



ACL Reconstruction with Bucket Handle Repair

Post-Operative Rehabilitation Protocol

0-4 weeks

- NWB for 6 weeks
- ROM: 0-90° with emphasis on full extension
- Patella mobilization
- SLR supine with brace locked at 0°
- Quad Sets with brace locked at 0°
- Ankle Pumps
- Short crank (90mm) ergometry

4-6 weeks

- Continue NWB status
- ROM: 0-125° (maintain full extension)
- Active knee extension to 40°
- Standard (170 mm) ergometry (ROM >115°)
- Avoid Tibial rotation until 6 weeks

6-14 weeks

- Transition to an unloader brace at 6 weeks
- Begin WBAT progression
- Discontinue crutches when gait is non-antalgic
- Progressive squat program
- Initiate Step-up program & progress to Step-Down
- Leg press, lunges
- Isotonic knee extensions (90-40°, close chain preferred)
- Agility exercises (sport cord)
- Versaclimber /Nordic track
- Retrograde treadmill ambulation

14-22 weeks



- Begin forward running (treadmill program when 8" stepdown status satisfactory)
- Continue strengthening and flexibility program
- Advance sports-specific agility drills
- Start plyometric program
- Plyo Prep Screen when initiating running and/or jumping. Schedule via QR code or email spc@rushortho.com

Weight Bearing Status

NWB x 6
weeks

Brace Settings

Locked straight x 6
weeks when
ambulating or
sleeping. Otherwise
open brace once
good quad control

ROM Restrictions

PROM 0-90°
beginning
POD 1



>22 weeks



- Advance plyometric program, return to sport (MD directed)
- Lower Body Assessment when initiating return to sport progression. Schedule via QR code email or spc@rushortho.com



Exercise	Week																
	1	2	3	4	5	6	7	8	9	10	12	16	20	24			
Initial Exercises:																	
ROM Goals	0-90°				0-125°			Progress to full									
Flexion/extension, heel slides																	
Patella/Tendon mobilization																	
Quad Series	0° ISOs, SLR				60° ISO				70-30° arc-resisted			Full arc resisted					
Hamstring strength progression	No isolated, resisted HS								ISOs, hip based				Knee-based resisted arc				
Calf stretch, seated HS stretch																	
Ankle Pumps																	
Crutch weaning	NWB																
Heel prop knee extension stretch																	
SLR (w/ brace until quad control restored)																	
SLR hip ABD, ADD, Ext (w/ brace on)																	
Bridge in knee extension-calves over balls																	
Weight-bearing Strength Exercises:	1	2	3	4	5	6	7	8	9	10	12	16	20	24			
Marching into brief SLS	NWB																
Leg Bridges (2 → 1 leg)																	
SLS Balance progressions																	
Squat/Leg press (ISO → reps, 2 → 1 leg)						0-45°0-70°>70° gradual											
Step-up/Lunge Progressions						ISOs0-70°>70°											
Dead Lift (2 →1 leg)																	
Banded resisted directional stepping																	
Cardiovascular Exercises:						1	2	3	4	5	6	7	8	9	10	12	16
Bike with both legs-no resistance	NWB																
Bike with both legs- resistance																	
Aqua jogging																	
Treadmill-walking (no limp)																	
Swimming with fins-light flutter kick																	
Elliptical Trainer																	
Stair stepper																	
*Note for Cardio Exercises						Must tolerate daily walking with no limp & no significant increase in pain/swelling prior to initiating WB cardio (walk, elliptical, stepper)											
Agility Exercises:	1	2	3	4	5	6	7	8	9	10	12	16	20	24			
Running Progression	NWB																
Initial-Single Plane																	
Advance-Multi Directional																	
Functional Sports Test																	
High Level Activities:	1	2	3	4	5	6	7	8	9	10	12	16	20	24			
Golf Progression	NWB																
Outdoor biking, hiking, running																	
Return to Full Sport at 9 months post-op																	



Quad Series:

- Quad sets (5 sec hold) also quick contractions (NMES to supplement)
- Prone quad sets
- SLR with no extension leg
- Progression of Quad Strengthening (WB exercises at 6 weeks)
 - LAQ in safe range -no added resistance to begin
 - Once weight bearing tandem stance TKE with 5 sec hold
 - Isometric wall sit
 - SLR with resistance
 - Step up progression
 - Squat progression
 - Leg press progression
 - Lunge progression

Hamstring Series:

- Hamstring stretching (supine/prone)
- Hamstring set (heel dig)- contract hamstring with knee flexed pressing heel into the floor (5 sec hold)
- Hamstring curls
- Progress to resisted hamstring curl

Sport Test Exercises:

- Goals: impact training and introduction of directional drills
- Double leg squat jumps
- Box jumps
- Speed skaters
- Double leg jumps for height and distance progress to single leg as tolerated
- Blaze pod change of direction drills

Further Clarifications and Considerations:

- May begin to implement BFR as early as 1 week into post-op period
- Functional Sports Test: Baseline completed at 7 months post-op with subsequent test between 9 months



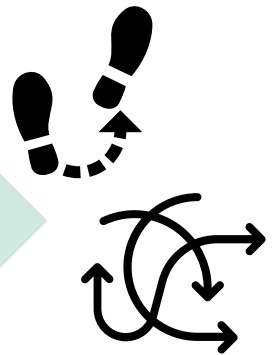
Return to Running Criteria

- Trace effusion, flexion within 5 degrees of contralateral side
- LSI on anterior reach Y balance test $\geq 90\%$
- LSI on quadriceps torque output on isometric measurement $\geq 75\%$
- 12" SL squat tolerance
- Able to walk > 1 mile with no limping or pain
- Able to "hop" with UE assist on operative leg 5 times without pain or compensation
- SL balance with eyes closed 30 seconds without loss of balance



Return to Agility/Change of Direction Criteria

- Return to running criteria listed above met
- No effusion
- Full ROM
- Quad LSI on isokinetic $\geq 85\%$
- Hamstring LSI on isokinetic $\geq 85\%$
- LSI on anterior reach Y-balance $\geq 95\%$
- SL hopping pain-free and effusion free



Return to Sport Criteria

- In order to test must demonstrate full AROM, no pain, no/trace effusion, 5/5 strength, negative lachman and pivot shift, LSI $\geq 95\%$ hamstring curl and leg press
- Quadricep strength $\geq 95\%$ of contralateral side (< 2cm of atrophy)
- Able to perform single leg squat with correct form
- LSI SL hop $\geq 95\%$
- Y-Balance $\geq 95\%$ (mean of 3 trials in anterior, posterolateral, posteromedial/100)
- Vertical jump test, single leg hop distance, and timed single leg hop over 20 -feet $\geq 90\%$ of contralateral side

