



Meniscal Repair (Inside Out)

Post-Operative Rehabilitation Protocol

0-2 weeks

- NWB for 6 weeks with brace locked in extension
- ROM: 0-90° with emphasis on full extension
- Patella mobilization
- SLR supine with brace locked at 0°
- Quad Sets with brace locked at 0°
- Ankle Pumps

2-4 weeks

- Short crank (90mm) ergometry
- Continue NWB status until 6 weeks
- Brace locked in full extension until 6 weeks
- ROM: 0-125 degrees (maintain full extension)
- Active knee extension to 40°
- Standard (170 mm) ergometry (ROM >115°)

4-8 weeks

- Begin WBAT progression advance to PWB (25% then 50%) starting at 6 weeks
- Discontinue crutches once gait is normalized and non-antalgic
- Discontinue brace once adequate quad control
- Wall sits to 90°
- Leg press (80-0° arc)
- Mini squats/weight shifts
- Proprioception training

8-12 weeks

- Advance to full WBAT without brace
- Full ROM
- Leg press 0-70°, lunges 0-70°
- Continue proprioception exercises
- Begin stationary bike

12-16 weeks



- Progress strengthening exercises
- Single leg strengthening
- Begin jogging to running transition
- Advance sports-specific exercise
- 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

Full PROM 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 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° | | | | Max70° | | | |
| Dead Lift (2 →1 leg) | | | | | | | | | | | | | | | | | | | | | |
| Banded resisted directional stepping | | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | | |
| *Note for 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



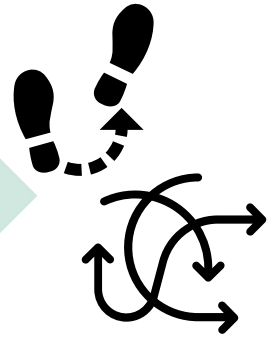
Return to Running Criteria

- 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 Activity

- 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

