

PCL REPAIR

POST OPERATIVE PROTOCOL

	Time Frame (Weeks)	Guidelines	Goals
PHASE I	0 to 2	CRUTCHES: TTWB or PWB x 2 weeks per MD orders BRACE: Locked 0/0 knee extension for 6 weeks EXERCISE PROGRESSION <ul style="list-style-type: none"> Gait training Flexion: <ul style="list-style-type: none"> No ROM week 0-1 Week 1-2 PROM in prone 0-60 Quad sets using NMES PRN: towel placed behind tibia Standing OKC multi-plane straight leg raises (in brace) RECOMMENDED LOAD <ul style="list-style-type: none"> Short but freq bouts of ROM, quad activation 3+x/day 	<ul style="list-style-type: none"> Reduce pain and inflammation Minimize scar tissue formation Normalize patella mobility with manual mobilizations Achieve full extension ROM Facilitate quadriceps activation Protect against posterior translation of tibia to minimize stress on graft Maintain health of cartilage and stimulate bone tunnel healing Maximize prone exercise; place towel roll under proximal tibia while supine
	2 to 6	CRUTCHES: WBAT BRACE: Locked 0/0 knee extension x 6 weeks EXERCISE PROGRESSION <ul style="list-style-type: none"> Continue with phase I program Flexion: PROM 0 to 90; prone <u>passive</u> or anterior directed force behind tibia for heel slide SAQ-bolster distal to knee Multi-angle submaximal quad isometrics (90/60/30) SLR, hip abduction (brace on until no extensor lag) Standing heel raises Proprioception training Initiate basic core activation: TVA and pelvic tilts RECOMMENDED LOAD <ul style="list-style-type: none"> Short but frequent bouts of ROM, quad activation 3x/day 	<ul style="list-style-type: none"> Continue to emphasize full knee extension Good quadriceps control with no extension lag in standing 90° of knee flexion
		CRITERIA FOR PROGRESSION (must be met before progression into Phase II) <ol style="list-style-type: none"> Minimal swelling Full knee extension SLR with no extensor lag and good quad control Single leg stance x 30 seconds 	
PHASE II	6 to 12	BRACE: Gradually open brace as quad strength and ROM allow from week 6-8 then D/C brace EXERCISE PROGRESSION <ul style="list-style-type: none"> Flexion: increasing to full as tolerated, including active knee flexion with no resistance Full passive and active knee extension, terminal knee extension *resistance below knee Submaximal hamstring sets *CKC only for co-contraction Mini squats, wall slides, double leg leg press beginning 0-45 degrees with gradual increase in depth Step-up progression w/ gradual increase in height and directions Multi-plane open & closed kinetic chain hip strengthening Progress to unilateral heel raise off the floor, then off step Proprioception drills Continue core program with dead bug progression 	<ul style="list-style-type: none"> Full knee extension Gradual progression to full flexion Normalize patellofemoral joint and scar mobility Normalize gait

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PHASE II (CONTINUED)	6-12	CARDIOVASCULAR EXERCISE <ul style="list-style-type: none"> • Stationary biking *foot placed forward on pedal without use of toe clips to minimize hamstring activity; seat set slightly higher than normal • Pool walking • Treadmill/outdoor walking, focus on proper gait mechanics RECOMMENDED LOAD <ul style="list-style-type: none"> • ROM: 2-3x/day • Strength: 1x/day open chain; 3x/week closed chain • Cardiovascular: 20-30 minutes/day low/moderate intensity 	<ul style="list-style-type: none"> • Full knee extension • Gradual progression to full flexion • Normalize patellofemoral joint and scar mobility • Normalize gait
		CRITERIA FOR PROGRESSION (must be met before progression into Phase III) <ol style="list-style-type: none"> 1. Minimal swelling 2. Full knee extension 3. At least 120 degrees knee flexion 4. Normalized and pain-free walking pattern without AD 5. Proper form and control with double leg squats 	
PHASE III	12 to 24+	MOVEMENT PREP <ul style="list-style-type: none"> • Foam roller • Controlled movement series EXERCISE PROGRESSION <ul style="list-style-type: none"> • Squat progression • CKC global LE strengthening: Leg press, double leg dead lift/RDLs • Weighted single leg calf raises • Split squat / lunge / single leg squat progression (i.e. – lateral dips, retro, walk and split) • Monster walks • Progressive balance work with dynamic activities and more challenging surfaces • Resisted OKC hamstring strengthening Week 16 (*hold until 20-24 weeks for Dr. Dragoo) CORE PROGRAM <ul style="list-style-type: none"> • Front planks • Bridge –double leg progressing to single leg • Side planks • Dead bug progression • Bird-dog CARDIOVASCULAR EXERCISE <ul style="list-style-type: none"> • Stationary biking • Outdoor biking *no clips • Treadmill/outdoor walking, focus on proper gait mechanics • Arc trainer or elliptical • Stadium stair walking • Pool walking RECOMMENDED LOADING <ul style="list-style-type: none"> • ROM: 1-2x/day • Strength: 3x/week with closed chain loading • Cardiovascular: 5x/week, moderate intensity 	<ul style="list-style-type: none"> • Control inflammation with increasing loads • Full knee flexion and extension with terminal stretch • Progressive strengthening • Increase muscular endurance • Limb symmetry with all strength exercises

	Time Frame (Weeks)	Guidelines	Goals
		CRITERIA FOR PROGRESSION (must be met before progression into Phase IV) <ol style="list-style-type: none"> 1) Full Knee Flexion and Extension 2) Y test <4 cm difference 3) Lateral dip x 1 min with proper control at trunk, pelvis, knee, foot & ankle 4) IKDC >7/10 5) Strength test >75% LSI 	
PHASE IV	6-9 mos	MOVEMENT PREP <ul style="list-style-type: none"> • Foam roller • Controlled movement series EXERCISE PROGRESSION <ul style="list-style-type: none"> • Increase loads from phase III • Progress to agilities/plyometric/sport specific activities CARDIOVASCULAR EXERCISE <ul style="list-style-type: none"> • Stationary bike • Arc trainer or elliptical • Swimming • Jogging RUNNING PROGRESSION <ul style="list-style-type: none"> • Higher intensity interval work w/ CV program • Basic —> Advanced ladder series • Walk/jog interval running program • Linear acceleration/deceleration • Sprinting • Change of direction and lateral agility JUMPING PROGRESSION <ul style="list-style-type: none"> • Low amplitude bilateral single response jumps • Bilateral multiple response jumps • Unilateral single response jumps • Unilateral multiple response jumps SPORT SPECIFIC ACTIVITY PROGRESSION <ul style="list-style-type: none"> • Non-contact & non-reactive field progression • Multi-plane sport specific plyometrics program • Multi-plane sport specific agility program • Include hard cutting and pivoting depending on the individuals' goals SPORTS TEST AND RETURN TO FULL ACTIVITY <ul style="list-style-type: none"> • Follow-up examination with physician • Sports test for return to competition: 9-12 MONTHS RECOMMENDED LOADING <ul style="list-style-type: none"> • ROM: global stretching • Strength: 2-3x/week with increasing resistance • Cardiovascular: 20-45 minutes 5x/week. Alternate impact and non-impact days using sound recovery principles CLINICAL PEARLS <ul style="list-style-type: none"> • <i>Non-contact practice</i> → <i>Full practice</i> → <i>Full play</i> 	<ul style="list-style-type: none"> • Increase muscular strength, power and endurance • Reconditioning for sport demands • Correct faulty movement with high level tasks • Emphasize both limbs for injury prevention • IKDC >9/10 • Return to Sports Test @ 9+ months