

## PROTOCOL

### POST OPERATIVE ACL RECONSTRUCTION

Approximate Time Frame (Weeks)	Activity	Goals
<b>PHASE I</b>  0-2	<p><b>WB Status:</b> PWB 50%*</p> <p><b>Brace:</b> 0-90 x 6 weeks</p> <p><b>ROM:</b> 0-120+*</p> <p><b>Manual:</b> patella mobilization, gentle STM to reduce edema, soreness, stiffness above/below knee PRN</p> <p><b>Exercise:</b></p> <ul style="list-style-type: none"> <li>• Quad sets (w/NMES PRN)</li> <li>• P/AA range of motion exercises</li> <li>• Multiplane SLR/OKC hip w/knee straight</li> <li>• Calf raises/ankle strengthening</li> </ul> <p><b>Cardiovascular:</b> Begin stationary bike when ROM allows</p>	<ul style="list-style-type: none"> <li>◇ Extension to 0</li> <li>◇ SLR no lag</li> <li>◇ Control inflammation</li> <li>◇ Minimize DVT risk</li> <li>◇ 100-120+ flexion</li> <li>◇ Normalize PF mobility</li> <li>◇ Normalize gait with crutches</li> </ul>
<b>PHASE II</b>  2-6	<p><b>WB:</b> FWBAT no limp</p> <p><b>Brace:</b> continue 0-90 until week 6</p> <p><b>ROM:</b> full</p> <p><b>Manual:</b> STM/MFR PRN, scar mobilization once healed. Patella mobs 0/30. <i>Aggressive patella/anterior interval mobilization on BTB grafts</i></p> <p><b>Exercise progression:</b></p> <ul style="list-style-type: none"> <li>• CKC double leg -&gt; single leg progression</li> <li>• Concentric and eccentric considerations</li> <li>• Hip/core/calf strengthening</li> <li>• Proprioception</li> <li>• Hamstring strength-<i>no ham curl w/external load for hamstring autograft</i></li> <li>• LE stretching w/consideration for harvest site</li> </ul> <p><b>Cardiovascular:</b> Stationary bike w/resistance Short walks, Alter-G Deep pool running at week 4 <i>and incisions fully healed</i></p>	<ul style="list-style-type: none"> <li>◇ normalize gait</li> <li>◇ Minimize swelling, PF pain</li> <li>◇ Full ROM; extension equal to opposite side</li> <li>◇ Muscular endurance progressing into strength</li> <li>◇ Proper squat pattern; <i>perform on two legs with good control, equal WB before progressing to single leg</i></li> </ul>

\*See MD's post op orders for exceptions

- Progression is criterion-based and will be slower than timeframes listed if phase goals are not met

	Approximate Time Frame (Weeks)	Activity	Goals
<b>PHASE III</b>	6-12	<p><b>Manual:</b> PRN to address ROM deficits/PF pain. Mobilize scars (<i>BTB graft</i>)</p> <p><b>Exercise progression:</b></p> <ul style="list-style-type: none"> <li>Independent myofascial management (FR, massage stick, ball)</li> <li>Controlled movement series</li> <li>CKC PRE's bilateral &amp; unilateral, emphasizing single leg strength</li> <li>Advance core program/accessory hip muscles</li> <li><i>Hamstring grafts:</i> gradually add resistance to knee flexion 8-10 wks</li> </ul> <p><b>Cardiovascular:</b></p> <ul style="list-style-type: none"> <li>Swimming, shallow pool running, elliptical 6 weeks</li> <li>Outdoor biking 8-10 weeks</li> <li>Interval CV work, Alter-G running 10-12 weeks</li> </ul> <p><b>Running/Agility:</b> Basic linear ladder drills week 10</p>	<ul style="list-style-type: none"> <li>Minimal to no PF pain as strength training advances</li> <li>Full terminal motion</li> <li>No effusion</li> <li>75% LSI of quads, hams</li> <li>Single leg squat x 90 to at least 30 degrees With 75% LSI</li> </ul> <p><i>Must meet goals in order to begin running</i></p>
<b>PHASE IVa</b>	3-6 mos	<p><b>Strengthening:</b></p> <ul style="list-style-type: none"> <li>Advance PRE's of hip, knee, ankle</li> <li>Incorporate power into training, considering individual need</li> </ul> <p><b>Cardiovascular:</b> High intensity low impact cardio to build fitness, lower intensity cardio for recovery and Alter-G for progressive loading. <i>Impact starting 2-3 days/week</i></p> <p><b>Running Progression:</b></p> <ul style="list-style-type: none"> <li>Basic ladder/linear drills with gradual advancement of difficulty</li> <li>Walk/jog interval -3 months</li> <li>Linear acceleration/deceleration-4months</li> <li>Sprinting, cutting, lateral agility-5 months (gradually increase intensity)</li> </ul> <p><b>Jumping:</b> single response progressing to multiple response jumps</p> <ul style="list-style-type: none"> <li>Double leg, low amplitude jumps starting 3-4 months</li> <li>Progressing to single leg hop 4-5 months</li> </ul>	<ul style="list-style-type: none"> <li>Manual therapy only PRN to address terminal motion deficit and/or pain</li> <li>Control inflammation with increasing loads/impact</li> <li>Limb symmetry with all strength exercises</li> <li>Normalize running gait</li> <li>Y test &lt;4cm difference</li> <li>Lateral dip x 1 minute with 90% LSI</li> <li>IKDC &gt; 7/10</li> </ul>
<b>PHASE IVb</b>	5-9 mos	<p><i>Focus shifted to impact and sports specific activities</i></p> <p><b>Strength:</b></p> <ul style="list-style-type: none"> <li>Weight training volume is maintaining or decreasing, continue to increase resistance as tolerated 2-3x/week</li> <li>Perform strength training after running/agility OR on opposite days</li> </ul> <p><b>Plyometrics</b></p> <ul style="list-style-type: none"> <li>Progress based on sport demands, individual ability</li> </ul> <p><b>RTS progression: (see specific sport protocol for details)</b></p> <ul style="list-style-type: none"> <li>Unidirectional agility drills, progressing to multidirectional</li> <li>Begin position and sport specific skills-drills</li> <li>Non-reactive progressing to reactive drills-coach or PT directed</li> </ul> <p><i>Practice/game progression, after passing sports test:</i></p> <ul style="list-style-type: none"> <li>⇒ Participation in all practice drills</li> <li>⇒ Scrimmage participation with no contact</li> <li>⇒ Scrimmage or game situation with contact, limited playing time</li> <li>⇒ Return to sport with increasing game minutes</li> </ul>	<ul style="list-style-type: none"> <li>Reconditioning for sport demands</li> <li>Correct faulty movement with high level tasks</li> <li>Emphasize both limbs for injury prevention</li> <li>RTS test @ 6+ months</li> <li>IKDC &gt; 9/10</li> <li>Return to practice with gradual progression to game play</li> </ul> <p><b><i>RTS test may be modified per therapist's discretion based on patient demographics and goals</i></b></p>

Full return is sport and patient specific and is expected no sooner than 6-9 months