



## Meniscal Repair: **COMPLEX**

### Postoperative Therapy Plan

Date of Surgery: \_\_\_\_\_

Details of Surgery: \_\_\_\_\_

Surgeon: \_\_\_\_\_

Next Follow Up with MD/PA: \_\_\_\_\_

Additional Info: \_\_\_\_\_

#### **Restrictions/Precautions:**

##### **WB Precautions:**

- Flat foot touch down using bil crutches with brace locked in extension x 6 weeks
- WBAT with or without crutches with brace 0-90° for week 7

##### **Brace:**

- Locked into extension x 6 weeks
- Unlocked 0-90° for week 7 when weight bearing
- Discharge brace beginning at week 8 unless otherwise instructed by surgeon

##### **Other Precautions:**

- WB restrictions as above
- ROM limited from full extension to 90° in NWB position x 6 weeks
- Hold bike x 6 weeks

#### **Important Notes:**

1. Weeks and months are designated in their relationship to the postoperative timeline in the grids below (e.g. Week 1 indicates postoperative days 0-7).
2. If a precaution/restriction is listed x 4 weeks it indicates **a full 4 weeks**, so it is lifted after day 28.
3. Notes above supersede any notes in the grid below, as they indicate the surgeon's preferences for this individual patient and the circumstances of their surgery.

Phase 1: Acute Postop (Weeks 1-6)	
<b>PRECAUTIONS</b>	<ol style="list-style-type: none"> <li>1. Brace locked in extension x 6 weeks</li> <li>2. Flat foot touch down WB using bil crutches x 6 weeks</li> <li>3. AROM limited from full extension to 90° in NWB positions x 6 weeks</li> <li>4. Hold bike x 6 weeks</li> </ol>
<b>Rehab Focus</b>	<ul style="list-style-type: none"> <li>• Repair protection</li> <li>• Pain and swelling reduction</li> <li>• Knee mobility: hyperextension to 90° unless otherwise indicated</li> <li>• Quad activation</li> <li>• Gait training as per precautions</li> <li>• Patient education</li> </ul>
<b>Interventions to Consider</b>	<p><u>Pain and swelling:</u></p> <ul style="list-style-type: none"> <li>- Ice, compression, elevation</li> <li>- Ankle pumps</li> </ul> <p><u>Mobility:</u></p> <ul style="list-style-type: none"> <li>- PROM of knee into flexion (to 90°) and extension, attention to hyperextension</li> <li>- AROM into flexion (to 90°) and extension</li> <li>- Low intensity, long duration stretches (eg. heel prop)</li> <li>- Patellar mobilization</li> </ul> <p><u>Strength:</u></p> <ul style="list-style-type: none"> <li>- Quad sets progressing to SLR without lag</li> <li>- NMES</li> <li>- BFR encouraged if appropriate</li> </ul> <p><u>Gait:</u></p> <ul style="list-style-type: none"> <li>- FFWB with brace locked in extension x 6 weeks</li> </ul>
<b>Criteria for Progression to Phase 2:</b> ____ AROM 0-90° in NWB positions ____ SLR without extension lag	

Phase 2: Subacute Postop (Weeks 7+8)	
<b>PRECAUTIONS</b>	<ol style="list-style-type: none"> <li>1. <u>7 weeks</u>: Brace unlocked 0-90° WBAT</li> <li>2. <u>8 weeks</u>: Discharge brace unless otherwise instructed by surgeon             <ul style="list-style-type: none"> <li>• If struggling to achieve symmetric extension, consider discussion with surgeon</li> </ul> </li> </ol>
<b>Rehab Focus</b>	<ul style="list-style-type: none"> <li>• Repair protection</li> <li>• Hyperextension AROM</li> <li>• Progressive flexion AROM</li> <li>• Quad strength</li> <li>• Proprioception</li> <li>• Gait training in brace progressing to FWB</li> </ul>

<b>Interventions to Consider</b>  <i>Continue previous interventions as appropriate</i>	<u>Mobility:</u> <ul style="list-style-type: none"> <li>- Continued attention to knee hyperextension</li> <li>- Progressive knee flexion</li> <li>- Initiate bike without resistance, may initiate elliptical</li> </ul> <u>Strength:</u> <ul style="list-style-type: none"> <li>- BFR encouraged if appropriate, attention to quad engagement/endurance</li> <li>- Introduce CKC exercises in pain free range with brace</li> <li>- Progress proximal (hip + core) strength/endurance</li> <li>- SL step ups</li> </ul> <u>Neuromuscular Re-Education:</u> <ul style="list-style-type: none"> <li>- Proprioception: Single leg stability</li> </ul> <u>Gait:</u> <ul style="list-style-type: none"> <li>- <b>7 weeks:</b> Work toward even WB without compensation in brace 0-90°,</li> <li>- <b>8 weeks:</b> without brace</li> <li>- Attention to TKE integration into gait, ample swing limb clearance</li> <li>- <b>8 weeks:</b> Initiation of reciprocal stair climbing if appropriate</li> </ul> <u>Cardio:</u> <ul style="list-style-type: none"> <li>- Bike without resistance, may initiate elliptical</li> <li>- Initiation of swimming or pool walk/jog if incisions fully closed</li> </ul>
<b>Criteria for Progression to Phase 3:</b> <ul style="list-style-type: none"> <li>___ Symmetric extension AROM</li> <li>___ SLR x 20 without extension lag</li> <li>___ FWB without gait deviation</li> </ul> <b>Important Milestones:</b> <ul style="list-style-type: none"> <li>___ Flexion AROM within 80% of uninvolved</li> <li>___ Pain free DL squat to 60° with symmetric loading</li> </ul>	

