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**REHAB PROTOCOL: Matrix-Induced Autologous Chondrocyte Implantation (MACI)- Trochlea/Patella**

**Name:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Diagnosis:** \_\_\_\_\_

**Date of Surgery:** \_\_\_\_\_

**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

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- 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

### **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
- 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:** \_\_\_\_\_