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**KNEE FEMORAL CONDYLE OR TIBIAL PLATEAU CARTILAGE REPAIR**  
**PHYSICAL THERAPY PROTOCOL**

The intent of this protocol is to provide guidelines for progression of rehabilitation and is not intended to serve as a substitution for clinical decision-making. Progression through each phase of rehabilitation should take into account tissue-healing time frames, clinical objective findings, and MD approval to ensure structural stability. There will be variability between patients in terms of time frames and it is crucial not to progress through phases until the individual meets the appropriate requirements.

**INITIAL PRECAUTIONS**

**Weight Bearing:**

- 0-6 weeks → Touchdown Weight Bearing
- 6-8 weeks → Progress to WBAT, approximately 25% per week with 2 crutches
- Crutch weaning and D/C is dependent walking without a limp (after 8 weeks)

**Initial ROM Related Restrictions:**

- Hinged knee brace locked in extension for 2 weeks
  - Can come out for CPM and exercises only
- CPM 0-40°, advance 10° daily
  - Use for 6 hours per day
- Work on regaining/maintaining terminal extension
- Week 3: Brace can be discontinued

**PHASE 1 – PROTECTION PHASE (1-6 weeks)**

**Goals:**

- Optimize bone and tissue healing and limit scar formation
- Protect surgical repair
- Reduce effusion, swelling and pain
- Restore knee ROM
- Promote normal proprioceptive and neuromuscular control

**Tissue Healing**

- PRICE – Protection, Rest, Ice, Compression, Elevation
- Scar massage after incision is healed

**Gait**

- 2 crutches at all times

POW 1-2

- Calf Pumps
- Patella, patella tendon and quadriceps tendon mobilization
- Quad activation working on terminal extension
- Quad sets
- Straight leg raises (if no lag, in brace)
- Passive leg hangs to 90 degrees

POW 2-6

- PROM/AAROM to tolerance
- Quad/Hamstring/Glute sets
- Open chain quad exercises
- Quadriceps stretching
- Hamstring and Calf stretching without weight bearing
- Hip and Core strengthening as tolerated
- Heel slides
- POW 4: Pool walking with chest high water (if available) to work on gait

**PHASE 2 – EARLY STRENGTHENING (7-12 weeks)**

**Criteria for advancement to Phase 2:**

- No extensor lag
- Normal joint temperature
- Minimal to no joint effusion

**Goals:**

- Restore near symmetric ROM
- Normalize gait pattern on flat ground
- Maintain trace to no joint effusion
- Tolerate standing and walking activity

Precautions

- Progression of weight bearing and normal gait
- Closed kinetic chain activity preferred after full weight bearing
- No cutting/pivoting/plyometrics

Strength, Proprioception and Neuromuscular Re-education

- Progressive balance training
- Calf raises
- Mini squats
- Step-ups
- Leg presses
- Double leg squats
- Wall squats
- Core, hip and upper body strengthening as appropriate

Cardio

- Stationary Bike no resistance

### **PHASE 3 – PROGRESSIVE STRENGTHENING (12-24 weeks)**

#### **Criteria for Advancement to Phase 3:**

- Full weight bearing
- Normalize gait pattern on flat ground
- Maintain trace to no joint effusion
- Tolerate standing and walking activity

#### **Goals:**

- Build lower extremity strength, endurance, and balance.
- Quad strength 90% of contralateral side
- Normal gait/form with straight line running

#### **Precautions**

- No cutting/pivoting activities

#### **Strengthening, Proprioception and Neuromuscular Re-education**

- Double leg squats
- Leg press
- Static lunges
- Dynamic lunges
- Balance training
- Core, hip and upper body strengthening as appropriate

#### **Cardio**

- Stationary bike with progressive resistance
- Elliptical use and treadmill walking
- Swimming

**PHASE 4 – RETURN TO SPORT (WEEKS 24+)**  
**Return to Sport at 8+ Months with MD approval**

**Criteria for advancement to Phase 4**

- Good form on Phase 3 exercises
- Progressive strength/endurance development
- No joint effusion after phase 3 activities

**Goals:**

- Build lower extremity muscular strength
- Train balance and power
- Progress to sport specific activities as tolerated

**Precautions**

- None

**Strengthening, Proprioception and Neuromuscular Re-education**

- Same as above:
  - Single leg squats
  - Single leg dead-lifts
  - Step ups/downs
  - Multidirectional lunges
- Plyometric and cutting and pivoting exercises
  - Progression as tolerated with good form/control

**Return to Sport Criteria**

- Full active range range of motion
- No effusion
- Vertical jump, single leg hop distance, and timed single leg hop over 20 feet >85% contralateral side
- Quadriceps strength: Single leg press >90% contralateral side