

Complicated Meniscal Repair

(For Root, Bucket-Handle, Radial, And Complex Repairs)

Weeks One to Four	Weeks Four to Eight
Evaluate	Evaluate
<ul style="list-style-type: none"> ➤ Range of motion ➤ Joint hemarthrosis ➤ Ability to contract quad/vmo ➤ Gait: Anticipate immobilized in knee extension and NWB x 4 weeks ➤ Patella Mobility ➤ Inspect for infection/signs of DVT ➤ Assess RTW and sport expectations 	<ul style="list-style-type: none"> ➤ Range of Motion ➤ Ability to contract quad/vmo ➤ Signs of infection or DVT ➤ Patella mobility ➤ Evaluate/discuss footwear to optimize foot and ankle biomechanics
Patient Education	Patient Education
<ul style="list-style-type: none"> ➤ Support Physician prescribed meds ➤ Reinforce use of brace and assistive device <p style="text-align: center;"><u>PRECAUTIONS</u></p> <ul style="list-style-type: none"> ➤ ROM 0-60 x 2 weeks then 0-90 x 2, unless otherwise specified by MD ➤ If medial repair, no HS PRE x 4 weeks ➤ NWB x 4 weeks, then PWB x 2 weeks ➤ Discuss frequency and duration of treatment (2-3x/wk is expected for 8-12 weeks) 	<ul style="list-style-type: none"> ➤ Begin progressive WB if cleared by physician ➤ Progress flexion ROM as tolerated ➤ Brace may be opened to 10 degrees less than the patients ROM if good quad contraction (week 6) ➤ DC brace at (week 8) ➤ Reinforce precautions. No weight bearing activities beyond 90 degrees of knee flexion
Therapeutic Exercise	Therapeutic Exercise
<ul style="list-style-type: none"> ➤ May complete AROM and Isometrics within surgical precautions (heel slides and AAKE (0-60 x 2weeks, 0-90 x 2weeks), supine or sitting hangs/heel prop, quad sets, leg raises, towel stretch) <p style="text-align: center;"><u>Initiate aquatics at 4 weeks post-op</u></p> <ul style="list-style-type: none"> ➤ Closed chain aquatics: Gait training forward, backwards, side-ways. Emphasis on equal WB and quad control. 4-way hip, heel raises, marching, G/S and hamstring stretching .Balance: SLS, narrow BOS. *WB in extension only until 6 weeks post-op ➤ Open chain aquatics: Gentle bicycle, jumping jacks and cross-country skiers <p>*Focus on duration of each exercise versus repetitions (30-45 seconds, progress to 60-90 seconds)</p>	<ul style="list-style-type: none"> ➤ Initiate bicycle (do not force flexion) ➤ Initiate WB in extension ➤ Begin closed chain exercises 0-60 degrees (6 weeks post-op) (leg press, step up) ➤ Initiate balance exercises, single leg stable surfaces ➤ Initiate active hamstring and progress to light pre <p style="text-align: center;"><u>Advance aquatics at 6 weeks post-op</u></p> <ul style="list-style-type: none"> ➤ Closed chain aquatics: Continue gait training, Initiate shallow squats, and small step-ups ➤ Open Chain aquatics: Continue gentle bicycle, jumping jacks and cross-country skiers <p>*Focus on duration of each exercise versus repetitions (30-45 seconds, progress to 60-90 seconds)</p>
Manual Techniques	Manual Techniques
<ul style="list-style-type: none"> ➤ Patella mobilization as needed ➤ PROM as tolerated (focus on extension) ➤ Incision mobilization week 2 	<ul style="list-style-type: none"> ➤ Patella mobilization as needed ➤ Posterior capsule mobilization (if needed) ➤ Incision mobilization
Modalities	Modalities
<ul style="list-style-type: none"> ➤ NMES / Interferential/Biofeedback ➤ Ice 	<ul style="list-style-type: none"> ➤ Modalities may be used as needed
Goals	Goals
<ul style="list-style-type: none"> ➤ Gain full knee extension/restore quad contraction ➤ Control pain ➤ Reduce joint hemarthrosis ➤ Independence with post-op precautions ➤ 0-90 degrees ROM per physician 	<ul style="list-style-type: none"> ➤ Normal gait pattern without brace or assistive device by week 8-10 ➤ Normal ROM by week 8-10 ➤ Quad strength to 4/5 by week 8

