

HIGH TIBIAL OR FEMORAL OSTEOTOMY PROTOCOL

GENERAL GUIDELINES

- No closed kinetic chain exercises for 6 weeks
- Rehabilitation protocol is the same for femoral or tibial osteotomy
- Rehabilitation for ACL reconstruction combined with high tibial osteotomy is dictated by the HTO protocol.
- Supervised physical therapy takes place for 3-6 months post-operatively.

GENERAL PROGRESSION OF ACTIVITIES OF DAILY LIVING

Patients may begin the following activities at the dates indicated (unless otherwise specified by the physician):

- Bathing/Showering without brace after suture removal
- Sleep with brace locked in extension for 2 weeks then no brace at night after 2 weeks
- Driving: 1 week for automatic cars, left leg surgery
6 weeks for standard cars or right leg surgery
- Brace locked in extension for 2 weeks for ambulation then 0-90° while ambulating (heel touch weight bearing until 6 weeks)
- Use of crutches, brace for ambulation for 8 weeks post-op
- Heel touch weight-bearing for first 6 weeks.
- Increase 25% weight bearing each week starting after 6 weeks

REHABILITATION PROGRESSION:

The following is a general guideline for progression of the rehabilitation program following femoral or tibial osteotomy. Progression through each phase should take into consideration patient status (e.g. healing, function) and physician advisement. Please consult the attending physician if there is any uncertainty regarding advancement of a patient to the next phase of rehabilitation.

PHASE I:

Begins immediately post-op through approximately 4 weeks.

Goals:

- Protect fixation and surrounding soft tissue
- Control inflammation

- Minimize the adverse effects of immobilization with heel slides from 0-90° of knee flexion and patellar mobilizations.
- Full knee extension and 90° of flexion
- Educate patient regarding rehabilitation progression

Brace:

- 0-2 weeks: Locked in full extension for all activities except therapeutic exercises. Locked in full extension for sleeping.

Weightbearing Status:

- 0-6 weeks: Heel touch-weightbearing with two crutches

Therapeutic Exercises:

- Ankle pumps
- Quad sets
- Aggressive patellar mobilizations in 4 planes
- Heel slides from 0-90° of flexion
- Non-weightbearing calf, hamstring stretches
- SLR in four planes with brace locked in full extension
- Resisted ankle plantar flexion with theraband

PHASE II:

Begins approximately 4 week post-op and extends to approximately 6 weeks. Criteria for advancement to Phase II:

- Good quad set
- Approximately 90° of flexion
- No signs of active inflammation

Goals:

- Increase range of flexion
- Avoid overstressing fixation
- Increase quadriceps strength

Brace:

6 weeks: Brace unlocked for ambulation (done after 6 weeks)

Weightbearing Status:

After 6 weeks: Increase 25% each week until full

Therapeutic Exercises:

- Continue exercises as noted above, progress towards full flexion
- Discontinue CPM if knee flexion is at least 90°
- Aggressive patellar mobilizations in 4 planes
- Initiate aquatic therapy with emphasis on normalization of gait pattern

- Remove brace for SLR exercises, must be able to maintain full extension
- Initiate stationary bike, low resistance

PHASE III:

Begins approximately 6 weeks post-op and extends through approximately 8 weeks. Criteria for advancement to Phase III:

- Good quadriceps tone and no extension lag with SLR
- Full extension
- Flexion 90-100°

Brace:

Discontinue brace at 8 weeks post-op as allowed by physician.

Weightbearing Status:

May discontinue use of crutches if the following criteria are met:

- No extension lag with SLR
- Full extension
- Non-antalgic gait pattern (may use one crutch or cane until gait is normalized)

Therapeutic Exercises:

- Mini-squats 0-45°, progressing to step-ups
- 4-way hip for flexion, extension, adduction, abduction
- Stationary bike, add moderate resistance
- Leg press 0-60° of flexion
- Closed kinetic chain terminal knee extension with resistive tubing or weight machine
- Toe raises
- Balance exercises (e.g. single-leg standing, KAT)
- Hamstring curls

PHASE IV:

Begins at approximately 3 months post-op and extends through approximately 9 months.

Criteria for advancement to Phase IV:

- Good to normal quadriceps strength
- No soft tissue complaints
- Normal gait pattern
- Clearance from physician to begin more concentrated closed kinetic chain exercises, and resume full or partial activity.

Goals:

- Continue improvements in quadriceps strength
- Improve functional strength and proprioception
- Return to modified activity level

Therapeutic Exercises:

- Progression of closed kinetic chain activities

- Treadmill walking
- Swimming
- Jogging in pool with wet vest or belt
- Sports-specific activities or work hardening as appropriate.