

## Tibial tubercle osteotomy (TTO) and Autologous Chondrocyte Implantation (MACI) of Patella/Trochlea Rehabilitation Protocol

**NO knee motion for the first 48 hours after surgery (DO NOT BEND THE KNEE). During this time, you must wear the brace locked in extension 24/7.**

	Weight-bearing	Brace	Range of Motion	Exercises
<b>Phase 1</b> 0-6 weeks	Weeks 0-6: Toe touch for balance	<b>0-1 week:</b> Locked in full extension for ambulation and sleeping  <b>1-4 weeks:</b> Unlocked for ambulation, remove for sleeping**	<b>NO MOTION first 48 hours postop.</b>  As tolerated, goal 90° @ first post-op visit  2-6 weeks: Main full extension and progressive flexion	NO knee motion for the first 48 hours after surgery (DO NOT BEND THE KNEE). During this time, you must wear the brace locked in extension 24/7. Heel slides, quad/hamstring sets, patellar mobilization, gastroc/soleus stretch  SLR w/ brace in full extension until quad strength prevents extension lag
<b>Phase 2</b> 7-12 weeks	Weight bear as tolerated, progressing to normal gait pattern	Discontinue after 6 weeks if patient has no extension lag	Main full extension and progressive flexion	Progress Phase I  Begin toe raises, closed chain quads, balance exercises, hamstring curls, stationary bike, step-ups, front and side planks, hip/glute/core, pool
<b>Phase 3</b> 12-16 weeks	Full with a normalized gait pattern	None	Gain full and pain-free	Advance closed chain strengthening, progress proprioception activities  Begin stairmaster, elliptical and running straight ahead
<b>Phase 4</b> 16 weeks – 6 months	Full	None	Full	<b>16 wks:</b> Begin jumping  <b>20 wks:</b> Advance running to sprinting, backward running, cutting/pivoting/changing direction, initiate plyometric program and sport-specific drills  <b>22 wks:</b> Advance as tolerated  FSA completed at 22 wks***
<b>Phase 5</b> 6-12 months	Full	None	Full	Gradual return to sports participation after completion of FSA  Maintenance program based on FSA

SLR – Straight-leg raise;

\*Modified with concomitantly performed meniscus repair/transplantation or articular cartilage procedure

\*\*Brace may be removed for sleeping after first post-operative visit (day 7-10)

\*\*\*Completion of FSA (Functional Sports Assessment) not mandatory, but recommended at approximately 22 wks post-op for competitive athletes returning to play after rehab