



Meniscal Root Repair

Post-Operative Rehabilitation Protocol

0-4 weeks

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

4-6 weeks

- Continue NWB status until 6 weeks with brace locked in 0° 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°

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°
- Leg press from 0-70°
- Proprioception exercises
- Begin stationary bike

12-16 weeks

- Progress strengthening exercises
- Single leg strengthening
- Begin jogging and progress to running
- Sports specific exercise
- Plyo Prep Screen when initiating running and/or jumping. Lower Body Assessment when initiating return to sport progression. Schedule via QR code email or spc@rushortho.com



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:	1	2	3	4	5	6	7	8	9	10	12	16	20	24							
Double knee bends	NWB																				
Leg Bridges (2 → 1 leg)																					
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:						1	2	3	4	5	6	7	8	9	10	12	16	20	24		
Bike with both legs-no resistance	NWB																				
Bike with both legs- resistance																					
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:	1	2	3	4	5	6	7	8	9	10	12	16	20	24							
Running Progression	NWB																				
Initial-Single Plane																					
Advance-Multi Directional																					
Functional Sports Test																					
High Level Activities:	1	2	3	4	5	6	7	8	9	10	12	16	20	24							
Golf Progression	NWB																				
Outdoor biking, hiking, running																					
Return to Full Sport at 7-9 months post-op																					



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



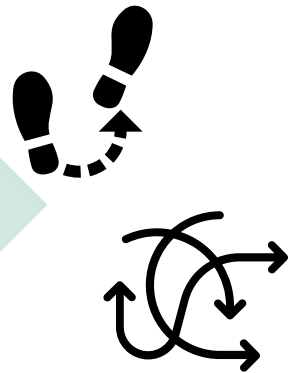
Return to Running Criteria

- 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