Phase 3: Late Postop (Weeks 9-11)	
<b>PRECAUTIONS</b>	<b>1. No CKC past 90°</b> <b>2. If struggling to achieve symmetric extension, consider discussion with surgeon</b>
<b>Rehab Focus</b>	<ul style="list-style-type: none"> <li>• Repair protection</li> <li>• Functional movement optimization</li> <li>• Strength progression to SL</li> <li>• Neuromuscular control + endurance</li> </ul>
<b>Interventions to Consider</b>  <i>Continue previous interventions as appropriate</i>	<u>Mobility:</u> <ul style="list-style-type: none"> <li>- Knee ROM normalized</li> <li>- Work toward CKC ankle dorsiflexion &gt; 35° or within 5° of limb symmetry</li> </ul> <u>Strength:</u> <ul style="list-style-type: none"> <li>- PREs for LE strengthening</li> <li>- Progress SL CKC loading with attention to mechanics</li> </ul>

	<u>Neuromuscular Re-Education:</u> <ul style="list-style-type: none"> <li>- Proprioception + single leg stability: <ul style="list-style-type: none"> <li>o Progress to include ball tosses, neurocognitive challenges as appropriate</li> </ul> </li> </ul> <u>Cardio:</u> <ul style="list-style-type: none"> <li>- Continued cycling, swimming, elliptical</li> </ul>
<b>Criteria for Progression to Phase 4:</b> <ul style="list-style-type: none"> <li>_____ Maintain symmetric extension ROM</li> <li>_____ Minimal to no joint effusion with activity</li> <li>_____ Pain free DL squat to 60° with optimal mechanics</li> </ul> <b>Important Milestones:</b> <ul style="list-style-type: none"> <li>_____ Flexion AROM within 90% of uninvolved</li> <li>_____ SL stance x 60 sec without LOB</li> </ul>	

Phase 4: Progressive Functional (Months 3-4)	
<b>PRECAUTIONS + Considerations</b>	<ul style="list-style-type: none"> <li>• Movements should remain primarily in sagittal plane</li> </ul>
<b>Rehab Focus</b>	<ul style="list-style-type: none"> <li>• SL strength + endurance</li> <li>• Eccentric control</li> <li>• Light impact acceptance + mechanics</li> </ul>
<b>Interventions to Consider</b>  <i>Continue previous interventions as appropriate</i>	<u>Strength:</u> <ul style="list-style-type: none"> <li>- Continued progression of quad, hamstring, proximal strength + control</li> <li>- Increased emphasis on SL loading</li> </ul> <u>Functional Training:</u> <ul style="list-style-type: none"> <li>- Continue SL stability progression: <ul style="list-style-type: none"> <li>o Reaches outside of BOS, ball tosses, neurocognitive challenges as appropriate</li> </ul> </li> <li>- Initiate submax sagittal plane hop progression with attention to mechanics: <ul style="list-style-type: none"> <li>o DL symmetric &gt; DL asymmetric &gt; SL hop</li> </ul> </li> </ul> <u>Cardio:</u> <ul style="list-style-type: none"> <li>- Continued cycling, swimming, elliptical</li> </ul>
<b>Criteria for Progression to Phase 5:</b> <ul style="list-style-type: none"> <li>_____ SL squat x 10 with optimal mechanics</li> <li>_____ LQYBT composite ≥ 75%</li> </ul> <b>Important Milestones:</b> <ul style="list-style-type: none"> <li>_____ Knee Flexion ROM within 5° of uninvolved</li> <li>_____ HS and Quad strength ≥ 75% LSI</li> <li>_____ Optimal mechanics with SL hopping in place x 30</li> </ul>	

