

# MACI/AUTOCART/MICROFRACTURE/BIOCARTILAGE\*\* TO PATELLA/TROCHLEA + TIBIAL TUBERCLE OSTEOTOMY (TTO) REHABILITATION PROTOCOL

	WEIGHT BEARING	BRACE	ROM	EXERCISES
<b>PHASE I</b> 0-8 weeks	<p><b>0-6 weeks:</b> Heel touch only</p> <p><b>6-8 weeks:</b> Advance 25% weekly until full</p>	<p><b>0-2 week:</b> Locked in full extension at all times*</p> <p>Off for CPM, hygiene, and exercises only</p> <p><b>2-4 weeks:</b> Unlocked 0-45°; worn daytime only</p> <p><b>4-6 weeks:</b> Unlocked 0-90°; worn daytime only</p> <p>Discontinue after 6 weeks when WB comfortably</p>	<p><b>0-2 wks:</b> Gentle passive 0-45 as tolerated</p> <p><b>2 wks+:</b> advance as tolerated</p> <p><b>0-6 wks:</b> use CPM 6 hours/day, advance 5-10 degrees/day as tolerated, d/c at 6wks***</p> <p>Goals: 0-2 wks: 0-30 2-4 wks: 0-60 4-6 wks: 0-90</p>	<p><b>0-2 weeks:</b> Quad sets, SLR, calf pumps, passive leg hangs to 45° at home</p> <p><b>2-6 weeks:</b> PROM/AAROM to tolerance, patella and tibiofibular joint mobs, quad, hamstring, and glute sets/stretching, side-lying hip and core</p> <p><b>6-8 weeks:</b> Addition of heel raises, closed chain exercises, gait normalization, eccentric quads, eccentric hamstrings; advance core, glutes and pelvic stability</p>
<b>PHASE II</b> 8-12 weeks	Full	None	Full	<p>Progress closed chain activities and gait training</p> <p>Begin unilateral stance activities, balance training, hamstring work, hip/core/glutes</p> <p>Begin stationary bike at 10 wks with low resistance as tolerated</p>
<b>PHASE III</b> 12-24 weeks	Full	None	Full	<p>Advance Phase II exercises; maximize core/glutes, pelvic stability work, eccentric hamstrings, balance</p> <p>Swimming as tolerated after 12 weeks</p> <p>Elliptical as tolerated after 16 weeks****</p>
<b>PHASE IV</b> 6-12 months	Full	None	Full	<p>Advance functional activity without impact</p> <p>Return to sport-specific activity and impact when cleared by MD after 6-8 months</p>

\*Brace may be removed at night after first post-operative visit (day 7-14) if directed

\*\*Please follow PT script if different than this protocol. Alignment correction procedures (HTO, DFO) do not change protocol

\*\*\*If CPM is not prescribed, goal is 600-800 reps of gentle ROM each day

\*\*\*\*Microfracture patients can advance back to sport as tolerated after 16 weeks