ACL Reconstruction

Postoperative Therapy Plan

Date of Surgery: _____

Details of Surgery: _____

- **Graft Type: _____**
- **Secondary Procedures: _____**

Surgeon: _____

Next Follow Up with MD/PA: _____

Additional Info: _____

<u>Restrictions/Precautions</u>:

WB Precautions:

- **Crutch assisted WBAT until cleared by PT to discontinue crutches.**

Other Precautions:

- **If LET procedure, brace locked into extension until sufficient quad control.**
- **If hamstring autograft, avoid isolated hamstring isotonic resistance exercises until 8 weeks postop.**

Important Notes:

1. Weeks and months are designated in their relationship to the postoperative timeline in the grids below (e.g. Week 1 indicates postoperative days 0-7).
2. If a precaution/restriction is listed x 4 weeks it indicates **a full 4 weeks**, so it is lifted after day 28.
3. Notes above supersede any notes in the grid below, as they indicate the surgeon's preferences for this individual patient and the circumstances of their surgery.

Phase 1: Acute Postop (Weeks 1+2)	
PRECAUTIONS + Considerations	• **<u>If LET procedure</u>**, brace locked into extension until sufficient quad control. • **<u>If HS autograft</u>**, no isotonic resisted HS load x 8 weeks • Consider other concomitant procedures if applicable • If struggling to achieve symmetric extension, consider discussion with surgeon • No resisted OKC knee extension from 45°-0° knee flexion x 8 weeks
Rehab Focus	• Graft protection • Pain and swelling management • Tibiofemoral and patellofemoral mobility • Progressive weight bearing to full • Quad activation • Gait normalization • Patient education + expectation setting
Interventions to Consider	<u>Pain and swelling:</u> - Ice, compression, elevation - Ankle pumps <u>Mobility</u>: - PROM of knee into flexion and extension, attention to hyperextension - AA/AROM into flexion and extension - Low intensity, long duration stretches (eg. heel prop) - Patellar mobilization - Bike without resistance <u>Strength/Activation</u>: - Quad sets progressing to SLR without lag - NMES - BFR encouraged if appropriate - DL mini squats - Proximal (hip + core) strengthening <u>Gait</u>: - Symmetric loading without compensation or obvious gait deviation - Attention to TKE integration into gait, ample swing limb clearance - Proprioception: Progress toward single leg static stance
Criteria for Progression to Phase 2: ____ AROM ≥ 0-90° ____ SLR without extension lag **Important Milestones:** ____ Symmetric passive extension ____ SL stance x 10 sec ____ WNL gait without assistive device	

Phase 2: Subacute Postop (Weeks 3-5)

PRECAUTIONS + Considerations	• No isotonic resisted HS load x 8 weeks if HS autograft • Consider other concomitant procedures if applicable • If struggling to achieve symmetric extension, consider discussion with surgeon • No resisted OKC knee extension from 45°-0° knee flexion x 8 weeks • Graft strength is **decreasing** during this period
Rehab Focus	• Graft protection • Restore/maintain full ROM • Quad endurance • Proprioception • Proximal strength/endurance
Interventions to Consider *Continue previous interventions as appropriate*	Mobility: - Continued attention to knee hyperextension - Progressive knee flexion toward symmetrical as tolerated Strength + Endurance: - BFR encouraged if appropriate, attention to quad engagement/endurance - Progress squat depth to 90° as tolerated - Progress proximal (hip + core) strength/endurance - SL step ups Neuromuscular Re-Education: - Proprioception + single leg stability: ○ Progress to include vestibular/visual challenges, stable to unstable surfaces as appropriate - Early neurocognitive training Gait: - Initiation of reciprocal stair climbing Cardio: - Progress bike duration, add gentle resistance - Initiation of swimming or pool walk/jog if incisions fully closed - Elliptical if desired
Criteria for Progression to Phase 3: ____ Symmetric extension AROM ____ SLR x 20 without extension lag **Important Milestones:** ____ Flexion AROM within 80% of uninvolved ____ Pain free DL squat to 60° with symmetric loading	

Phase 3: Late Postop (Weeks 6-8)

PRECAUTIONS + Considerations	• Consider other concomitant procedures if applicable • If struggling to achieve symmetric extension, consider discussion with surgeon • No resisted OKC knee extension from 45°-0° knee flexion x 8 weeks • Graft is **WEAKEST** during this phase
Rehab Focus	• Graft protection • Functional movement optimization • Foundations strength + fitness • Neuromuscular control + endurance
Interventions to Consider *Continue previous interventions as appropriate*	Mobility: - Knee ROM normalized - Work toward CKC ankle dorsiflexion > 35° or within 5° of limb symmetry Strength: - PREs for LE strengthening - Can initiate open chain sub max resisted quad strengthening (90°-45°) - Progress SL CKC loading with attention to mechanics Neuromuscular Re-Education: - Proprioception + single leg stability: o Progress to include ball tosses, neurocognitive challenges as appropriate - **Week 8:** Initiate submax DL sagittal plane plyometrics if patient demonstrates adequate strength, control, mechanics Cardio: - Continued cycling, swimming, elliptical