Phase 5: Sport Specific Prep (Months 4-5)	
Rehab Focus	<ul style="list-style-type: none"> <li>Strength progression</li> <li>Power development, plyometric progression and mechanics</li> <li>Multidirectional movement control</li> </ul>
Interventions to Consider  <i>Continue previous interventions as appropriate</i>	<p><u>Strength:</u></p> <ul style="list-style-type: none"> <li>Continued progression of quad, hamstring, proximal strength + control</li> <li>SL strength and stability with increased load</li> </ul> <p><u>Power + Plyometrics:</u> with attention to mechanics:</p> <ul style="list-style-type: none"> <li>Moderate intensity</li> <li>Progress power &amp; eccentric control</li> <li>Progress speed of force generation</li> </ul> <p><u>Sport Specific Prep:</u></p> <ul style="list-style-type: none"> <li>Increase difficulty of neurocognitive tasks</li> <li>Initiate running progression if: <ul style="list-style-type: none"> <li>Quad strength: <math>\geq 70\%</math> LSI</li> <li>Optimal mechanics with SL hopping in place x 1 min</li> <li>30+ SL squat in 1 min to 30°-45° knee flexion with optimal mechanics</li> <li>WNL running mechanics in in clinic trial</li> </ul> </li> <li><b>Month 5:</b> Initiate deceleration activities, lateral hops with optimal mechanics</li> </ul> <p><u>Cardio:</u></p> <ul style="list-style-type: none"> <li>Continued cycling, swimming, elliptical</li> <li>Initiate progressive return to run program as appropriate</li> </ul>
<p><b>Criteria for Progression to Phase 6:</b></p> <p>_____ HS &amp; Quad Strength <math>\geq 80\%</math> LSI</p> <p>_____ LQYBT asymmetry <math>&lt; 6</math> cm (A, PL, &amp; PM) &amp; <math>\geq 90\%</math> Composite</p> <p>_____ Good tolerance &amp; optimal mechanics with DL and SL hopping</p> <p><b>Important Milestones:</b></p> <p>_____ Quad strength <math>&gt;70\%</math> BW</p> <p>_____ HS strength <math>&gt;50\%</math> BW</p>	

Phase 6: Progressive Sport Specific (Months 6-8)	
Rehab Focus	<ul style="list-style-type: none"> <li>Optimize physical performance, power, and capacity</li> <li>Sport specific movements and patterns</li> </ul>

<b>Interventions to Consider</b>  <i>Continue previous interventions as appropriate</i>	<b>Strength:</b> <ul style="list-style-type: none"> <li>- Continued progression of quad, hamstring, proximal strength + control</li> <li>- Functional loaded strengthening progressions</li> </ul> <b>Sport Specific:</b> <ul style="list-style-type: none"> <li>- Power progression</li> <li>- Controlled multiplanar movements and hops with optimal mechanics</li> <li>- Initiate controlled pivoting and cutting</li> <li>- Continued progression of neurocognitive tasks</li> </ul> <b>Cardio:</b> <ul style="list-style-type: none"> <li>- Continued cycling, swimming, elliptical, running</li> </ul>
<b>Criteria for Progression to Phase 7:</b> <ul style="list-style-type: none"> <li>___ Hop Testing LSI &gt;90%</li> <li>___ HS and Quad strength LSI &gt;90%</li> <li>___ Optimal mechanics with plyometrics, pivoting</li> </ul> <b>Important Milestones:</b> <ul style="list-style-type: none"> <li>___ Discuss with patient their specific deficits and their sport specific concerns</li> </ul>	

Phase 7: Return to Sport Prep (Months 9-12)	
<b>Rehab Focus</b>	<ul style="list-style-type: none"> <li>• Symmetrical strength and power</li> <li>• Optimal biomechanics with sport specific activities</li> <li>• Patient confidence in return to sport</li> </ul>
<b>Interventions to Consider</b>  <i>Continue previous interventions as appropriate</i>	<b>Strength:</b> <ul style="list-style-type: none"> <li>- Continued progression of quad, hamstring, proximal strength + control</li> <li>- Functional loaded strengthening progressions</li> </ul> <b>Sport Specific:</b> <ul style="list-style-type: none"> <li>- High intensity sport specific movement re-training, sport specific drills</li> <li>- Power and plyometric under fatigued conditions, neurocognitive demands</li> </ul> <b>Cardio:</b> <ul style="list-style-type: none"> <li>- Continued cycling, swimming, elliptical, running</li> </ul>
<b>Criteria for Return to Sport: See SLHS Return to Sport Testing Protocol</b> <ul style="list-style-type: none"> <li>___ LQYBT composite <math>\geq</math> 95%</li> <li>___ Hop Testing LSI <math>\geq</math> 95%</li> <li>___ Quad and Hamstring LSI <math>\geq</math> 95%</li> <li>___ Hamstring to Quad ratio <math>\geq</math> 67%</li> <li>___ Quad Torque <math>\geq</math> 3Nm/Kg</li> </ul> <b>Follow up with surgeon regarding official return to sport status.</b>	