

**REHABILITATION PROTOCOL: AUTOLOGOUS CHONDROCYTE IMPLANTATION (ACI)/
 DeNovo NT Implantation (Trochlea/Patella)**

Phase I (Weeks 0-12)

• Weightbearing:

- o Weeks 0-2: Non-weightbearing
- o Weeks 2-4: Partial weightbearing (30-40 lbs)
- o Weeks 4-8: Continue with partial weightbearing (progress to use of one crutch at weeks 6-8)
- o Weeks 8-12: Progress to full weightbearing with discontinuation of crutch use

• Bracing:

- o Weeks 0-2: Hinged knee brace locked in extension– remove for CPM and rehab with PT
- o Weeks 2-4: Locked in extension for weight bearing – Can open brace for NWB ROM 0-30°
- o Weeks 4-6: Open brace to 30° for ambulation
- o D/C brace at 6 weeks post-op

• Range of Motion – Continuous Passive Motion (CPM) Machine for 6-8 hours per day for 8 weeks

- o Set CPM to 1 cycle per minute – set at 0-30° for first 3 weeks
- o Starting at week 3 increase flexion 5-10° per day until full flexion is achieved
 - Should be at 90° by week 6 and 120° by week 8
- o PROM/AAROM and stretching under guidance of PT

• Therapeutic Exercises

- o Weeks 0-4: Straight leg raise/Quad sets, Hamstring isometrics
 - Perform exercises in the brace if quad control is inadequate
 - o Weeks 4-10: Begin isometric closed chain exercises
 - At week 6 can start weight shifting activities with operative leg in extension
 - o At week 8 can begin balance exercises and stationary bike with light resistance
 - o 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

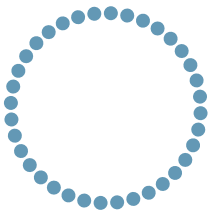
- o Gait training/treadmill use at slow-moderate pace
- o Progress balance/proprioception exercises

 Name

 Date

 Diagnosis

 Date of Surgery



- o Start sport cord lateral drills

Phase III (Months 6-9)

- **Weightbearing:** Full weightbearing with a normal gait pattern
- **Range of Motion** – Advance to full/painless ROM
- **Therapeutic Exercises**
 - o Advance closed chain strengthening/Start unilateral closed chain exercises
 - o Progress to fast walking and backward walking on treadmill (add incline at 8 months)
 - o Start light plyometric training

Phase IV (Months 9-18)

- **Weightbearing:** Full weightbearing with a normal gait pattern
- **Range of Motion** – Full/Painless ROM
- **Therapeutic Exercises**
 - o Continue closed chain strengthening exercises and proprioception activities
 - Emphasize single leg loading
 - o Sport-specific rehabilitation – jogging/agility training at 9 months
 - o Return to impact athletics – 16 months (if pain free)
- Maintenance program for strength and endurance

Comments:

Frequency: _____ **times per week** **Duration:** _____ **weeks**

Signature: _____ **Date:** _____