### Phase I: 0-2 Weeks

**Physical therapy start date:** within 7 days post-op

**Precautions:** Protect surgical repair; Observe for wound healing; Avoid valgus, external and internal rotation strain at knee joint; No OKC knee extension through large arc of motion; No resisted or repetitive hamstring curls

<table>
<thead>
<tr>
<th>Weight Bearing</th>
<th>Brace</th>
<th>ROM</th>
<th>Therapeutic Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBAT with brace locked in extension and 2 crutches</td>
<td>Hinged knee brace for 6 weeks</td>
<td>No motion for 1 week</td>
<td>• Heel slides (passive/active/active assisted) (Limit hamstring activation if hamstring (HS) autograft used)</td>
</tr>
<tr>
<td>Discharge crutches based on gait mechanics</td>
<td>Brace locked in extension for 1 week. After 1 week, brace locked when upright; unlocked with therapy/sitting</td>
<td>After 1 week, progress as tolerated</td>
<td>• Patellar mobilizations</td>
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<td>Emphasize full extension, no hyperextension</td>
<td>• Soft tissue and edema mobilization</td>
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<td>• Quad sets (NMES as needed)</td>
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<td></td>
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<td>• Gastroc stretching</td>
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<td></td>
<td>• SLR abduction/extension with brace on based on quad control</td>
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<td>• SLR flexion with brace until performed without extensor lag</td>
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<td>• Beginner mat exercise for core &amp; proximal hip strength</td>
</tr>
</tbody>
</table>

**Goals to progress to Phase II:** Pain control, effusion control; ROM 0°-90°; Promote quadriceps activation, perform SLR without extensor lag
### Phase II: 3-6 Weeks

**Precautions:** Monitor wound healing; No OKC quads through large arc of motion; Avoid valgus, external and internal rotation through the knee joint; No resisted or repetitive hamstring curls; ACL graft begins revascularization at 8 weeks so continued protection of graft through that point in time; Monitor joint swelling and pain for signs of joint intolerance

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</table>
| WBAT with brace locked in extension | Locked in extension when upright; unlocked with therapy | Full Extension, equal to contralateral side; Progressing to full flexion as tolerated; Stationary bike for ROM at week 4 (full revolutions expected at approx. 110°) | • Patellar & soft tissue mobilization  
• Progressing repetitions of 4-way SLR  
• SAQ from 90-45°  
• Progressing core and proximal hip strength |

**Goals to progress to Phase III:** Excellent pain control; Effusion resolving; Preserve full extension; Flexion ROM ≥ 120°; Quadriceps activation WNL

### Phase III: 6-8 Weeks

**Precautions:** Limit squat depth to 70° of knee flexion; No pivoting on planted foot for 4 months; Observe/instruct proper knee alignment with CKC drills (avoid functional valgus); Observe for signs of joint intolerance

<table>
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</table>
| WBAT → FWB Can have brace unlocked based on quad control | Gradually open based on quad control D/C when able to ambulate FWB, w/o gait deviation | Symmetrical and pain free flexion & extension Continue stationary bike | • Gait drills to normalize gait pattern  
• Initiate CKC strengthening in 2-legged support  
• Initiate basic balance and proprioception drills in 2-legged support  
• Progress core and proximal hip strength in all planes |

**Goals to progress to Phase IV:** ROM is symmetrical; normal gait mechanics; quad girth returning; excellent knee alignment with CKC drills

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ACL/MCL Reconstruction
**Phase IV: 8-12 Weeks**

<table>
<thead>
<tr>
<th>Cardiovascular Fitness</th>
<th>Proprioception/ Balance</th>
<th>Core Stability</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiate basic cardio starting with bike (15-20 minutes, minimal intensity, steady pace)</td>
<td>Progress drills: • Surface challenges • Perturbation in bilateral support • Single leg with trunk movement</td>
<td>Progress through intermediate core stability as able based on abdominal and trunk control</td>
<td>• 2 leg &gt; 1 leg squats with increasing depth (&lt;70°), based on quad control • Initiate step exercises with gradually increase step height • Initiate forward lunging and progressing to lateral and diagonal lunging • Leg press, &lt;70° (single and double) • Initiate basic large muscle group weight training: 2 leg support</td>
</tr>
</tbody>
</table>

**Goals to progress to Phase V:** Effusion resolved; ROM symmetrical and WNL; Normal gait pattern in FWB; Normal LE kinematics w/2 leg CKC activities; Able to maintain single leg balance ≥ 60 sec.; Restore normal stair climbing; Able to perform single leg squat >45° with normal mechanics

**Conduct Level I (Return to Function) Lower Extremity Physical Performance Testing**

**Goal** = Achieve ≥85% LSI w/Level I Test Activities

*Time frames in later phases of rehab are estimates only. Patients may be progressed faster/slower based on their ability to attain goals for each phase.*
### Phase V: 12-16 Weeks*