Weeks Eight to Twelve	Weeks Twelve to Discharge
Evaluate	Evaluate
<ul style="list-style-type: none"> ➤ Gait ➤ ROM ➤ Balance 	<ul style="list-style-type: none"> ➤ Any excessive joint laxity ➤ Address any deficits that may limit return to work or sport. ➤ HEP compliance
Patient Education	Patient Education
<ul style="list-style-type: none"> ➤ No impact, deep squats, squats with lifting, crossed legged sitting until 4 months post op. 	<ul style="list-style-type: none"> ➤ No impact, deep squats, squats with lifting, crossed legged sitting until 4 months post op.
Therapeutic Exercise	Therapeutic Exercise
<ul style="list-style-type: none"> ➤ Progress closed chain and isotonic exercises to include multiple planes and single leg activity week 10 ➤ Progress HS strengthening ➤ Single leg dynamic balance activity and unstable surfaces week 12 ➤ May begin CFA at 10 weeks with physician approval ➤ May initiate cardiovascular training at 12 weeks (Bike, Swim, and elliptical) ➤ Closed chain aquatics: Advance step up and lunge activity ➤ Open Chain aquatics: Initiate stretching of quads and hip flexors as indicated. (Use of floatation cuffs or stair lunges. Balance: SLS, kickboard balance. Eyes open, eyes closed <p>*Progress exercises using resistance fin(s) or hydrocuff(s)</p>	<ul style="list-style-type: none"> ➤ Continue strength and conditioning ➤ Encourage participation in CFA ➤ May initiate light/straight plane running activity with full motion, strength, and physician approval at 16 weeks (No cutting, pivoting, or jumping) ➤ Agility and plyometrics at 20 weeks given good tolerance of straight plane running and pre-running activity
Manual Techniques	Manual Techniques
<ul style="list-style-type: none"> ➤ Patella mobilization as needed ➤ PROM and posterior capsule stretch as indicated 	<ul style="list-style-type: none"> ➤ Any as indicated
Modalities	Modalities
<ul style="list-style-type: none"> ➤ Any as indicated 	<ul style="list-style-type: none"> ➤ Any as indicated
Goals	Goals
<ul style="list-style-type: none"> ➤ 4+/5 strength with manual testing by week 10 ➤ Good stability at the hip and knee joints particularly with single leg balance and control of terminal knee extension ➤ May complete independent HEP and intermittent appointments when above criteria is met 	<ul style="list-style-type: none"> ➤ Minimal to no pain ➤ 5/5 muscle strength ➤ Discharge to full work or sport

References

1. Patrick McCulloch, Hugh L. Jones, Kendall Hamilton, Michael Hogen, Jonathan Gold, Philip Noble. Does simulated walking cause gapping of meniscal repairs? Journal of Experimental Orthopaedics (2016) 3:11
2. VanderHave, K.L., Perkins, C., Le, M. Weight Bearing Versus Non-weight bearing After Meniscal Repair. *Sports Health* 2015; 7(5).
3. Mueller, B.T., Moulton, S.G., O'Brien, L., LaPrade, R.F. Rehabilitation Following Meniscal Root Repair: A Clinical Commentary. *Journal of Orthopaedic & Sports Physical Therapy.* 2016; 46(2): 104-113.
4. Stuart, A.R., Doble, J., Presson, A.P., Kubiak, E.N. Anatomic landmarks facilitate predictable partial lower limb loading during aquatic weight bearing. *Current Orthopaedic Practice.* 2015 ; 26(4): 414-419.