LAKESHORE
Bone & Joint Institute

Ryan J. Plank, M.D

Sports Medicine, Work-Related Injuries & Conditions,
General Orthopedics, Upper Extremity

Direct Line (219) 250-5017

Posterior Cruciate Ligament Reconstruction Protocol

Name _____**Date** _____

Procedure _____

Procedure Date _____

Frequency 1 2 3 4 5 times/week **Duration** 1 2 3 4 5 6 weeks

Range of motion is an important progression of therapy, but limiting swelling is important. Respecting swelling will decrease pain and improve motion.

	BRACE/ WEIGHT BEARING /ROM GOALS/PRECAUTIONS	**THERAPEUTIC EXERCISES AND INTERVENTIONS**
Phase 1 (Weeks 0 to 4)	Long Brace locked at 0 degrees for all activities (except hygiene and PT). **WBAT** Progress from locked to unlocked when patient has good quadriceps control. Use axillary crutches for normal gait **ROM** Weeks 0-4: range of motion = full extension to 90 degrees flexion. **Extension:** Knee extension on a bolster; avoid prone hangs secondary to hamstring guarding. **Flexion:** use gravity or assistance to minimize hamstring activity, such as supine wall slides or seated knee flexion. **Precautions:** No open chain hamstring strengthening or isolated hamstring exercises. No hamstring stretching. No bike. Follow ROM guidelines. **Goals** Protection of the post-surgical knee Restore normal knee extension Eliminate effusion Restore leg control	Quad sets isometrics Ankle strengthening Straight leg raises (4 way) Heel slides within restrictions Resisted SLR (4 way) standing Patellar Mobilization Stretching NMES (Home use ok) Cryotherapy Open chain knee extension against gravity Leg lifts in standing with brace on for balance and hip strength- avoid hip extension secondary to hamstring restrictions

Phase 2 (Weeks 5-11) Patient may progress to Phase 2 if they have met all the above stated goals and have pain free gait without crutches, no effusion, and knee flexion to 90 degrees.	Discontinue brace over weeks 4-6 as the patient gains leg control and balance. **ROM** Weeks 5-6: ROM= full extension to 120 degrees flexion gradually attain full flexion, avoiding forced flexion. **Flexion:** Continue to avoid active/resistive flexion until week 9 **Precautions** No open chain hamstring strengthening or isolate hamstring exercises. No hamstring stretching. No bike until week 8 OR MODIFY TO AVOID HAMSTRING ACTIVATION. **Goals** Single leg stand control Normalize gait Good control and no pain with functional movements, including step up/down, squat, partial lunge (keeping the knee in less than 60 degrees of knee flexion).	Same as phase 1 plus: Gait training Quadriceps strengthening - closed chain exercises short of 70 degrees of knee flexion Hip and core strengthening Stretching for patient specific muscle imbalances Closed chain toe raises Wall sits, mini-squats, inclined leg press low loads within range restrictions Light hamstring isometrics Bilateral bridge
Phase 3 (Weeks 12-16) Patient may progress to Phase III if they have met all the above stated goals and have normal gain on all surfaces, ability to carry out functional movements without unloading affected leg and without pain, while demonstrating good control. Single leg balance greater than 15 seconds. Full ROM	No Brace **FWB** **Full ROM** Improved gait, balance and strength. **Precautions** No open chain hamstring strengthening or isolated hamstring exercises. **Goals** Good control and no pain with functional movement, including step up/down, squat and lunge. Good control and no pain with light agility and low-impact multi-plane drills.	Same as phase 1 and 2 plus: Open Kinetic Strengthening Hamstrings 0-90 deg., Quadriceps 90-30 deg. Step ups/downs (gradual) Leg Press 70-10 deg. Swimming, Stair climber, elliptical (week 9) Quadriceps strengthening- closed chain (progressing from 1 foot to other and then 1 foot to same foot. Non- impact balance and proprioceptive drills. Impact control exercises beginning with low velocity, single-plane activities and progressing to higher velocity, multi-plane activities. Hip and core strengthening. Stretching for patient specific muscle imbalances.
Phase 4 (Weeks 16-24)	80-100% strength Normal gait, running pattern Normal balance and proprioception	Same as Phase 3 plus: BOSU/disc step-ups/balance Mini-trampoline activities

Patient may progress to Phase IV if they have met all the above stated goals and ability to carry-out multi-plane functional movements without unloading affected leg or pain, while demonstrating good control, and ability to land from a sagittal, frontal and transverse plane leap with good control and balance.	Gradual return to activities/sports **Precautions** Post-activity soreness should resolve within 24 hours. Avoid post-activity swelling. **Goals** Good dynamic neuromuscular control and no pain with sport and work-specific movements, including impact.	Intermittent running program Floor agility ladder Plyometric Functional Test Sport/work specific balance and proprioceptive drills. Progress impact control exercises to reactive strengthening and plyometrics. Continue quadriceps strengthening. Hip and core strengthening Stretching for patient specific muscle imbalances. Replicate sport or work specific energy demands.
Return to sport/work criteria	Dynamic neuromuscular control with multi-plane activities, without instability, pain or swelling. 90% or > in hop tests	

Comments:

FCE _____ Work Conditioning/Work Hardening_____ Teach HEP_____

Every patient's therapy progression will vary to a degree depending on many factors. Please use your best clinical judgment on advancing a patient. If other ideas are considered to improve patient's outcome do not hesitate to call.

Patient's recovery is a team approach: Patient, family/friend support, therapist, and surgeon. Every team member plays an important role in recovery.

Signature_____ **Date** _____