

## MENISCUS REPAIR POST OPERATIVE PROTOCOL

|           | Time Frame<br>(Weeks) | Guidelines   | Goals  |
|-----------|-----------------------|--|--|
| PHASE I   | 0 to 2                | <b>CRUTCHES:</b> 50% partial weight bearing x 2-4 weeks<br><b>BRACE:</b> Locked 0/0 knee extension for 6 weeks<br><b>EXERCISE PROGRESSION</b> <ul style="list-style-type: none"> <li>Gait training</li> <li>Extension - heel props for full extension</li> <li>Flexion - off table or wall slides to 90°</li> <li>Quadriceps setting using NMES as needed</li> <li>Multi-plane straight leg raises</li> <li>Bilateral calf raises</li> </ul> <b>RECOMMENDED LOAD</b> <ul style="list-style-type: none"> <li>Short but frequent bouts of ROM, quad activation 3+x/day</li> </ul>  | <ul style="list-style-type: none"> <li>Reduce inflammation</li> <li>Normalize patella mobility with manual mobilizations</li> <li>Full extension, passive and active</li> <li>Good quadriceps activation</li> <li>No extension lag with straight leg raise</li> <li>90° flexion limitation x 4 weeks per MD instruction</li> </ul> |
|           | 2 to 6                | <b>EXERCISE PROGRESSION</b> <ul style="list-style-type: none"> <li>Continue with phase I program</li> <li>Extension – continue with heel props or add prone hangs (as needed)</li> <li>Flexion – wall or heel slides with limit per MD</li> <li>Ball bridge and/or isometric hamstring activation</li> <li>Open and closed chain cord kicks as WB allows</li> <li>Proprioception drills as WB allows</li> </ul> <b>CARDIOVASCULAR EXERCISE</b> <ul style="list-style-type: none"> <li>Short walks</li> </ul> <b>RECOMMENDED LOAD</b> <ul style="list-style-type: none"> <li>Short but frequent bouts of ROM, quad activation 3x/day</li> </ul>   | <ul style="list-style-type: none"> <li>Reduce inflammation</li> <li>Full knee extension/hyperextension</li> <li>Good quadriceps control with no extension lag</li> <li>90° of knee flexion</li> <li>Progress off crutches (per MD)</li> </ul>  |
| PHASE II  | 6 to 12               | <b>EXERCISE PROGRESSION</b> <ul style="list-style-type: none"> <li>Flexion – increasing to full as tolerated</li> <li>Partial range squats</li> <li>Step-up progression with gradual increase in step height</li> <li>Multi-plane open &amp; closed kinetic chain hip strengthening</li> <li>Hamstring activation with bridge on floor, ball or box</li> <li>Progress to unilateral heel raise off the floor, then off step</li> <li>Proprioception drills</li> </ul> <b>CARDIOVASCULAR EXERCISE</b> <ul style="list-style-type: none"> <li>Stationary biking</li> <li>Treadmill/outdoor walking, focus on proper gait mechanics</li> </ul> <b>RECOMMENDED LOAD</b> <ul style="list-style-type: none"> <li>ROM: 2-3x/day</li> <li>Strength: 1x/day open chain; 3x/week closed chain</li> <li>Cardiovascular: 20-30 minutes/day low/moderate intensity</li> </ul> | <ul style="list-style-type: none"> <li>Full knee extension</li> <li>Gradual progression to full flexion</li> <li>Normalize patellofemoral joint and scar mobility</li> <li>Open brace 0-90° x 1 week then D/C brace as quad control permits</li> <li>Normalize gait</li> </ul>   |
| PHASE III | 12 to 16              | <b>MOVEMENT PREP</b> <ul style="list-style-type: none"> <li>Foam roller</li> <li>Controlled movement series</li> </ul> <b>EXERCISE PROGRESSION</b> <ul style="list-style-type: none"> <li>Weighted squat progression – gradually increase depth and resistance</li> <li>Leg press, hamstring curls, RDL's, single leg calf raises</li> <li>Single leg squat/step-up/lunge progression (dips, retro, walk and split), Slow progression with increasing depth</li> <li>Monster walks</li> </ul>  | <ul style="list-style-type: none"> <li>Control inflammation with increasing loads</li> <li>Full knee flexion and extension with terminal stretch</li> <li>Progressive strengthening</li> <li>Increase muscular endurance</li> </ul>  |

