

Patellar Fracture: Open Reduction Internal Fixation (ORIF)

Physical Therapy Protocol

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.

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).

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- Tolerates early ROM exercises without discomfort.

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.

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.

Phase 4: Twelve Weeks to Six Months After Surgery

Goals:

- 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.

Phase 5: Six Months and Beyond

Goals:

- Full return to work and sports activities.
- Advanced strengthening and impact training.

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- 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:

- Pain-free knee function.
- Strength comparable to the uninjured side.
- Ability to perform all activities with no discomfort.

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).