



# Meniscal Root Repair

## Post-Operative Rehabilitation Protocol

### 0-4 weeks

- NWB x 6 weeks
- Brace locked in 0 degrees extension when ambulating or sleeping
- AROM/PROM: 0-90° with emphasis on full extension
- Patella mobilization
- SLR supine with brace locked at 0 degrees
- Quad Sets with brace locked at 0 degrees
- Heel Slides
- Ankle Pumps

### 4-6 weeks

- Continue NWB status until 6 weeks with brace locked in 0 degrees extension
- Progress with ROM until full

### 6-8 weeks

- Transition to an unloader brace at 6 weeks will continue to wear until 6 months
- Begin WBAT progression: advance to PWB (25% then 50%) starting at 6 weeks continue to progress until full WBAT
- Discontinue crutches when gait is normalized  
Wall sits to 90 degrees

### 8-12 weeks

- WBAT with use of unloader brace until 6 mon. post-op
- Full ROM
- Progress with close chain exercises
- Lunges from 0-70 degrees
- Leg press from 0-70 degrees
- Proprioception exercises
- Begin stationary bike

### 12-16 weeks

- Progress strengthening exercises
- Single leg strengthening
- Begin jogging and progress to running
- Sports specific exercise

### Weight Bearing Status

NWB x 6  
weeks

### Brace Settings

Locked straight x 6  
weeks when  
ambulating or  
sleeping. Otherwise  
open brace once  
good quad control

### ROM Restrictions

PROM 0-90°  
beginning  
POD 1



Exercise	Week																		
	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Initial Exercises:																			
ROM Goals	0-90°		0-125°			Progress to full													
Flexion/extension, heel slides																			
Patella/Tendon mobilization																			
Quad Series	0° ISOs, SLR				60° ISO			70-30° arc-resisted				Full arc resisted							
Hamstring series/strength progression	No isolated, resisted HS								ISOs, hip based				Knee-based resisted arc						
Sit and reach for hamstrings (no hyperextension)																			
Ankle Pumps																			
Crutch weaning	NWB																		
Heel prop knee extension stretch																			
SLR (w/ brace until quad control restored)																			
Toe and heel raises																			
Balance series																			
Weight-bearing Strength Exercises:																			
Double knee bends	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Leg Bridges (2 → 1 leg)	NWB																		
SLS Balance progressions																			
Squat/Leg press (ISO → reps, 2 → 1 leg) (max 70°)							0-45°						0-70°		Max 70°				
Step-up/Lunge Progressions (Max 70°)													ISOs		0-70°		Max 70°		
Dead Lift (2 →1 leg)																			
Sports Test exercises																			
Cardiovascular Exercises:																			
Bike with both legs-no resistance	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Bike with both legs- resistance	NWB																		
Aqua jogging																			
Treadmill-walking (no limp)																			
Swimming with fins-light flutter kick																			
Elliptical Trainer																			
Stair stepper																			
*Cardio Exercises							Must tolerate daily walking with no limp & no significant increase in pain/swelling prior to initiating WB cardio (walk, elliptical, stepper)												
Agility Exercises:																			
Running Progression	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Initial-Single Plane	NWB																		
Advance-Multi Directional																			
Functional Sports Test																			
High Level Activities:																			
Golf Progression	1	2	3	4	5	6	7	8	9	10	12	16	20	24					
Outdoor biking, hiking, running	NWB																		
Return to Full Sport at 7-9 months post-op																			

Adapted from post-operative protocol created by Howard Head Physical Therapy, Jill Monson, PT, OCS and Jon Schoenecker, PT, OCS, CSCS



## Quad Series:

- Quad sets (5 sec hold) also quick contractions (NMES to supplement)
- Prone quad sets
- SLR with no extension leg
- Progression of Quad Strengthening (WB exercises at 6 weeks)
  - LAQ in safe range -no added resistance to begin
  - Once weight bearing tandem stance TKE with 5 sec hold
  - Isometric wall sit
  - SLR with resistance
  - Step up progression
  - Squat progression
  - Leg press progression
  - Lunge progression

## Hamstring Series:

- Hamstring stretching (supine/prone)
- Hamstring set (heel dig)- contract hamstring with knee flexed pressing heel into the floor (5 sec hold)
- Hamstring curls
- Progress to resisted hamstring curl

## Sport Test Exercises:

- Goals: impact training and introduction of directional drills
- Double leg squat jumps
- Box jumps
- Speed skaters
- Double leg jumps for height and distance progress to single leg as tolerated
- Blaze pod change of direction drills

## Further Clarifications and Considerations

- May begin to implement BFR as early as 1 week into post-op period
- Functional Sports Test: Baseline completed at 7 months post-op with subsequent test at 9 months



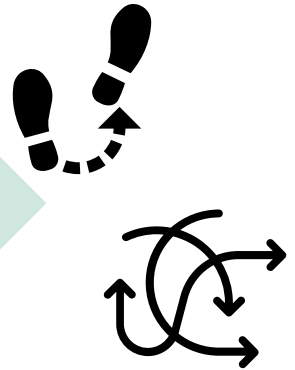
## Return to Running Criteria

- Trace effusion, flexion within 5 degrees of contralateral side
- LSI on anterior reach Y balance test  $\geq 90\%$
- LSI on quadriceps torque output on isometric measurement  $\geq 75\%$
- 12" SL squat tolerance
- Able to walk > 1 mile with no limping or pain
- Able to "hop" with UE assist on operative leg 5 times without pain or compensation
- SL balance with eyes closed 30 seconds without loss of balance



## Return to Agility/Change of Direction Criteria

- Return to running criteria listed above met
- No effusion
- Full ROM
- Quad LSI on isokinetic  $\geq 85\%$
- Hamstring LSI on isokinetic  $\geq 85\%$
- LSI on anterior reach Y-balance  $\geq 95\%$
- SL hopping pain-free and effusion free



## Return to Sport Criteria

- In order to test must demonstrate full AROM, no pain, no/trace effusion, 5/5 strength, negative lachman and pivot shift, LSI  $\geq 95\%$  hamstring curl and leg press
- Quadricep strength  $\geq 95\%$  of contralateral side (< 2cm of atrophy)
- Able to perform single leg squat with correct form
- LSI SL hop  $\geq 95\%$
- Y-Balance  $\geq 95\%$  (mean of 3 trials in anterior, posterolateral, posteromedial /100)
- Vertical jump test, single leg hop distance, and timed single leg hop over 20 -feet  $\geq 90\%$  of contralateral side