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| <b>PHASE III<br/>(CONTINUED)</b> | 12 to 16              | <p><b>CORE PROGRAM</b></p> <ul style="list-style-type: none"> <li>• Front plank – full, may advance to alternating leg lift</li> <li>• Bridge – marching or single leg</li> <li>• Side plank – full</li> <li>• Dead bug progression</li> <li>• Quadruped alternating arm-leg</li> </ul> <p><b>CARDIOVASCULAR EXERCISE</b></p> <ul style="list-style-type: none"> <li>• Stationary biking</li> <li>• Treadmill/outdoor walking, focus on proper gait mechanics</li> <li>• Arc trainer or elliptical</li> <li>• Stadium stair walking</li> </ul> <p><b>ACTIVITY PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Basic ladder series</li> <li>• Low amplitude bilateral hops</li> <li>• Skipping</li> <li>• Higher intensity interval work w/ CV program: <b>WEEK 12-14</b></li> </ul> <p><b>JUMPING PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Low amplitude bilateral single response jumps</li> </ul> <p><b>SPORTS SPECIFIC ACTIVITY PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Outdoor biking: <b>WEEK 6</b></li> <li>• Shallow water pool running: <b>WEEK 6</b></li> <li>• Swimming, free style: <b>WEEK 6</b></li> <li>• High intensity interval work with CV program: <b>WEEK 6-8</b></li> <li>• Non-reactive &amp; non-contact on-field/court progression</li> </ul> <p><b>RECOMMENDED LOADING</b></p> <ul style="list-style-type: none"> <li>• ROM: 1-2x/day</li> <li>• Strength: 3x/week with closed chain loading</li> <li>• Cardiovascular: 20-45 minutes 5x/week, moderate intensity</li> </ul> | <ul style="list-style-type: none"> <li>• Control inflammation with increasing loads</li> <li>• Full knee flexion and extension with terminal stretch</li> <li>• Progressive strengthening</li> <li>• Increase muscular endurance</li> </ul> |
| <b>PHASE IV</b>                  | 16 to 20+             | <p><b>EXERCISE PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Increase loads from phase III</li> </ul> <p><b>CARDIOVASCULAR EXERCISE</b></p> <ul style="list-style-type: none"> <li>• Stationary bike</li> <li>• Arc trainer or elliptical</li> <li>• swimming</li> </ul> <p><b>JUMP PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Low amplitude bilateral single response jumps</li> <li>• Bilateral multiple response jumps</li> <li>• Unilateral single response jumps</li> </ul> <p><b>RUNNING PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Advanced ladder series</li> <li>• Walk/jog interval</li> <li>• Linear acceleration/deceleration</li> <li>• Sprinting</li> <li>• Change of direction and lateral agility</li> </ul> <p><b>SPORT SPECIFIC ACTIVITY PROGRESSION</b></p> <ul style="list-style-type: none"> <li>• Non-contact &amp; non-reactive field progression: <b>WEEK 16-20</b></li> <li>• Interval golf program: <b>WEEK 20</b></li> </ul> <p><b>SPORTS TEST AND RETURN TO FULL ACTIVITY</b></p> <ul style="list-style-type: none"> <li>• Follow-up examination with physician</li> <li>• Sports test for return to competition: <b>5-6 MONTHS</b></li> </ul> <p><b>RECOMMENDED LOADING</b></p> <ul style="list-style-type: none"> <li>• ROM: global stretching</li> <li>• Strength: 2-3x/week with increasing resistance</li> <li>• Cardiovascular: 20-45 minutes 5x/week. Alternate impact and non-impact days using sound recovery principles.</li> </ul>                                | <ul style="list-style-type: none"> <li>• Control inflammation with increasing loads</li> <li>• Increase muscular strength, power and endurance</li> <li>• Establish return to activity</li> </ul>   |