

# Tibiofemoral Cartilage Restoration

## Physical Therapy Protocol

### Phase I – Protection & Mobility (Post-Op Weeks 1–3)

#### Goals:

- Protect the surgical site.
- Control inflammation and pain.
- Begin early controlled motion within set limitations.

#### Precautions:

- Use TROM brace:
  - Week 1: 0–30°
  - Weeks 2–3: 0–45°
- Weight Bearing:
  - Week 1: 20% body weight
  - Increase by 10% each week
  - Full WB by Week 8

#### Exercises:

- Isometric quadriceps sets
- Straight Leg Raises (SLR)
- Open Kinetic Chain (OKC) strengthening within ROM limits

### Phase II – Strength (Post-Op Weeks 4–6)

#### Goals:

- Improve lower extremity strength.
- Normalize early muscle activation patterns.

**Activities:**

- Gait training with progressive weight-bearing
- Weight shifting activities
- Emphasis on glute strength and VMO (vastus medialis oblique) control
- Use stationary bike (no resistance) to promote ROM

### **Phase III – Gait Normalization (Post-Op Weeks 7–12)**

**Goals:**

- Achieve full weight bearing.
- Normalize gait pattern and eliminate compensations (e.g., Trendelenburg gait).

**Exercises:**

- Advanced gait training
- Bodyweight squats (as tolerated)
- Begin elliptical (low resistance)

### **Phase IV – Proprioceptive Phase (Post-Op Weeks 13–24)**

**Goals:**

- Enhance joint stability.
- Improve neuromuscular control.

**Activities:**

- Progress to closed kinetic chain (CKC) exercises

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- Advance from double-leg to single-leg strengthening and balance drills
- Increase dynamic proprioceptive training

## **Phase V – Functional Return (Post-Op Month 6 and Beyond)**

### **Goals:**

- Safely return to sport and high-level functional activities.

### **Activities:**

- Initiate structured return-to-running program
- Begin sport-specific drills (e.g., cutting, jumping, agility drills)
- Continue progressive strengthening and balance training