

NON-OPERATIVE REHABILITATION PROTOCOL

Non-Operative Patellofemoral Pain

William McLaughlin, MD | Sports Medicine Surgery | Advanced Bone & Joint

Underlying philosophy: minimize compressive forces and exercise the quadriceps in pain-free arcs (initially 0-30°), advancing the arc as tolerated.

Isometric & Flexibility Program

GOALS FOR THIS PHASE

- Activate quadriceps and hip musculature with multi-angle isometrics in pain-free arcs.
- Restore lower-extremity flexibility.
- Control pain and inflammation with electrical stimulation and modalities.

Isometrics

- Multiple-angle isometrics.
- SLR at 15° — perform in neutral rotation with leg externally rotated.
- Hip adduction, abduction, extension, flexion.
- Electrical stimulation.
- Cryotherapy and modalities PRN.

Flexibility

- Achilles.
- Hamstrings.
- Medial / lateral hip / thigh.
- Quadriceps.
- Iliotibial band.
- Lateral retinacular stretching / medial glide.

PRE Progression (0-30° Arc)

GOALS FOR THIS PHASE

- Progress strengthening in a pain-free arc (initially 0-30°).
- Build from closed-chain eccentrics through open-chain isotonic.
- Progress ROM beyond 30° flexion when tolerated.

Strengthening Sequence

- Closed-chain isotonic — eccentric.
- Closed-chain isotonic — concentric (e.g., step-ups, short-arc squats).
- Open-chain eccentric isokinetics.
- Open-chain concentric isokinetics.
- Open-chain eccentric isotonic (knee extension).
- Open-chain concentric isotonic, submaximal.
- Open-chain concentric isotonic, maximal.
- Progress ROM beyond 30° flexion.

Other Therapeutic Activities

GOALS FOR THIS PHASE

- Address kinetic-chain contributors (calf, hip external rotation).
- Build endurance and functional closed-chain strength.
- Return to running and sport progressively.

Activities

- Assess for patellar taping benefit.
- Short-crank bicycle.
- Swimming.
- Retrograde ambulation.
- Calf and hip PREs — emphasize hip external rotation strength.
- Muscle endurance activities.
- Functional closed-chain exercises for quadriceps strengthening.
- NordicTrack.
- Progress to StairMaster / VersaClimber, short arc.
- Jogging.
- Progress to running / sprinting.

This protocol is a general guideline. Progression is patient-specific and at the discretion of William McLaughlin, MD.