

Noyes Knee Institute Rehabilitation Protocol: LCL, Posterolateral Reconstruction

	Postoperative Weeks					Postop Months			
	1-2	3-4	5-6	7-8	9-12	4	5	6	7-12
<b>Brace:</b> Bivalved cylinder cast Custom medial unloader or hinged soft tissue brace	X	X	X	X	X	X	X	X	X
<b>Range of motion minimum goals:</b> 0°-90° 0°-110° 0°-120° 0°-130°	X	X	X	X	X				
<b>Weight bearing:</b> None Toe touch – 25% body weight 25% to 50% body weight Full, cane support Full	X	X	X	X	X				
<b>Patella mobilization</b>	X	X	X	X					
<b>Modalities:</b> Electrical muscle stimulation Pain/edema management (cryotherapy)	X X	X X	X X	X X	X X	X X	X X	X X	X X
<b>Stretching:</b> Hamstring, gastroc-soleus, iliotibial band, quadriceps	X	X	X	X	X	X	X	X	X
<b>Strengthening:</b> Quad isometrics, straight leg raises Active knee extension Closed-chain: raises, heel raises, wall sits, mini-squats Knee flexion hamstring curls (90°) Knee extension quads (90°-30°) Hip abduction-adduction, multi-hip Leg press (70°-10°) Upper body strength training Core training	X X	X X	X X X	X X X	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X
<b>Balance/proprioceptive training:</b> Weight-shifting, cup walking Balance board Lateral step-ups Resistance band walking, perturbation training, ball toss mini-trampoline				X	X	X X	X X	X X	X X
<b>Conditioning:</b> UBC/UBE Bike (stationary) Aquatic program Swimming (kicking) Walking Stair climbing machine Ski machine Elliptical		X	X X	X X	X X X X	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X
Running: straight									X
Cutting: lateral carioca, figure 8's									X
Plyometric training									X
Full sports									X

## Return to Sports Criteria

Return to sports activities is based on successful completion of the running and agility program and functional training that is required for the sport the patient desires to return to and is approved by the physician and therapist. Many patients will not return to strenuous, high-risk sports after LCL and posterolateral ligament reconstruction.

### 1. Knee examination

- Range of motion: International Knee Documentation Committee (IKDC) rating of normal or nearly normal
- Lateral joint opening: IKDC rating of normal or nearly normal
- External rotation: IKDC rating of normal or nearly normal
- Patella pain: none
- Effusion: none

### 2. Stress radiography (89 N total posterior displacement)

- < 5 mm reconstructed - contralateral knee (if normal)

### 3. Quadriceps and hamstrings muscle strength and endurance tests: < 15% deficit compared with contralateral side for jumping/pivoting/cutting sports and < 20% for running/turning/twisting sports, based on equipment available:

- Isokinetic 180°/sec and 300°/sec
- Isometric portable fixed or hand-held dynamometer: quadriceps 60° flexion, hamstrings 60° or 90° flexion, 3 reps each, use average
- If equipment is not available, a 1-repetition maximum bench press and leg press are recommended with weight room equipment, along with an experienced test administrator and a sufficient amount of time to safely conduct these tests.

### 4. Single-leg hop tests: < 15% deficit lower limb symmetry on any two tests for all sports (single hop, triple hop, triple crossover hop, 6 m timed hop).

Other tests to consider include the multi-stage fitness test to determine  $VO_2$ max and the 60-second sit-up test or other core strength measures. A single-leg vertical jump test may be conducted to determine if a deficit exists between the reconstructed and contralateral leg.