

Articular Cartilage Restoration – Patellofemoral Compartment Post-Operative Protocol

Phase I – Maximum Protection

Weeks 0 to 2:

- Brace – 0-20 degrees for 6 weeks
- CPM 8 hours per day for 6 weeks
- Partial-weight bearing with 2 crutches for 1-2 weeks

Goals

- Ice and modalities to reduce pain and inflammation
- Emphasize patella mobility
- Restore knee extension range of motion

Exercise progression

- Begin full passive/active knee range of motion exercises
- Quadriceps setting focusing on VMO restoration
- Multi-plane open kinetic chain straight leg raising
- Gait training
- Stationary bike at week 1, no resistance

Phase II – Progressive Stretching and Early Strengthening

Weeks 2 to 6:

- Brace – 0-20 degrees for 6 weeks
- CPM 8 hours per day for 6 weeks

Goals

- Continue with modalities to control inflammation
- Restore full knee range of motion

Exercise progression

- Core strengthening program
- Deep water pool exercise program (when incisions healed)
- Multi-plane foot, ankle and hip strengthening
- Begin double-limb closed chain exercise, brace on

Phase III – Strengthening and Proprioceptive Phase

Weeks 6 to 12:

- Open brace as follows:
 - 0-45 degrees for 3 days
 - 0-60 degrees for 3 days
 - 0-90 degrees for 3 days
 - Wean out of brace by week 8 to 9
- Discontinue CPM

Goals

- Normalized gait
- Good quad control in single leg stance

Exercise progression (avoid impact activities)

- Advance core strengthening program
- Advance time and intensity on bike
- May begin treadmill or elliptical trainer - no running
- Begin step-up progression
- Leg press, hamstring curls and calf raises with gradual progression

Phase IV– Advanced Strengthening

Weeks 12 to 20:

Goals

- Pass preliminary functional test

Exercise progression

- Advance gym strengthening program avoiding PF provocative exercise (lunges, leg extension...)
- Biking outside, walking, elliptical and swimming

Phase V – Return to Sport Functional Program

Weeks 20 to 24:

- The following progression is designed for athletes desiring to return to impact/running sports. Patients not returning to impact activity are advised to focus primarily on non-impact cardiovascular exercise.

Goals

- Pass return-to-sport functional test between 6-9 months

Exercise progression

- Pool running with progression to dry land
- Linear running drills with gradual progression to lateral and rotational as tolerated
- Continue with lower extremity strengthening, cardiovascular training, core and flexibility work
- Double-limb plyometric activity with gradual progression to single-limb as tolerated
- ***Will see progressive improvement in all functional activities from 6 to 12 months. Must demonstrate patience and use sound judgment with load and rest intervals when returning to higher level activity.***

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