

Kevin M. Kaplan, MD Advanced Arthroscopy/Sports Medicine

Rehabilitation Protocol: Autologous Chondrocyte Implantation (ACI)/DeNovo NT Implantation (Femoral Condyle)

Name:	Date:
Diagnosis: _	Date of Surgery:
	Veeks 0-12)
 Weig 	htbearing:
0	Weeks 0-2: Non-weightbearing
0	Weeks 2-4: Partial weightbearing (30-40 lbs)
0	Weeks 4-6: Continue with partial weightbearing (progress to use of one crutch at weeks 6-8)
0	Weeks 6-12: Progress to full weightbearing with discontinuation of crutch use
 Braci 	ng:
0	Weeks 0-2: Hinged knee brace locked in extension- remove for CPM and rehab with PT
0	Weeks 2-4: Gradually open brace at 20° intervals as quad control is obtained
0	D/C brace when patient can perform straight leg raise without an extension lag
 Range 	e of Motion – Continuous Passive Motion (CPM) Machine for 6-8 hours per day for 6 weeks
0	Set CPM to 1 cycle per minute – set initially at 0-30°
0	Increase flexion 5-10° per day until full flexion is achieved Should be at 90° by week 4 and 120° by week 6
0	PROM/AAROM and stretching under guidance of PT
Thera	apeutic Exercises
0	Weeks 0-2: Straight leg raise/Quad sets, Hamstring isometrics Perform exercises in the brace if quad control is inadequate
0	Weeks 2-6: Begin progressive isometric closed chain exercises** (see comments) • At week 6 can start weight shifting activities with operative leg in extension
0	Weeks 6-10: Progress bilateral closed chain strengthening, begin open chain knee strengthening
0	Weeks 10-12: Begin closed chain exercises using resistance (less than patient's body weight), progress to unilateral closed chain exercises
0	At week 10 can begin balance exercises and stationary bike with light resistance
WeigRang	(Weeks 12-24) htbearing: Full weightbearing with a normal gait pattern e of Motion – Advance to full/painless ROM apeutic Exercises

Progress balance/proprioception exercises Start sport cord lateral drills

Advance bilateral and unilateral closed chain exercises
 Emphasis on concentric/eccentric control

o Stationary bike/Treadmill/Stairmaster/Elliptical

	 Phase III (Months 6-9) Weightbearing: Full weightbearing with a normal gait pattern Range of Motion – Advance to full/painless ROM Therapeutic Exercises Advance strength training Start light plyometric exercises Start jogging and sport-specific training at 6 months
	 Phase IV (Months 9-18) Weightbearing: Full weightbearing with a normal gait pattern Range of Motion – Full/Painless ROM Therapeutic Exercises Continue closed chain strengthening exercises and proprioception activities Emphasize single leg loading Sport-specific rehabilitation – running/agility training at 9 months Return to impact athletics – 16 months (if pain free) Maintenance program for strength and endurance
¹	omments: Weeks 2-6 – need to respect the repair site: if anterior lesion avoid loading in full extension, if posterior sion avoid loading in flexion > 45° equency: times per week
Sig	gnature: Date: