

Matrix-Assisted Autologous Chondrocyte Implantation (MACI) (Patella/Femoral Trochlea)

Patient Name: _____

Date: _____

Diagnosis: _____

DOS: _____

Frequency: 1 2 3 4 times/week Duration: 1 2 3 4 5 6 weeks

Phase 1 (0-6 weeks)

- Goals: Control swelling, restore neuromuscular communication loops, prevent kinesiphobia; gait training
- Modalities: Compressive cyrotherapy, e-stimulation
- Weightbearing: May begin weight bearing with hinged brace locked in extension, using crutches
- Brace:
 - Locked in extension full-time 24 hours per day for initial 48 hours.
 - After 48 hours begin progressive ROM for exercises.
 - Brace locked at all times weight bearing.
- ROM:
 - Initial 0-2 weeks: 0-30°
 - Weeks 2-4 advance to 0-60°
 - Weeks 4-6 advance to 0-90°
- Exercises:
 - 0-2wks: Quad sets, SLR, calf pumps, passive leg hangs to 45deg at home
 - 2-6wks: PROM/AAROM to tolerance, patella and tibiofibular joint mobs, quad, hamstring, and gluteal sets, SLR, side-lying hip and core

Phase 2 (6-8 weeks)

- Weightbearing: Full
- Brace: Begin to wean from brace after 6 weeks. Advocate to continue in uncontrolled settings or adverse weather.
- ROM: Full 0-120°
- Exercises: Advance Phase 1 exercises. Progress weightbearing flexibility, begin toe raises and closed chain quad work. Begin floor-based core and glutes work, balance exercises, hamstring curls and stationary bike

Phase 3 (8-12 weeks)

- Weightbearing: Full
- Brace: None
- ROM: Full
- Exercises: Gait training, begin closed chain activities; wall sits, shuttle, mini-squats, toe raises. Begin unilateral stance activities, balance training

Phase 4 (12wks – 6mo)

- Weightbearing: Full
- Brace: None
- ROM: Full
- Exercises: Advance phase 3 exercises; maximize core/gluteals, pelvic stability work, single-leg stance, eccentric hamstrings. May advance to elliptical, bike, pool as tolerated.

Phase 5 (6-12mo)

- Weightbearing: Full
- Brace: None
- ROM: Full
- Exercises: Advance functional activity. Return to sport-specific activity and impact when cleared by MD after 8mo.