

**Autologous Chondrocyte Implantation Procedure**  
 Rehabilitation Protocol  
 Dr. Henry

**Phase I – Protection Phase (Weeks 0 to 6):**

**Goals**

- Protect healing surfaces from shear forces
- Restore full passive knee extension with gradual increase in flexion
- Control postoperative pain and swelling
- Regain quadriceps control

**Weight-Bearing Precautions: (Brace in locked 0° extension)**

- Femoral Condyle lesions
  - Sleep in locked brace for 2 weeks
  - NWB (2 weeks)
  - TTWB (week 2-3)
  - Partial 25% WB (week 4-5)
- **Patellafemoral/Trochlea Lesions**
  - Sleep in locked brace for 4 weeks
  - Partial WB 25% (0-2 weeks)
  - Partial 50% (week 2)
  - Partial 75% (week 3-4)

**Treatment Strategies:**

- Initiate CPM 6-8 hours per day
  - Rom goals 90° (week 2), 105° (week 4) and 125° (week 6)
- Quad sets
- Patella mobility
- SLR's (all planes)
- Bike ergometry
- Weight shifting exercise as WB permits
- Aquatic therapy (at week 4)
- NO active knee extension for patella-femoral/Trochlea lesions

**Phase II – Transition phase (Week 6 to 12):**

**Goals:**

- Restore full ROM and normal gait
- Increase activities of daily living
- Discharge brace at week 6

**Weight-Bearing Precautions:**

- Femoral Condyle Lesions:
  - Partial 50% (week 6-7)

<b>MD Appointments</b>
2 weeks
6 week
12 weeks
6 months

- WBAT (week 8) Discharge crutches at week 8-9

**Patellafemoral/Trochlea Lesions**

- WBAT (week 6) Discharge crutches at week 6-8

**Treatment Strategies:**

- SLR's with resistance
- Neuromuscular balance training (bilateral)
- **Week 6 femoral condyle / Trochlea lesions Week 8:**
  - Leg press (60-0°)
  - Mini Squats (0-45°)
  - Forward step-up program
  - Front lunges
  - Wall squats

**Phase III – Remodeling phase (Weeks 13 to 32):**

**Goals:**

- Return to normal ADL's
- Improve Muscular Strength and endurance

**Treatment Strategies:**

- Walking program
- Leg Press (90-0°)
- Progress Squats program (0-60°)
- Forward step down program 2" to 8"
- Elliptical Trainer
- Forward treadmill walking program
- Initiate maintenance program at weeks 16-20

**Phase IV – Strengthening and Plyometric Phase (Weeks 26+):**

**Goals:**

- Gradual return to full unrestricted activity

**Treatment Strategies:**

- Progress resistance as tolerated
- Forward running (8-10 months)
- Advance proprioception and agility drills (12 months for Trochlea lesion)
- Sports test for return to play, after 12 month for high impact sports