MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION-FULKERSON PROCEDURE CLINICAL PRACTICE GUIDELINE

Rehabilitation Precautions: *All restrictions and/or precautions will be set by the referring surgeon, based upon the stability of the repair and procedure performed. All precautions are subject to change per physician.*

General Precautions

- WBAT in immobilizer first 4 weeks (and/or until no quad lag) May unlock with sitting
- Perform protected electrical stimulation program if warranted
- Patella Mobilizations: Passive superior glide and lateral to medial glide only until 6 wk
- No isolated hamstring strengthening if autograft used
- No OKC quadriceps strengthening for 6 weeks

Considerations:

- Edema/swelling control
- Scar massage
- Ankle, core, hip abduction and external rotation strength
- IT-Band stretch for tight lateral retinaculum
- Evaluate for excessive pronation of feet
- Patella taping only to exercise without pain (if needed)
- Hamstring/gastroc stretches

Post-Operative-2 weeks

Gait	• WBAT locked in extension at 0 degrees @4 weeks
ROM	• Patella Glides Superior and medial • No lateral patella glide • 0-60 degrees AAROM only • Heel slides (0-60 degrees) AAROM • IT-Band stretch and soft tissue work
Strengthening	• Quad sets • Glute Sets • SLR in Flexion, Abduction (Use brace if extensor lag in flexion) • NMES to quad
Goals to progress to next phase	1. Full active quadriceps contraction with superior patellar glide 2. Full passive knee extension **3.** WBAT in immobilizer (use crutches until safe without)

Weeks 2-4

Gait	• WBAT locked in extension at 0 degrees (0-4 weeks)
ROM	• 0-90 degrees AAROM/AROM • Bike with **NO Resistance** • Patella mobs with emphasis on superior/inferior glides
Strengthening	• Continue weeks 0-2 • Quad set progression (i.e. prone QS, supine, TKE) • SLR flexion, abduction, adduction, extension (in brace if quad lag) • NMES to quad
Goals To Progress to Next Phase	**1.** ROM to equal 0-90 degrees

Weeks 4-6

Gait	• Hinged brace max 90 degrees flex with WBAT—Normalize gait
ROM	• 0-120 degrees AROM • Patella Mobs
Strengthening	• Bike-light resistance • Closed-chain ex (TKE, calf press, lateral step ups, side-stepping, etc.) ○ Wall squats/partial leg press (0-60 degrees)
Aerobic	• Treadmill (walking progress with speed and incline-6 weeks post op)

Weeks 6-10

Gait	• Discharge brace if no quad lag and normal gait
Strengthening/ Dynamic Control	• Begin mild to moderate resistive quad exercise in protected range • Initiate proprioception/coordination/stability • Forward plyometrics • Hamstring PRE's (week 8)

Weeks 10-16

Strengthening/ Dynamic Control/ Functional Activities	• Progress OKC and CKC quad strengthening
	• Progress core and hip strengthening
	• Functional agilities-progressing to sport specific drills
	• Initiate walk to jog progression (when quadriceps index ≥ 80%, ROM is full, and pt is ≥ 12 weeks post op) if:
	  ○ Full active knee extension
	  ○ Normal landing mechanics
	  ○ Strength to 80% of uninvolved side

Goals to Progress to Next Phase	1. No reactive effusion or instability with sport-specific exercise 2. Good strength with functional and isokinetic testing (Within 15% of uninvolved side) 3. Achieve MCID on patient self-report (LEFS, IKDC, etc.)

Week 16

ROM	• Maintain ROM equal to uninvolved

Strengthening	• Emphasize performance of the quadriceps, hamstrings and trunk dynamic stability
	• Emphasize muscle power generation and absorption
	• Focus on activities that challenge muscle demand in intensity, frequency, and duration of activity
	• Emphasize sport- and position-specific activities
	• Consider:
	  o Double leg and single leg activities and transitions
	  o Vary planes of movement and change of direction
	  o Perturbations and alter support surface (indoor and outdoor)
	  o Challenge multiple muscle groups (lower extremity and core) simultaneously
	• Examples:
	  o Weight lifting: squats, leg extension, leg curl, leg press, deadlifts
	  o Lunges-forward, backward, rotational, side
	  o Rotational trunk exercises on static and dynamic surfaces
	  o Unilateral shuttle jumping with increasing resistance and mid-air rotations

Return to Sport Activities	• Emphasize appropriate symmetry in weight-bearing, joint loading and technique during performance of all therapeutic activities and plyometrics. • Emphasize sport- and position-specific activities o Add ball, racquet, stick

	Consider
	  o Impact loading and appropriate attenuation strategy, cue regarding "hard" landings
	  o Double leg and single leg activities and transitions
	  o Vary planes of movement and change of direction
	
	Examples
	  o Single-leg hop downs from increasing height (up to 12" box)
	  o Single-leg hop-holds (stable surface à Airex pad)
	  o Double and single-leg hopping onto unstable surface (i.e. Airex pad) Tuck jumps (focus on increasing multi-joint flexion during landing and holding stable position)
	  o 90º to 180º jumps
	
	• Begin agility exercises between 50-75% (utilize visual feedback to improve mechanics)
	  o Side shuffling
	  o Hopping
	  o Carioca
	  o Figure 8
	  o Zig-zags
	  o Resisted jogging (Sports Cord) in straight planes, etc
	  o Back pedaling

Goals to Progress to Independent Program	**Functional Test** o Single leg and 3 cross-over hop test for distance (within 15% of uninvolved limb) **Isokinetic Testing** o ≤10% deficit in isokinetic peak torque with knee extension and knee flexion (60º/sec, and 300º/sec) compared to uninvolved limb o Quadriceps to hamstring isokinetic strength ratio ≥ 60% **Complete sport-specific drills without compensatory movements, exacerbation of symptoms or reactive effusion**