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ACL RECONSTRUCTION PROTOCOL

(* if a mensical repair is also performed, flexion should be limited to <90 degrees until 6 weeks post-op)

PHASE	GOAL	EXERCISE/METHODS
Phase 1	Decrease swelling	Cold therapy with elevation (10-15 min)
Preoperative	Restore full terminal knee extension and flexion	Extension: prone hangs or heel props (7-10 min) Flexion: wall slides, heel slides, active assist flexion
	Normalize gait	Weight bearing as tolerated with brace Treadmill: forward/backward (5-10 min)
	Normalize strength	Closed chain: leg press, total gym (10-50 deg), toe raises Open chain: Quad machine (90-30 deg), hamstring machine 4-way SLR. All exercises 3-5 sets, 12-15 reps Electrical stimulation for VMO PRN
	Maintain aerobic fitness	Low-impact activities (bike, treadmill walking)
	Home program	Ice/elevation: 20 min on/60 min off Passive extension/flexion activities Lower extremity strengthening as indicated All activities 3-4 times/day or as indicated
Phase 2	Control swelling	Ace wrap with elevation-ankle pumps (20 min)
Postoperative	Restore full terminal knee extension and flexion to 90	Extension: heel props (7-10 min) Flexion: heel slides (7-10 min) *avoid prolonged lying with pillow under knee*
7-14 Days	Control swelling	Ace wrap with elevation-ankle pumps (20 min)
		Treadmill: forward/backward (5-10 min) Calf, hamstring, hip flexor stretching (3 times, 30 sec hold) *emphasize heel to toe gait*

	Normalize gait	Weight bearing as tolerated with brace locked in full extension
	Increase strength	4-way SLR, quad sets, multi-angle isometrics (0-45-90 deg) Electrical muscle stimulation PRN (15 min) Partial squat (10-40 deg), toe raises with assistance PRN All exercises 3-5 sets, 12-15 reps Total Gym Level 1-3
	Home program	Ice/elevation: 20 min on/60 min off Passive extension/flexion activities Lower extremity strengthening as indicated All activities 3-4 times/day or as indicated *avoid prolonged lying with pillow under knee*
Phase 3 Postoperative Weeks 2-5	Control swelling	Ice PRN. Ace wrap PRN.
	Full passive knee extension and flexion (0-125 by 4 wks)(*if meniscus repaired) flexion should be <90)	Extension: prone hangs or heel props (7-10) Flexion: wall slides, heel slides, active assist flexion, bike (7-10 min)
	Normal ambulation	Treadmill: forward/backward (5-10 min) Increase grade with treadmill as tolerated Calf, hamstring, hip flexor stretching (3 times 30 sec hold)
	Pain-free strengthening	Closed chain: leg press (10-50), Total gym level (4-5) Push FROM without pain hamstring stretch, 4-way SLR, Toe raises, step ups, mini squats All exercises 3-5 sets, 12-15 reps *Implement within painfree ROM once normal gait and effusion control are achieved HS curls start at – 2 weeks for bone–patella–bone grafts and 4 weeks for HS grafts.
	Initiate proprioception exercises (pain-free)	*BAPS (start with ball 1 sitting and progress to standing - 3-4 min) *Double leg stand with rebounder *Single leg stance/grid exercises (lunges, reaches) with eyes open/eyes closed *Standing 4-way hip theratubing exercises *Lateral treadmill walking both directions *Implement once patient is able to ambulate normally without pain (3-5 min)
Phase 4 Postoperative Week 6-12	Criteria for progression to Phase 5 No effusion, painless full ROM, minimal crepitus. Score greater than 80 On Lysholm with no locking or instability	
	Improve aerobic level of fitness	Painfree low impact activity (bike, treadmill walking, stepper on own) 3-4 times per week, 20-30 minutes
	Improve proprioception	Trampoline hopping bilaterally progressing To jogging, then single leg hopping (10 min) Fitter with ski poles progressing to no ski poles (7-10 minutes) BAPS – single leg

		Body blade Proprioceptive Star Exercises [8-12 weeks] *Week 10 – Light double leg hopping (multi-directional), lateral shuffles *Only if all previous activities were completed without pain or increased swelling
	Improve Strength	Total gym level 8-10 without pain, leg press (10-50), toe raises, step ups Hamstring machine, 4-way SLR All exercises 3-5 sets, 12-15 reps Mini squats, Partial lunges, single-leg toe raise
Phase 6 Postoperative Week 13-24	Criteria for progression to Phase 6 no effusion, painless full ROM, minimal crepitus. Score great than 90 on Lysholm with no locking or instability Ratio of 80% involved to uninjured on isokinetic test at 6 months post-op Ratio of 80% on one-legged jump	
	Improve aerobic level of fitness (Usually 3-4 months)	Painfree low impact activity (bike, treadmill Walking, stepper on own) 3-4 times per Week, 20-30 minutes
	Improve strength	Closed chain: leg press (10-50 deg), Toe raises. Total gym level 8-10 without Pain. Open chain: Quad machine (90-30 deg), Hamstring machine All exercise's 3 sets 15-20 each
	Implement running program if indicated	Walk/jog cycles 3-5 min warm-up (walk) *10-30 sec jog/60 sec walk for 10-20 min 3-5 min cool-down (walk) *increase jog time and decrease walk time based upon patient response.
	Implement sport specific activity	*Progression program of strength training And agility/speed drills *Program should be based upon specific patient needs.