

## Patella Autograft Anterior Cruciate Reconstruction Rehabilitation Guidelines

	Goals	Weight Bearing and Brace Use	Therapeutic Exercises	Modalities	Home Exercises
Phase I Week 1	<ul style="list-style-type: none"> <li>●Restore full passive knee Extension</li> <li>●Restore patella mobility</li> <li>●Re-establish quad control</li> <li>●Independent ambulation</li> <li>●Diminish joint swelling and pain</li> <li>●Knee flexion 90 degrees by post op day 7.</li> </ul>	Brace locked in full extension during ambulation. Weight bearing as tolerated with crutches	<ul style="list-style-type: none"> <li>●Multi-angle isometrics at 90 and 60 degrees (quadriceps)</li> <li>●Knee Extension 90-40 degrees</li> <li>●Overpressure into extension (knee extension should be at least 0 degrees)</li> <li>●Patellar mobilization</li> <li>●Ankle pumps</li> <li>●Straight leg raises (3 directions)</li> <li>●Mini squats and weight shifts (0-30 degrees)</li> <li>●Quadriceps isometric setting</li> <li>●Glut Sets</li> <li>●Standing hamstring curls</li> <li>●Proprioception/Balance sets</li> </ul>	<ul style="list-style-type: none"> <li>●Electrical stimulation to quadriceps during quadriceps exercises</li> <li>●Cryotherapy 20min every hour with knee elevation and full extension.</li> </ul>	Home ice and elevation with knee in full extension. Knee must be above heart and prop ankle up. Range of motion/patella exercises 4-6 times a day out of brace. CPM 0-90 as tolerated.
Criteria to Progress: Quad Control, full passive knee extension, PROM 0-90, patella mobility, independent ambulation (1-2 crutch), minimal swelling/effusion					
Phase II Week 2-4	<ul style="list-style-type: none"> <li>●Maintain extension</li> <li>●Protect Graft</li> <li>●Prevent quad atrophy</li> <li>●Decrease swelling</li> <li>●Control of external knee forces</li> <li>●Wean crutches by 7-10 days post op</li> <li>●Flex 115 degrees by week 4</li> </ul>	Brace locked in extension for ambulation. Unlock brace for ambulation week 3. WBAT. Wean crutches.	<ul style="list-style-type: none"> <li>●Muscle stim to quadriceps exercises</li> <li>●Isometric quad sets (90-60-30 degrees)</li> <li>●Straight leg raises in 4 planes</li> <li>●Leg press 0-60 degrees</li> <li>●Knee extension 90-40 degrees</li> <li>●Half squats 0-40 degrees</li> <li>●Weight shifts</li> <li>●Stretch hamstring and calf</li> <li>●Standing hamstring curls</li> <li>●Bicycle</li> <li>●Proprioception training</li> <li>●Overpressure into extension</li> <li>●PROM 0-115</li> <li>●Patellar mobilization</li> <li>●Progressive extension resistance (1lb/wk)</li> <li>●Eccentric quad 40-100 degrees (isotonic)</li> <li>●Front step down/lateral step-over</li> </ul>	<ul style="list-style-type: none"> <li>●Electrical stimulation to quadriceps</li> <li>●Ice, compression, elevation 4-6 times a day</li> </ul>	Home ice and elevation with knee in full extension. Keep knee above heart and prop ankle only. Range of motion/patella exercises 4-6 times daily out of brace. Progress to stationary bike, stairmaster, or Nordic Track as tolerated
Criteria to Progress to Controlled Ambulation: AROM 0-115, Quadriceps strength 60% of well knee (isometric at 60 degrees), Minimal effusion					
Phase III Week 4-7	<ul style="list-style-type: none"> <li>●Restore full knee flexion ROM 130 degrees by 4 weeks</li> <li>●Restore leg strength</li> <li>●Improve balance, and neuromuscular control</li> <li>●Control walking forces</li> </ul>	No Brace or Immobilizer. Knee sleeve for swelling and support OK.	<ul style="list-style-type: none"> <li>●Continue Phase II program</li> <li>●PROM 0-130 degrees</li> <li>●Begin step up Program at 2inches and increase as tolerated</li> <li>●Closed kinetic chain rehab and proprioception training</li> </ul>	Ice, compression as needed	Home program 4-5 times daily using other leg to assist in ROM. Stationary bicycle, Nordic Track, and stair stepper for endurance.
Criteria to Progress to Moderate Protection: AROM 0-125, Quadriceps strength 60% of well knee, No patellofemoral complaints					
Phase IV Week 7-12	<ul style="list-style-type: none"> <li>●Normalize quad strength</li> <li>●Enhance power and endurance</li> <li>●Improve neuromuscular control</li> </ul>	No Brace or Immobilizer. Knee sleeve for swelling and support OK	<ul style="list-style-type: none"> <li>●Eccentric quad exercise</li> <li>●CKC exercise</li> <li>●Step ups</li> <li>●Minisquats</li> <li>●Leg press</li> <li>●Knee extension 90,40 degrees</li> <li>●Hip abd/add strength</li> <li>●Hamstring curls/stretch</li> <li>●Calf raises</li> <li>●Bicycle</li> <li>●Pool running</li> <li>●Walking program</li> <li>●Initiate isokinetic work 100, 40 degrees</li> </ul>		As per phase three
Criteria to Progress to Light Activity: AROM 0-130, Quadriceps strength 70% of well knee, Flex/Extension strength ratio 70% or better, No/minimal effusion					
Phase V Week 10-14	<ul style="list-style-type: none"> <li>●Develop strength and endurance</li> </ul>	No Brace or Immobilizer. Knee sleeve for swelling and support OK	<ul style="list-style-type: none"> <li>●Initiate running program</li> <li>●Initiate plyometric program</li> <li>●Initiate agility drills</li> <li>●Progress sport specific program</li> <li>●Continue strengthening</li> </ul>		
Criteria to Progress to Sports: Proprioceptive test 100% of well leg, Quadriceps 80% of well knee					
Phase VI Week 14+	<ul style="list-style-type: none"> <li>●Gradual return to sports</li> <li>●Improve coordination and endurance</li> </ul>		<ul style="list-style-type: none"> <li>●CKC strengthening program</li> <li>●Strengthening program</li> <li>●Plyometric program</li> <li>●Running drills</li> <li>●Agility drills</li> <li>●Sport specific training</li> </ul>		