

**PATELLA/TROCHLEA CARTILAGE RESTORATION (MACI, OATS, OCA, MICROFRACTURE) PT PROTOCOL**

	<b>BRACE INSTRUCTIONS AND RESTRICTIONS</b>	<b>RANGE OF MOTION GOALS</b>	<b>PT EXERCISES/NOTES</b>
<b>PHASE 1</b> <b>First 2 Weeks (0-2)</b> 1-2 Sessions/week Begin after 5-7 days	<ul style="list-style-type: none"> <li>-<b>Hinge Knee brace x 6 weeks</b> (may remove for shower/hygiene)</li> <li>-Brace locked in extension with ambulation and sleeping at 0 degrees</li> <li>-Unlock brace when seated for 0 to 90 degrees range of motion</li> <li>-Crutches for assisted ambulation</li> <li>-<b>Weight bear as tolerated in brace locked at 0 degrees</b></li> </ul>	<ul style="list-style-type: none"> <li>-Begin PROM/AAROM/AROM when seated 0 to 90 degrees</li> <li>-Consider CPM (Begin 0 to 30 degrees, progress as tolerated) 4 to 6 hours/day</li> </ul>	<ul style="list-style-type: none"> <li>-Begin patellar mobilization, pain/edema control, passive/active ROM exercises</li> <li>-Strengthening to include ankle pumps, quad sets, straight leg raise</li> <li>-Consider NMES as needed</li> </ul>
<b>PHASE 2</b> <b>Next 4 Weeks (2-6)</b> 1-2 Sessions/week	<ul style="list-style-type: none"> <li>-<b>Hinge Knee brace x 6 weeks</b> (may remove for shower/hygiene)</li> <li>-Brace unlocked during daytime use only</li> <li>-May remove brace for sleeping <b>at 2 weeks</b></li> <li>-Unlock brace when seated for 0 to 120 degrees range of motion</li> <li>-Crutches for assisted ambulation; discontinue as able <b>at 4 weeks</b></li> <li>-<b>Weight bearing as tolerated</b></li> </ul>	<ul style="list-style-type: none"> <li>-Progress PROM/AAROM/AROM when seated 0 to 120 degrees (Goal of 120 degrees knee flexion <b>by 6 weeks</b>)</li> <li>-Consider CPM (progress as tolerated) 4 to 6 hours/day</li> </ul>	<ul style="list-style-type: none"> <li>-Continue phase 1 exercises and add knee extension stretches, heel raises</li> <li>-Side lying hip/core strengthening</li> <li>-Consider NMES and add Blood Flow Restriction as needed</li> </ul>

<p><b>PHASE 3</b>  <b>Next 4 Weeks (6-10)</b>  2 Sessions/week</p>	<p>-Continue <b>full weight bearing</b> as tolerated  -Discontinue brace <b>at 6 weeks</b></p>	<p>-Continue to advance PROM/AAROM/ AROM to reach full ROM</p>	<p>-Continue phase 2 exercises and add closed chain exercises, hamstring work, lunges, seated leg press 0 to 90 degrees, proprioception exercises, balance/ core/hip/glutes,  -Daily stretching including prone quadriceps, hamstrings, and calf  -Stationary bike to increase ROM <b>at 8 weeks</b></p>
<p><b>PHASE 4</b>  <b>Next 6 Weeks (10-16)</b>  1-2 Sessions/week</p>		<p>-Continue to advance PROM/AAROM/ AROM to reach full ROM</p>	<p>-Continue phase 3 exercises and add squat to chair, seated leg press ,step-up/step-down, single leg wall slides, single leg squat to chair  -Progress proprioceptive activities  -Begin walk-run program <b>at 12 weeks</b>  -May begin plyometric exercises <b>at 14 weeks</b> (low intensity vertical and lateral hopping to begin – initially both feet, progress to one foot; advance volume as tolerated)  -Begin use of conventional exercise equipment (start with light weight and high rep/sets, progress to short reps/sets and high weight) <b>at 14 weeks</b>  -Consider ACE STRENGTH <b>after 4 months</b></p>

<p><b>PHASE 5</b>  <b>16 Weeks+</b>  Sessions weekly  frequency to be  determined</p>			<ul style="list-style-type: none"> <li>-Continue phase 4 exercises</li> <li>-Advance sprinting, backward running, zig-zag running, figure-of-eight running, carioca running, shuttle run and sport specific drills provided 70% strength on Limb Symmetry Index</li> <li>- Consider ACE SPORT <b>after 5+ months</b></li> <li>-Return to sport <b>after 6 months</b> per protocol and once clear by MD</li> </ul>
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FUNCTIONAL TEST/RETURN TO SPORT CLEARANCE CRITERIA:

- > 90% isometric quadricep strength
- > 90% comparable hop testing to contralateral side (single-leg, triple, cross-over, 6 meter timed hop test)
- > 90% quad index LSI with Biodex or HHD
- > 90% quad peak torque/weight on Biodex (if applicable)
- Good form on vertical jump, deceleration shuttle test, Y-balance test
- No functional complaints, effusion, ROM restriction
- Good confidence with sport specific agility drills, running, and jumping
- Acceptable ACL-RSI score

This protocol is intended for the purposes of guiding post-surgical or post-injury rehabilitation exercises and goals. These guidelines may be interpreted by a certified physical or occupation therapist and tailored to meet patient specific goals and expectations. Other specific modifications may be made by Dr. Butterfield depending on adjuvant surgical procedures, surgical findings, or rehabilitation progress.

Please fax initial physical therapy assessment and progress notes to Dr. Butterfield at 763-786-3320. You may direct questions regarding this protocol or patient progress to our office at 763-786-9543 or email at MatthewButterfield@tcomn.com