Criteria for Progression to Phase 4:

____ Maintain symmetric extension ROM
____ Minimal to no joint effusion with activity
____ Pain free DL squat to 90° with optimal mechanics

Important Milestones:

____ Flexion AROM within 90% of uninvolved
____ SL stance x 60 sec without LOB
____ Pain free SL squat to 30° with optimal mechanics

Phase 4: Progressive Functional (Weeks 9-12)	
PRECAUTIONS + Considerations	• Movements should remain primarily in sagittal plane • Graft still in proliferation/vascularization stage
Rehab Focus	• SL strength + endurance • Eccentric control • Light impact acceptance + mechanics

Interventions to Consider
 	
Continue previous interventions as appropriate
	<u>Strength</u>:
	- Continued progression of quad, hamstring, proximal strength + control
	- Increased emphasis on SL loading
	
	<u>Functional Training</u>:
	- Continue SL stability progression:
	  o Reaches outside of BOS, ball tosses, neurocognitive challenges as appropriate
	- Initiate submax hop progression with attention to mechanics:
	  o DL symmetric > DL asymmetric > SL hop
	
	<u>Cardio</u>:
	- Continued cycling, swimming, elliptical

Criteria for Progression to Phase 5: ____ SL squat x 10 with optimal mechanics ____ LQYBT composite ≥ 75% **Important Milestones:** ____ Knee Flexion ROM within 5° of uninvolved ____ HS and Quad strength ≥ 75% LSI ***HS strength may not recover as quickly if HS autograft, quad strength may not recover as quickly if quad autograft** ____ Optimal mechanics with SL hopping in place x 30	

Phase 5: Sport Specific Prep (Months 3-5)	
Rehab Focus	• Strength progression • Power development, plyometric progression and mechanics • Multidirectional movement control

Interventions to Consider
 	
Continue previous interventions as appropriate
	<u>Strength</u>:
	- Continued progression of quad, hamstring, proximal strength + control
	- SL strength and stability with increased load
	
	<u>Power + Plyometrics:</u> with attention to mechanics:
	- Moderate intensity
	- Progress power & eccentric control
	- Progress speed of force generation
	
	<u>Sport Specific Prep</u>:
	- Increase difficulty of neurocognitive tasks
	- Initiate running progression if:
	  - Quad strength: ≥ 70% LSI
	  - Optimal mechanics with SL hopping in place x 1 min
	  - 30+ SL squat in 1 min to 30°-45° knee flexion with optimal mechanics
	  - WNL running mechanics in in clinic trial
	- **Month 5:** Initiate deceleration activities, lateral hops with optimal mechanics

	Cardio: - Continued cycling, swimming, elliptical - Initiate progressive return to run program as appropriate
Criteria for Progression to Phase 6: ____ HS & Quad Strength ≥ 80% LSI ____ LQYBT asymmetry < 6 cm (A, PL, & PM) & ≥ 90% Composite ____ Good tolerance & optimal mechanics with DL and SL hopping **Important Milestones:** ____ Quad strength >70% BW ____ HS strength >50% BW	

Phase 6: Progressive Sport Specific (Months 6-8)	
Rehab Focus	• Optimize physical performance, power, and capacity • Sport specific movements and patterns
Interventions to Consider *Continue previous interventions as appropriate*	Strength: - Continued progression of quad, hamstring, proximal strength + control - Functional loaded strengthening progressions Sport Specific: - Power progression - Controlled multiplanar movements and hops with optimal mechanics - Initiate controlled pivoting and cutting - Continued progression of neurocognitive tasks Cardio: - Continued cycling, swimming, elliptical, running
Criteria for Progression to Phase 7: ____ Hop Testing LSI >90% ____ HS and Quad strength LSI >90% ____ Optimal mechanics with plyometrics, pivoting **Important Milestones:** ____ Conduct ACL-RSI and discuss with patient their specific deficits and their sport specific concerns	

Phase 7: Return to Sport Prep (Months 9-12)	
Rehab Focus	• Symmetrical strength and power • Optimal biomechanics with sport specific activities • Patient confidence in return to sport

Interventions to Consider *Continue previous interventions as appropriate*	Strength: - Continued progression of quad, hamstring, proximal strength + control - Functional loaded strengthening progressions Sport Specific: - High intensity sport specific movement re-training, sport specific drills - Power and plyometric under fatigued conditions, neurocognitive demands Cardio: - Continued cycling, swimming, elliptical, running

Criteria for Return to Sport: See SLHS Return to Sport Testing Protocol

____ LQYBT composite ≥ 95%
____ Hop Testing LSI ≥ 95%
____ Quad and Hamstring LSI ≥ 95%
____ Hamstring to Quad ratio ≥ 67%
____ Quad Torque ≥ 3Nm/Kg
____ ACL- RSI ≥ 77

Follow up with surgeon regarding official return to sport status. Most literature indicates that 12 months postop is the optimal timeline for return to sport.