to pass functional testing

Modalities

- Cryotherapy after activity

Testing to advance to Phase 4 of protocol

- Functional testing to be scheduled before 12 week follow-up with MD (appt must be scheduled with Aurora BayCare Sports Medicine department – East Side location to complete testing). Please contact physician office if unable to make this arrangement for alternative testing.
- Y-Balance testing within 6 cm of involved LE
- Isometric quadriceps testing (<25% difference)
- Single leg squat with good control



Phase 4 – Strengthening and Plyometric Phase (12-20 weeks)

Goals for Phase 4

- Progress single leg muscle strength, endurance, and balance
- Initiate impact activity
- Sport or work specific tasks

Manual Therapy

- Restore flexibility – hamstring, quad, gastroc-soleus, ITB

Strengthening

- Stationary bike or elliptical
- Unilateral gym strengthening program (single leg squats, eccentric leg press, lateral step-downs, advanced bridging, multi-directional lunges, CKC hamstring curls)
- Initiate impact activities
- 12-14 weeks:** sub-maximal body weight impact exercise (pool, GTS, plyo-press, Alter G)
- 14+ weeks:** sagittal plane running, agility drills, sub-maximal plyometrics
- 16+ weeks:** Advance to multi-directional
- Core strengthening

Neuromuscular Control

- Advanced proprioception on un-stable surfaces with perturbations and/or dual tasking, add sport specific balance tasks as able

Modalities

- Cryotherapy after activity

Return to Function Testing: Aurora BayCare return to function for the lower extremity protocol to be used

- Week 24: Return to function testing** per MD approval (appt must be scheduled with Aurora BayCare Sports Medicine department – East Side location to complete testing). Please contact physician office if unable to make this arrangement for alternative testing.
- Criteria: pain-free, full ROM, minimal joint effusion, isokinetic strength and functional testing at 90% compared to uninvolved, adequate knee control with sport and/or work specific tasks