

# Patellar Fracture: Open Reduction Internal Fixation (ORIF)

## Physical Therapy Protocol

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### General Guidelines

- Weight Bearing: As tolerated in a locked ROM brace.
- Transfers: Assisted for the operative leg.
- Knee Extension: Avoid active knee extension for the first 2 weeks.
- Brace Settings:
  - Initially locked at 0° for the first 2 weeks.
  - Gradually unlock to 30° as tolerated for ambulation and ADLs.
  - Transition to full range by Week 6, based on quad control.
- Sleep: Brace should remain locked at 0° during sleep unless directed otherwise.
- Elevation & Cryotherapy: Elevate the leg and use cryotherapy to manage pain and swelling.

- Showering: Keep surgical incisions dry for the first 5 days. May shower after the first 5 days, with precautions to protect the incision.
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## **Phase 1: Day 1 to Two Weeks After Surgery**

### **Goals:**

- Protect the fracture site.
- Begin gentle exercises to promote circulation and prevent stiffness.
- Initiate pain management and reduce swelling.

### **Interventions:**

- Brace Use: Locked at 0°.
- ROM Exercises:
  - Ankle pumps.
  - Straight-leg raises.
- Pain Management: Cryotherapy, elevation, and prescribed pain medications.
- Mobility: Gait training with crutches, toe-touch weight-bearing.

### **Criteria for Progression:**

- No significant pain or swelling.
  - Maintain passive movement in distal joints (ankle, foot, toes).
  - Tolerates early ROM exercises without discomfort.
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## **Phase 2: Two to Six Weeks After Surgery**

### **Goals:**

- Gradually restore passive and assisted range of motion (ROM).
- Avoid excessive loading on the patella.
- Begin early quadriceps activation.

### **Interventions:**

- ROM Progression:
  - Unlock brace to 30° as tolerated.
  - Gradual increase in knee flexion (goal: 90° by Week 6).
- Strengthening:
  - Isometric quadriceps activation.
  - Straight-leg raises with brace locked.

- Hamstring and glute activation.
- Aerobic Exercise:
  - Non-weight-bearing exercises such as stationary cycling with minimal resistance.

#### **Criteria for Progression:**

- Gradual improvement in ROM.
  - No pain during controlled knee movement.
  - Ability to tolerate weight-bearing without increased swelling.
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### **Phase 3: Six to Twelve Weeks After Surgery**

#### **Goals:**

- Initiate weight-bearing exercises as tolerated.
- Continue progression of ROM and strengthening.
- Begin returning to functional activities.

#### **Interventions:**

- ROM Progression:

- Continue unlocking brace to allow increased flexion.
  - Full ROM by Week 12.
- Strengthening:
  - Active-assisted range of motion (AAROM) for quadriceps.
  - Isometric and isotonic strengthening.
  - Begin light closed-chain exercises (e.g., partial squats, step-ups).
- Functional Mobility:
  - Controlled weight-bearing activities.
  - Gradual reintroduction to daily activities.

#### **Criteria for Progression:**

- Increased ROM without pain.
- Tolerates strengthening and weight-bearing exercises.
- No complications such as swelling or instability.

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## **Phase 4: Twelve Weeks to Six Months After Surgery**

### **Goals:**

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- Restore full functional mobility.
- Rebuild strength and endurance.
- Prepare for return to activity.

### **Interventions:**

- Progressive Strengthening:
  - Continue building quadriceps, hamstrings, and glutes.
  - Introduce resistance training.
- Functional Exercises:
  - Squats, lunges, and step-ups.
  - Low-impact sports drills if appropriate.
- Neuromuscular Training:
  - Balance and proprioception exercises.

### **Criteria for Progression:**

- Strength and ROM approaching pre-injury levels.
- No pain or discomfort with daily activities.
- Ability to perform functional movements safely.

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## **Phase 5: Six Months and Beyond**

### **Goals:**

- Full return to work and sports activities.
- Advanced strengthening and impact training.
- Prevention of re-injury.

### **Interventions:**

- Return to Full Activity:
  - Gradual reintroduction to work and recreational activities.
  - High-impact training as tolerated.
- Heavy Strengthening:
  - Resistance training for all lower extremity muscles.
  - Plyometric and sports-specific drills.
- Functional Testing:
  - Assessment of strength, endurance, and agility before full clearance.

### **Criteria for Full Return:**

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- Pain-free knee function.
  - Strength comparable to the uninjured side.
  - Ability to perform all activities with no discomfort.
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## **Patient Education and Red Flags**

### **Key Reminders:**

- Follow all rehabilitation guidelines carefully to prevent complications.
- Communicate any pain, swelling, or difficulty progressing with your physical therapist or surgeon.
- Stay consistent with your physical therapy schedule to optimize recovery.

### **Red Flags:**

- Persistent or worsening pain after prescribed exercises.
- Significant swelling or bruising that does not improve with rest.
- Difficulty moving the knee without significant discomfort.
- Signs of infection at the surgical site (redness, warmth, discharge).

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