



AUCKLAND BONE AND JOINT SURGERY

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HIGH TIBIAL OR DISTAL FEMORAL OSTEOTOMY REHABILITATION PROTOCOL

GENERAL GUIDELINES

- No closed kinetic chain exercises for 6 weeks
- Rehabilitation protocol is the same for tibial or femoral osteotomy
- Rehabilitation for ACL reconstruction combined with high tibial osteotomy (HTO) is dictated by the HTO protocol
- Supervised physiotherapy 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 Dr. Boyle):

- Bathing/showering without brace after suture removal
- Sleep with brace locked in extension for 4 weeks
- Driving: 1 week for automatic transmission cars, left leg surgery
6 weeks for manual transmission cars or right leg surgery
- Brace locked in extension for 4 weeks for ambulation
- Use of crutches and brace for ambulation for 6-8 weeks post-op
- Non weight-bearing for first 6 weeks
- Weight bearing as tolerated in full extension week 7

REHABILITATION PROGRESSION:

The following is a general guideline for progression of the rehabilitation program following tibial or femoral osteotomy. Progression through each phase should take into consideration patient status (e.g. healing, function) and surgeon advisement. Please consult Dr. Boyle 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 after surgery

Goals:

- Protect fixation and surrounding soft tissue
- Control inflammation
- Minimize the adverse effects of immobilization (use heel slides from 0-90° of knee flexion)
- Full knee extension and 90° of flexion
- Educate patient regarding rehabilitation progression

Brace:

- 0-4 weeks: locked in full extension for all activities except therapeutic exercises; locked in full extension for sleeping

Weightbearing Status:

- 0-6 weeks: non-weightbearing with two crutches

Therapeutic Exercises:

- Ankle pumps
- Quad sets
- Heel slides from 0-90° of flexion
- Non-weightbearing calf and hamstring stretches
- SLR in four planes with brace locked in full extension
- Resisted ankle plantarflexion with theraband

PHASE II:

Begins approximately 4 week post-op and extends to approximately 6 weeks after surgery.

Criteria for advancement to Phase II:

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

Goals:

- Increase knee range of flexion
- Avoid overstrengthening fixation
- Increase quadriceps strength

Brace:

6 weeks: brace unlocked for ambulation

Weightbearing Status:

6 weeks: as tolerated with two crutches

Therapeutic Exercises:

- Continue exercises as noted above, progress towards full knee flexion
- Initiate aquatic/pool therapy with emphasis on normalization of gait pattern
- Remove brace for SLR exercises, must be able to maintain full knee extension
- Initiate stationary bike, low resistance

PHASE III:

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

- Good quadriceps tone and no extension lag with SLR
- Full knee extension
- Knee flexion 90-100°

Brace:

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

Weightbearing Status:

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

- No extension lag with SLR
- Full knee 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 exercises for flexion, extension, adduction, abduction
- Stationary bike, add moderate resistance
- Leg press 0-60° of knee flexion
- Closed kinetic chain terminal knee extension with resistive tubing or weight machine
- Toe raises
- Balance exercises (e.g. single-leg standing)
- Hamstring curls

PHASE IV:

Begins at approximately 3 months post-op and extends through approximately 9 months after surgery. Criteria for advancement to Phase IV:

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

Goals:

- Continue to improve 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