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ACL RECONSTRUCTION [BTB OR QUADRICEPS TENDON AUTOGRAFT]
REHABILITATION PROTOCOL

PATIENT NAME:

DATE OF SURGERY:

BODY PART/SIDE:

IMPORTANT ITEMS:

- 1 Brace to be worn at all times **LOCKED IN EXTENSION** [including when sleeping] until 1st post-op visit [10-14 days]; Can be removed for hygiene and exercises
- 2 Brace can be removed for **SLEEPING ONLY** after 1st post-op visit.
- 3 Discontinue brace *no sooner* than **4 WEEKS POST-OP** once patient can perform straight leg raise **WITHOUT** extension lag

PHASE I PRECAUTIONS

- Weightbearing as tolerated with crutches

PHASE I [0-2 WEEKS]	
ROM	STRENGTH
Begin passive, active-assisted, and active ROM	Active-assisted and active heel slides
Emphasize regaining FULL EXTENSION	Supine knee extension with heel prop or towel roll
Initiate gastroc/soleus stretching	Seated assisted knee flexion to 90°
	Quad sets
	Patellar mobilizations [medial, lateral, proximal, distal]
	SLR with brace locked in extension [until quad strength prevents extension lag]

GOALS TO PROGRESS TO PHASE II

- Pain and inflammation controlled
- Protect graft fixation
- Ensure wound healing
- Prevent blood pooling/blood clot
- Knee flexion > 70°, maintain full extension

PHASE II [2-6 WEEKS]	
ROM	STRENGTH
Progress phase I ROM	Progress phase I exercises
	Begin stationary bike [no resistance; higher than normal seat, progress to lower seat to increase ROM]
Begin prone hangs to promote knee extension	Progress SLR without brace; monitor for extension lag
	Side-lying hip abduction

GOALS TO PROGRESS TO PHASE III

- Able to perform active SLR without extension lag
- Knee flexion to at least 120°
- Discontinue postoperative knee brace at **6 WEEKS POST-OP**

PHASE III [6-12 WEEKS]	
ROM	STRENGTH
Maximize ROM	Progress phase II exercises
	Increase stationary bike resistance
	Begin wall slides and leg press [limit 45°]
	Begin step-up/step-down at 2" [gradually progress height as tolerated]
	3-way hip with progressive resistance [flexion, abduction, adduction]
	Begin hamstring curls with progressive resistance
	Initiate treadmill walking with emphasis on normalizing gait pattern

***Aquatic program to include pool running and flutter kick can begin at **6 WEEKS POST-OP** [**NO** breaststroke]*

GOALS TO PROGRESS TO PHASE IV

- FULL**, pain-free ROM
- Normal gait

PHASE IV [12-16 WEEKS]	
ROM	STRENGTH
Full, unrestricted ROM	Progress to single leg wall slides and leg press [limit 90°]
	Advance closed-chain strengthening
	Progress balance/proprioception activities
	Begin Stairmaster and elliptical trainer
	Initiate running progression [straight-ahead only]

***If patient received functional brace, they can wear it for jogging and proprioception activities*

GOALS TO PROGRESS TO PHASE V

- NO** quadriceps atrophy
- Progress strength and balance
- Improve endurance

PHASE V [16-24 WEEKS]	
ROM	STRENGTH
Full, unrestricted ROM	Begin jumping progression
	Advance running progression at 20 WEEKS POST-OP [sprinting, backwards running, cutting/pivoting/changing direction]
	Initiate plyometric program* and sport-specific drills

GOALS TO PROGRESS TO PHASE VI

- Requires clearance from **SURGEON**
- Symmetric thigh musculature and performance within 10% of uninvolved limb

PHASE VI [>6 MONTHS]	
ROM	STRENGTH
Full, unrestricted ROM	Gradual return to sports participation after completion of RTP**
	Progress running and agility program
	Sport-specific training can begin once agility drills mastered

*PLYOMETRIC TRAINING PROGRAM RECOMMENDATIONS	
12-16 WEEKS	Double-leg hops [advance to 30 reps]
16-20 WEEKS	Add alternating single-leg hop [advance to 15 reps each foot]
	Add double-leg hops [forward, side-to-side, back] advancing to 10 reps each; distance 6" to 12"
20-26 WEEKS	Add single-leg hop [advance to 10 reps]
	Increase distance of double-leg forward hop as tolerated
	Add triple hop
26-36 WEEKS	<i>If appropriate for desired sport or activities</i>
	Add double-leg rotational hops [90° turn midair, advance to 5 reps]
	Progress double-leg rotational hops [180° turn midair, advance to 5 reps]

*RUNNING AND AGILITY DRILL PROGRESSION RECOMMENDATIONS	
<i>**May jog on any surface as tolerated, gradually increasing distance and speed</i>	
Non-linear running [zig-zag, backwards, carioca each side for 50 yards each]	Start with "walk-through" at <1% max effort
	Increase 10% effort each session as tolerated
Agility drills begin once non-linear running mastered [shuttle run, box drill, weaves]	Start with "walk-through" at <1% max effort
	Increase 10% effort each session as tolerated
Sport specific training/practice once agility drills mastered	Start with "walk-through" at <1% max effort
	Increase 10% effort each session as tolerated

RETURN TO SPORT CRITERIA

- Requires clearance from **SURGEON**
- Return to play testing [RTP] recommended for competitive athletes intending to return to sport at 22-24 weeks**
- FULL, PAINFREE** function **WITHOUT** signs of instability
- FULL** return to contact sports **ANTICIPATED** at 9-12 **MONTHS**

GENERAL TIMEFRAME FOR TYPICAL RETURN TO SPORT

- 14 WEEKS POST-OP JOGGING**
- 5 MONTHS POST-OP GOLFING**
- 7 MONTHS POST-OP SKIING**

RETURN TO PRACTICE FOR ALL OTHER SPORTS

9 MONTHS POST-OP *FULL RETURN TO SPORTS, INCLUDING CONTACT*