

**Autologous Chondrocyte Implantation - Patellofemoral with Distal Realignment Protocol**

**PHASE 1 (0-12 weeks):**

- **Weight Bearing**
  - \*0-6 weeks: heel touch weight bearing (20%)
  - 6-8 weeks: transition to full weight bearing
- **Brace**
  - 0-2 weeks: locked in full extension (remove for CPM/exercise/hygiene)
  - 2-4 weeks: 0-40° (locked in full extension when ambulating)
  - 4-6 weeks: 0-60° (locked in full extension when ambulating)
  - 6-8 weeks: wean from brace
- **ROM**
  - 0-6 weeks: CPM for total of 6-8 hours/day. Begin 0-30° and progress to 0-60° as tolerated  
\*\* May let knee hang to 90° up to 3x/day for a few minutes to prevent stiffness
  - 6+ weeks: progress to full ROM, d/c CPM
- **Therapeutic Exercise**
  - 1-6 weeks:
    - quad sets
    - co-contractions
    - isometric abduction/adduction
    - ankle strengthening
  - 6-10 weeks:
    - SLR
    - partial wall sits
    - terminal knee extension with Theraband
    - knee ROM
  - 10-12 weeks:
    - hamstring strengthening
    - Theraband resistance exercises up to 45°
    - light open chain exercises
    - hip and knee ROM

**PHASE 2 (12 weeks-6months):**

- **Weight Bearing**
  - Full with normalized gait pattern
- **Brace**
  - None
- **ROM**
  - Full
- **Therapeutic Exercise**
  - Begin treadmill walking at slow pace
  - Progress to balance/proprioception exercises
  - Initiate sports-specific drills

**PHASE 3 (6-12 months):**

- **Weight Bearing**
  - Full
- **ROM**
  - Full
- **Therapeutic Exercise**
  - advance close chain strengthening exercises focusing on single leg strength
  - progress to walking and plyometric movement
  - initiate light plyometrics

**Phase 4 (12-18 months):**

- **Weight Bearing**
  - Full
- **ROM**
  - Full
- **Therapeutic Exercise**
  - continue strength training
  - emphasize single leg loading
  - progressive running/agility program
  - high impact at 18 months

**Return to Sport/Work Criteria:** Dynamic neuromuscular control with multi-plane activities without pain or swelling.

\* WB is restricted for the first 4-6 weeks to protect the bony portion of the procedure.

\*\* Postoperative stiffness in flexion following trochlear/patellar implantation is not uncommon and patients are encouraged to achieve 90° of flexion at least 3x/day out of the brace after their first postoperative visit (7-10 days).

Note: If significant pain or swelling occurs with any activity, the protocol must be modified to decrease symptoms as per physician recommendations