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<th>Strength</th>
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</table>
| • Initiate basic cardio with bike, elliptical, walking (15-20 min. moderate intensity, steady pace) | • Progress drills from intermediate → advanced  
*Single leg dynamic challenges  
*Varied surfaces  
*Combined with trunk/UE movement | • Intermediate → Advanced  
Core poses per control | • Progress CKC drills to 1 leg per control/symptoms  
• Add weight to CKC in 2 leg and 1 leg based on symptom/control  
• Progressing towards symmetrical LE strength |

**Phase IV Precautions:** Observe/instruct proper L/E alignment on concentric and eccentric phases with weight training exercises, preserve L/E alignment with proprioception, balance and CKC drills (avoid functional valgus); Avoid pivoting on planted foot;

**Phase V Goals:** Restore normal mechanics with single leg CKC activities, Gait speed & distance normalizing; Able to perform single leg squat >60° with normal mechanics

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**Conduct Level II (Return to Fitness) Lower Extremity Physical Performance Testing**

**Goal = Achieve ≥85% LSI w/Level II Test Activities**

**Note: Return to running should be based on the following criteria:**
1) Chondral health at the Patellofemoral/Tibiofemoral joints
2) Previous history of regular running
3) Level II PPT scores ≥ 85%
**Phase VI: 16-20 Weeks**

**Precautions:** Observe for return of effusion and/or pain with initiation of impact activity; Observe kinematic control w/CKC activities

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</thead>
<tbody>
<tr>
<td>• Progress cardio with bike, elliptical, walking (20-25 minutes, moderate intensity, steady pace)</td>
<td>• Add dynamic and directional challenges</td>
<td>• Intermediate → Advanced Core poses per control</td>
<td>• Reps to fatigue w/CKC strength drills (squat, lunge) per symptoms for muscular endurance</td>
</tr>
<tr>
<td>• Initiate running program if scores ≥ 85% w/Level II Testing (straight line, no hills)</td>
<td>• BOSU, Dynadisc, trunk and/or extremity movement, perturbation</td>
<td></td>
<td>• Progress CKC drills with directional challenge (lunging, resisted side stepping)</td>
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<td></td>
<td>•2 → 1 limb support</td>
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<td>• Progress weight training to single leg (First eccentric phase only, then both eccen/conc)</td>
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<td>• Initiate basic agility/footwork drills (cue for quick feet and hip/feet moving together to minimize pivoting on planted foot)</td>
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<td>• Initiate basic 2 leg plyometric drills (cue for deep squat landing)</td>
</tr>
</tbody>
</table>

**Phase VI Goals:** Quad girth returning; Able to perform a single leg squat ≥60° knee flexion with normal mechanics; Improving low-impact cardio base; patient to demonstrate good self-awareness of L/E alignment

**Attention:**
Progression to Phases VI and VII only pertinent to patients with an athletic history who desire to return to pounding/pivoting activities. Progression based on PF joint chondral health, symptom tolerance, and patient’s return of strength, fitness and coordination
**Phase VII: 20+ weeks**

**Precautions:** Closely observe/instruct alignment with plyometric, agility, cutting and sport drills; Modify intensity of exercises per symptoms and L/E alignment control; Advise return to running per criteria below*

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</table>
| • Once able to run x 20 minutes symptom-free, initiate sprint drills  
  -Linear  
  -Focus on acceleration phase  
  -Progress % intensity per fatigue, symptoms | • 1 leg stance w/surface challenge/perturbation  
  • 1 leg stance w/sport simulation activity  
  • Dynamic movement elements:  
  - Dot drills  
  - Reaching drills | • Advanced Core Stability Poses  
  • Add challenge w/Exercise/BOSU ball under legs/trunk  
  • Add dynamic mvmt, plyometric elements | • Progress 2 leg plyometric drills (travel, direction change, single leg landing, take-offs)  
  • Progress agility/footwork drills (speed/intensity)  
  • Initiate acceleration and deceleration drills  
  • Initiate cutting drills  
  • Initiate sport specific drills |
| • Add resistance band at U/E or L/E for challenge | | | |

**Goals:** Normal quad girth; Able to perform 2 leg squat to 90° x 20 reps & 1 leg squat ≥60° KF x 20 reps w/kinematic & symptom control; Good self-awareness of proper kinematics w/CKC drills; Patient to become independent with exercise program & demonstrate good self-awareness of L/E alignment with high level drills

Conduct **Level III (Return to Sport) Lower Extremity Physical Performance Testing**

**Note: Return to sport based on the following criteria:**
MD clearance, 2) Level III PPT scores ≥ 85% LSI, 3) Preserved symptom control w/sport