Delaware Physical Therapy Clinic

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Rehabilitation Practice Guidelines for:

Medial Patellofemoral Ligament (MPFL) Reconstruction and Proximal Realignment

Assumptions	1) Soft tissue healing (4-6 weeks) for VMO advancement (proximal realignment) to graft 2) Tendon bone healing (12 weeks) graft to bony attachments
Primary surgery:	1) Reconstruction of the Medial Patellofemoral Ligament using semitendinosus autograft, with VMO advancement and limited lateral release
Secondary surgeries:	1) Distal Realignment 2) Patellar/Trochlear Chondroplasty
Considerations:	▪ Hinged knee brace can be used for sitting but is locked during ambulation if lag with SLR exists ▪ During MVICs and Burst testing, patella taped or braced medially
Expected # of visits:	24-36
If Pre-Operative PT:	Education on post-operative home exercise program (HEP), physician precautions, and expected return to ADLs, work, and play

Precautions and other Considerations	
Precautions	▪ WBAT with Immobilizer locked in full extension for 4 weeks, progressing to functional brace ▪ No NMES over the VMO (Protect suture repair if VMO Advancement) ▪ Perform protected electrical stimulation program at 30 degrees until (patella engaged and taped medially) ▪ No MVIC test until 12 weeks ▪ No BURST test until 16 weeks (protect graft to bone healing & VMO advancement)
Surgery Modified Rehab	▪ Addition of distal realignment ○ MVIC at 16 weeks ○ Burst at 20 weeks with patella taped at 60 degrees ○ Consider recommended milestones of Proximal-Distal Realignment ▪ Chondroplasty ○ MVICs conducted at position sparring soft tissue repair and pain by compression of patella
Other Considerations	▪ No burst until at least 16 weeks post op ▪ Hop Testing at 20 weeks ▪ Full return to ADLs expected in 5-6 months ▪ Running progression can be initiated when quadriceps index ≥ 80%, ROM is full and patient is ≥ 16 weeks post-op ▪ Graded Return to Sport activities with QI> 90%, KOS >90%, Hop Tests > 90%, full and pain free ROM/ ADLs after 9 months and MD approval

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MPFL Reconstruction and Proximal Realignment Rehabilitation Protocol

Timeline	Treatment	Milestones
Week 1-2: Early Post-op Phase No restrictions on passive knee ROM Total Visits: 1-3 1-3x/week	▪ Initiate physician specific HEP for ROM ▪ **Effusion management:** Compression, elevation, AROM ankle pumps, Cryocuff ▪ **Regain active quadriceps activation:** Quad Sets 100x daily. SLR in immobilizer with quad set ▪ **Protected Electrical Stimulation Program** ○ Knee stabilized isometrically at 30 degrees knee flexion ○ Patella taped medially ○ Electrodes over proximal and distal quad, not VMO ○ 10 sec. on/50 sec. off ○ 10 to 15 contractions	▪ Active quadriceps contraction with superior patellar glide expect a quad lag ▪ Full passive knee extension, flexion to 90 degrees ▪ WBAT in immobilizer at 0 degrees (use crutches until safe without, while observing effusion)
Weeks 3-4: Initial Post-op Rehab Total Visits: 8-12 2-3x/week	▪ **Progress Flexion AAROM:** Maintain/ Improve patellar mobility (clinic and HEP avoiding lateral glide) ▪ **Emphasize Extension Strengthening:** Multi directional SLR without lag with ankle cuff weights ▪ **Ankle and Hip PREs in Open Chain:** Side-lying Hip ABD, Clam shell, Hip extension, Ankle Theraband exercises ▪ **Prevent lateral scarring:** Include ITB stretching in clinic and home, medial tilt patella mobilizations ▪ **Modalities**: for pain control PRN, Desensitization when healed	▪ SLR without quad lag by week 2 ▪ PROM knee flexion to 120 degrees ▪ Effusion: 1+ or less, near symmetrical extracapsular edema ▪ Normalized gait out of immobilizer with active superior glide by week 4
Weeks 5-6: Intermediate Strengthening Phase Total Visits: 12-18 2-3x/week	▪ **Continue to progress ROM** ▪ **Quadriceps Strengthening:** ○ OKC: SAQ 0-30, SLR ○ CKC: step ups, leg press through controlled range 0-30 degrees ▪ **Ambulate in immobilizer until SLR (-) Lag:** Initiate gait training outside immobilizer	▪ Full PROM Extension ▪ PROM knee flexion to within 10 degrees of contralateral ▪ Effusion/ Edema resolving
Weeks 7-8 Progressive Stability Phase Total Visits: 14-24 2-3x/week	▪ Progress Quadriceps strengthening ROM from 0- 60 degrees in open and closed chain, with good tibiofemoral alignment. ▪ Begin unilateral balance exercise progression ▪ **Electrical Stimulation Program:** ○ Each visit progress Kin Composition by 5 degrees during NMES towards 60 degrees	▪ Normal patellar mobility ▪ KOS> 60%
Weeks 9-12 Functional Progression Phase	▪ Progress opening chain strengthening at appropriate intensity through progressively increased ROM ▪ Initiate hamstring strengthening PRN at 12 weeks (if graft site) ▪ **Progress proprioceptive exercises:** (Multi directional contralateral LE reaching, mini lunges, rocker board balance). ▪ MVIC at 12 weeks at 60 degrees with patella taped medially ▪ Transfer to fitness facility at 12 weeks if milestones met	▪ Full Pain free PROM maintained ▪ MVIC > 80% at **12 weeks** ▪ KOS/ GRS > 80% ▪ Effusion less than 1+
Weeks 13-16: Return to Activity Phase Frequency: 1x/week + Fitness Facility	▪ **Recheck strength via BURST test at 16 weeks at 60 degrees with patella taped medially** ▪ Running progression at week 16 ▪ Initiate sports specific plyometric training: agilities at 20 weeks with monthly follow ups for HEP and RTS progression. ▪ **Monthly rechecks indicated for strength testing**	▪ KOS/GRS > 90% ▪ Effusion/ Edema Symmetrical ▪ QI >80% at **16 weeks** via Burst Testing ▪ Burst and Hop Test at **20 weeks** if impairments resolved and strength values met

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References

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