

Rehabilitation Protocol: Autologous Chondrocyte Implantation (ACI) – Trochlea / Patella



Hospital for Joint Diseases
NYU LANGONE MEDICAL CENTER

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Name: _____

Date: _____

Diagnosis: _____

Date of Surgery: _____

Phase I (Weeks 0-12)

- **Weightbearing:**
 - Weeks 0-2: Non-weightbearing
 - Weeks 2-4: Partial weightbearing (30-40 lbs)
 - Weeks 4-6: Continue partial weightbearing, progress to one crutch at week 6
 - Weeks 6-12: Progress to full weightbearing with discontinuation of crutches
- **Bracing:**
 - Weeks 0-2: Hinged knee brace locked in extension – remove for CPM and rehab with PT
 - Weeks 2-4: Locked in extension for weightbearing – can open brace for NWB 0-30° ROM
 - Weeks 4-6: Open brace 0-30° for ambulation
 - D/C brace at 6 weeks postoperatively
- **Range of Motion** – Continuous Passive Motion (CPM) Machine for 6-8 hours per day for 6-8 weeks
 - Weeks 0-3: Set CPM to 1 cycle per minute – starting from 0-30° of flexion
 - Advance 5-10° per day until full flexion is achieved (should be at 90° by week 6, 120° at week 8)
 - PROM/AAROM and stretching under guidance of PT
- **Therapeutic Exercises**
 - Weeks 0-4: Straight leg raise/Quad sets, hamstring isometrics
 - Perform exercises in the brace if quad control inadequate
 - Weeks 4-10: Begin progressive isometric closed-chain exercises
 - At week 6 can start weight shifting activities with operative leg in extension
 - Weeks 6-10: Progress to bilateral closed chain strengthening, begin open chain knee strengthening
 - Week 8: Begin balance exercises and light resistance stationary bike
 - Weeks 10-12: Hamstring strengthening, theraband resistance exercises 0-30°, light open-chain knee isometrics

Phase II (Weeks 12-24)

- **Weightbearing:** Full weightbearing with a normal gait pattern
- **Range of Motion** – Advance to full/painless ROM
- **Therapeutic Exercises**
 - Gait training, treadmill use at slow-moderate pace
 - Progress balance/proprioception exercises
 - Start sport cord lateral drills

Phase III (Months 6-9)

- **Therapeutic Exercises**
 - Advance closed-chain strengthening/start unilateral closed chain exercises
 - Progress to fast walking and backward walking on treadmill (add incline at 8 months)
 - Start light plyometric training

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Phase IV (Months 9-18)

- **Therapeutic exercise**

- 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 and cleared by MD
- Maintenance program for strength and endurance

Comments:

Frequency: _____ times per week

Duration: _____ weeks

Signature: _____

Date: _____