

Rehabilitation Protocol: Autologous Chondrocyte Implantation (Patello-Femoral)

	Weight Bearing	Brace Use	Range of Motion	Therapeutic Elements
PHASE I 0 - 2 weeks	Non-weight bearing (NWB) with crutches.	Locked in extension. Remove for CPM and exercises.	CPM: 6-8 hrs/day. Start -5 to 45°. Increase 5-10° per day as tolerated. Goal: at least 90° by 4weeks, 120° by 6 weeks. PROM: 90° flexion at each therapy session. *	Quad sets, hamstring isometrics, co-contractions, ankle pumps. Regain full extension. Modalities: heat before, ice after. Quad stim.
2 - 6 weeks	Touch-down (TDWB) with crutches.	Brace locked from 0-40°.		
6 - 8 weeks	50% partial weight (PWB) with crutches.	Discontinue brace if patient has controlled SLR without extension lag.	Progress to full ROM. Discontinue CPM.	Begin progressive closed chain exercise.
8 - 12 weeks	As tolerated (WBAT), wean off crutches.	None.	Full A/PROM.	Progress closed chain exercises. Bicycle.
PHASE II 12 weeks – 6 months	Full weight (FWB) with normal gait.	None.	Full A/PROM.	Advance closed chain exercise. Balance exercises. Begin open chain strengthening.
PHASE III 6 -12 months	FWB.	None.	Full.	Swimming and Treadmill walking for exercise. Progress to Elliptical (EFX).
PHASE IV 12 - 18 months	FWB.	None.	Full.	Continue strength training. May begin a progressive running and agility program. Consider return to high impact sports.

* Loss of flexion is common with this procedure and patients are encouraged to obtain 90° flexion 3x/d with heel slide out of the brace starting after first therapy session.