



PATELLAR DISLOCATION / VMO ADVANCEMENT / TIBIAL TUBERCLE TRANSFER

PHASE I (Acute) Week 1

Weight Bearing

1. Touch weight bearing using two crutches and knee immobilizer.

Modalities

1. Ice, electrical stimulation.
2. Compression and elevation as needed to control pain and swelling.
3. Ice for 10-20 minutes post activity throughout protocol.
4. After 48 hours, heat and ultrasound (note if any hardware present).

Orthotics

1. Knee immobilizer at all times except for exercises

Exercises

1. Quadriceps/hamstring sets (sub-maximal, sub-painful)
2. Hamstring, calf, iliotibial band stretching.
3. Ankle pumps, all planes
4. Straight leg raises:
 - a. Standing only, all planes, no resistance, in brace.
5. Post-op patients only:
 - a. gravity assisted ROM, 0-45 degrees only.
6. Non-op patients:
 - a. Seated knee flexion, passive extension.
 - b. Wall slides, passive extension.

PHASE II (Intermediate) Weeks 2 - 4

Weight Bearing

1. Progress WBAT using knee immobilizer at all times.

Modalities

1. Continue Phase I modalities as needed.

Orthotics

1. Knee immobilizer at night and for all weight bearing activity.
2. Use Breg® PTO orthosis or j-pad equivalent for all exercises.
3. Wean out of knee immobilizer and Breg®PTO full time.

Exercises

1. Progress Phase I exercises as tolerated.
2. At start of Week 4:
 - a. Post-op patients only may progress ROM exercises to 0-90 degrees as tolerated.
 - b. Non-op patients may progress ROM to full as tolerated at the start of Week 3.
3. Proprioceptive exercises in brace.

4. Bilateral progress to unilateral as tolerated.
5. May progress straight leg raises to supine/lying:
 - a. No resistance.
6. Neuromuscular re-education as needed.

Weeks 5 - 8

Weight Bearing

1. Progress to normal gait pattern with Breg® PTO type orthosis.

Modalities

1. Continue only as needed.

Orthotics

1. Continue use of Breg® PTO type orthosis.

Exercises

1. Progress Phase II exercises.
 - a. Add resistance to straight leg raises in brace as tolerated.
2. Progress post-op patients to full ROM as tolerated.
3. When all patients have full non-painful AROM, may progress into the following exercises:
 - a. Terminal knee extension, progress resistance with cuff weights.
 - b. Closed chain activity:
 - i. Stationary bike (six minutes, progress).
 - ii. Shuttle (bilateral, progress to unilateral, progress resistance as tolerated).
 - c. Pool activity
 - i. Cycling.
 - ii. Straight leg flutter kicks.
 - iii. Mini-squats to 30 degrees (progress with resistance, progress to land).
 - iv. Lateral step-ups (progress as tolerated, progress to land).

PHASE III (Advanced) Weeks 9 - 12

Orthotics

1. May use orthosis for exercise only. Recommend use of orthosis for exercise for 6-12 months at the discretion of the physician.

Exercises

1. Progress Phase II exercises.
2. Aggressive full-arc isotonic hamstring/quadiceps.
3. Progress from cuff weights to stations as tolerated.
4. When patient demonstrates 65% or greater quadriceps strength compared to contra-lateral knee, may progress to the following exercises:
 - a. Jump rope.
 - b. Plyosled bounding.
 - c. Running program.
 - d. Functional activities (return to work/sport).
 - e. When patient demonstrates 90% or greater quadriceps strength compared to contra-lateral knee, may progress back to sport and discontinue formal rehabilitation.
5. Home exercise program
6. Refer to fitness center.