

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

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

### Phase II (Weeks 12-24)

- **Weightbearing:** Full weightbearing with a normal gait pattern
- **Range of Motion** – Advance to full/painless ROM
- **Therapeutic Exercises**
  - Advance bilateral and unilateral closed chain exercises
    - Emphasis on concentric/eccentric control
  - Stationary bike/Treadmill/Stairmaster/Elliptical
  - Progress balance/proprioception exercises
  - Start sport cord lateral drills

