

FEMUR/TIBIA CARTILAGE RESTORATION (MACI, OATS, OCA, MICROFRACTURE) PT PROTOCOL

	BRACE INSTRUCTIONS AND RESTRICTIONS	RANGE OF MOTION GOALS	PT EXERCISES/NOTES
PHASE 1 First 2 Weeks (0-2) 1-2 Sessions/week Begin after 5-7 days	-Hinge Knee brace x 6 weeks (may remove for shower/hygiene) -Brace locked in extension with ambulation and sleeping at 0 degrees -Unlock brace when seated for 0 to 90 degrees range of motion -Crutches for assisted ambulation -Touch down weight bearing	-Begin PROM/AAROM/AROM when seated 0 to 90 degrees -Consider CPM (Begin 0 to 30 degrees, progress as tolerated) 4 to 6 hours/day	-Begin patellar mobilization, pain/edema control, passive/active ROM exercises -Strengthening to include ankle pumps, quad sets, straight leg raise -Consider NMES as needed
PHASE 2 Next 4 Weeks (2-6) 2 Sessions/week	-Hinge Knee brace x 6 weeks (may remove for shower/hygiene) -Brace may be unlocked with ambulation -Crutches for assisted ambulation -May remove brace for sleeping at 4 weeks -Touch down weight bearing	-Progress PROM/AAROM/AROM when seated 0 to 120 degrees (Goal of 120 degrees knee flexion by 6 weeks) -Consider CPM (progress as tolerated) 4 to 6 hours/day	-Continue phase 1 exercises and add knee extension stretches, heel raises -Side lying hip/core strengthening -Consider NMES and add Blood Flow Restriction as needed

<p>PHASE 3 Next 4 Weeks (6-10) 2 Sessions/week</p>	<ul style="list-style-type: none"> -Advance 25% weight each week to full weight bearing as tolerated -Unlock brace with ambulation at 7 weeks -Discontinue crutches as able at 10 weeks -Discontinue brace at 10 weeks 	<ul style="list-style-type: none"> -Continue to advance to full PROM/AAROM and advance AROM 0-120 degrees 	<ul style="list-style-type: none"> -Continue phase 2 exercises and add proprioception exercises, balance/core/hip/glutes, -Daily stretching including prone quadriceps, hamstrings, and calf -Stationary bike to increase ROM at 8 weeks
<p>PHASE 4 Next 6 Weeks (10-16) 1-2 Sessions/week</p>		<ul style="list-style-type: none"> -Continue to advance PROM/AAROM/ AROM to reach full ROM 	<ul style="list-style-type: none"> -Continue phase 3 exercises and add closed chain exercises, hamstring work, lunges, seated leg press 0 to 90 degrees, mini squats 0 to 45 degrees -Stationary bike add resistance as tolerated
<p>PHASE 5 16 Weeks+ Sessions weekly frequency to be determined</p>			<ul style="list-style-type: none"> -Continue phase 4 exercises and add step-up/step-down, single leg wall slides, single leg squat to chair -Progress proprioceptive activities -Consider ACE STRENGTH after 5 months

<p>PHASE 6 24 Weeks+ Sessions weekly frequency to be determined</p>			<ul style="list-style-type: none"> -Continue phase 5 exercises -May begin plyometric exercises at 24 weeks (low intensity vertical and lateral hopping to begin - initially both feet, progress to one foot; advance volume as tolerated) -Advance lateral movements including step, shuffle hopping, cariocas, 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 at 8 months -Return to sporting activity after 12 months per protocol and once clear by MD
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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

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