



The Orthopaedic & Fracture Clinic

Postoperative Rehabilitation Principles for Anatomic Medial Knee Reconstruction

Phase I (0 – Two Weeks Post Op)

Goals:

- Control effusion and pain.
- Flexion ROM (within safe zone) to 90° of knee flexion.
- Maintain full extension.
- Reactivate quadriceps muscle.
- Straight leg raises with no knee extension lag.
- Patellofemoral mobility.

Weight-Bearing:

- Non weight-bearing.

Brace:

- Wear brace at full extension at all times, except for passive motion for therapy.

Range of Motion:

- Emphasize full extension.
- Knee flexion from 0° to 90°.

Therapeutic Exercises:

- Cryotherapy for edema control.
- ROM exercises.
- Quadriceps and hamstring strengthening.

Precaution:

- Avoid valgus and internal and external rotation through the knee joint.

Phase II (Two – Six Weeks Post Op)

Goals:

- Effusion resolved.
- Knee flexion ROM $\geq 115^\circ$.
- Preserve full knee extension.
- Quadriceps and straight leg raises with no extension lag.

Weight-Bearing:

- Non weight-bearing.

Brace:

- Wear brace when up and about and while sleeping.
- Hinged brace open into flexion per quadriceps functional control.

Range of Motion:

- Full extension.
- Progressive flexion as tolerated.

Therapeutic Exercises:

- Continue per Phase I.
- Initiate upright stationary bike at week four with no resistance.
- Progress to intermediate core and proximal hip strengthening exercises.
- Initiate prone or standing hamstring curls (active flexion, passive extension).

Precaution:

- Continue to avoid valgus and internal and external rotation strain through the knee joint.

Phase III (Six – Eight Weeks Post Op)

Goals:

- ROM with no knee extension lag.
- Quadriceps girth returning.
- Normal gait mechanics performed.

Weight-Bearing:

- As tolerated with bilateral crutches.
- Progress to full weight-bearing per quadriceps control with no gait deviation.

Brace:

- Gradually open fully per quadriceps control.
- Discontinue use when ambulating with full weight-bearing and no gait deviation.

Range of Motion:

- Full, symmetrical.

Therapeutic Exercises:

- Initiate closed-kinetic-chain strengthening in bilateral support ($\leq 70^\circ$ of knee flexion).
- Continue to progress to intermediate core and proximal hip strengthening exercises.
- Initiate basic lower extremity proprioception and balance drills with bilateral support.

Precautions:

- Limit bilateral squats to $\leq 70^\circ$ of knee flexion.
- No pivoting on a planted foot.
- Observe and correct for knee/hip alignment with closed-kinetic-chain drills.
- Observe for continued effusion, pain with weight-bearing, and home exercise program progression.

Phase IV (8 – 12 Weeks Post Op)

Goals:

- Restore normal gait mechanics with closed-kinetic-chain lower extremity activities.
- Resume normal stair climbing.
- Normalization of walking speed and distance.
- Able to perform single-leg squat $\geq 45^\circ$ of knee flexion with normal mechanics.

Weight-Bearing:

- Full weight-bearing, no restrictions.

Brace:

- Protective use for dynamic activities when out of home, hinged brace open per quadriceps control.

Range of Motion:

- Full, symmetrical.

Therapeutic Exercises:

- Progress to closed-kinetic-chain strength drills to single leg.
- Progress lower extremity proprioception and balance drills to single-leg.
- Initiate light cardiovascular exercise with bike.
- Add bilateral support for large muscle group weight training.

Precautions:

- Continue to observe for proper lower extremity alignment and mechanics with closed-kinetic-chain exercise.
- No use of knee extension machine.

Phase V (12 – 16 Weeks Post Op)

Goal:

- Able to perform single-leg squat $\geq 60^\circ$ of knee flexion with normal mechanics.

Weight-Bearing:

- Full weight-bearing, no restrictions.

Brace:

- No brace.

Range of Motion:

- Full, symmetrical.

Therapeutic Exercises:

- Continue per Phase IV.
- Progress cardiovascular activity with bike, elliptical, walking, and flutter-kick swimming.
- Progress weight training to single-leg.

- Progress lower extremity proprioception and balance drills with surface challenge: BOSU (BOSU, Canton, OH), Airex (Airex, AG, Sins, Switzerland), and DynaDisc (Exertools Inc., Petaluma, CA).

Precautions:

- Patient demonstrates good control in concentric and eccentric phases with weight training exercises.
- Able to preserve proper lower extremity alignment with proprioception, balance, and closed-kinetic-chain drills.

Phase VI (16 – 20 Weeks Post Op)

Goal:

- Patient demonstrates good self-awareness of proper lower alignment with closed-kinetic-chain and impact drills.

Weight-Bearing:

- Full weight-bearing, no restrictions.

Brace:

- No brace except for dynamic activities.

Range of Motion:

- Full, symmetrical.

Therapeutic Exercises:

- Directional lunging.
- Interval jogging (straight line, no hills).
- Initiate basic agility/footwork drills.
- Initiate basic double-leg plyometric drills.
- Dynamic and directional challenge to lower extremity proprioception and balance drills.

Precautions:

- Continue to observe for proper lower extremity alignment and mechanics with closed-kinetic-chain.
- Observe for continued effusion and pain control with initiation of impact activity.

Phase VII (20+ Weeks Post Op)

Goals:

- Patient to become independent with exercise program and demonstrate good self-awareness of proper lower extremity alignment during high-level drills.
- Return to sport once strength returns and clinical/objective stability is verified.

Weight-Bearing:

- Full weight-bearing, no restrictions.

Brace:

- No brace except for sports.

Range of Motion:

- Full, symmetrical.

Therapeutic Exercises:

- Continue with weight-room strength training.
- Progress plyometric drills.
- Progress speed/intensity of agility drills.
- Initiate acceleration/deceleration drills.
- Initiate cutting drills.
- Initiate sport-specific drills.

Precaution:

- Avoid functional valgus at knee with deceleration, cutting, and jumping drills.