



Meagan McCarthy, MD

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### High Tibial Osteotomy (HTO) Protocol

#### Phase I: 0-6 weeks

*Goals: crutch/brace education, pain and swelling control, range of motion, glute/quad/hamstring activation  
Progressive ROM > 120 by 6 weeks*

#### **Weeks 0-2**

- Non-weight bearing x 6 weeks
- Pain/edema control, patella mobilizations if necessary
- Modalities as needed
- Quad Sets/Hamstring co-contractions at multiple angles 13x10 2-3x's daily
- SLR in brace at 0° until quad can maintain knee locked
- Heel slides
- Calf stretches
- Ankle pumps +/- with leg elevation
- Obtain full extension if lacking

#### **Weeks 2-6**

- Continue what is listed above.
- Crutches and non-weight bearing until 6 weeks post-op

#### **Muscle Strength & Endurance Exercise Suggestions:**

- Quadriceps isometrics in standing/sitting/lying +/- muscle stimulation or biofeedback
- Quads over roll
- Standing closed-chain terminal extension with tubing at knee - forward facing (active terminal extension) and backward facing (passive terminal extension)
- Straight leg raise (on bed) with pelvic stability (all 4 planes)
- S/L clam shells
- Prone knee flexion
- Ankle plantar flexion with theraband



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**Phase II: weeks 6-12**

*Goals: normal gait without assistance, full range of motion, proprioception, strengthening starting with isometrics and progressing appropriately*

*Progress from 2 crutches to one crutch and then full weight bearing over*

**Weeks 6-8**

- Normalize gait
- Baseline proprioceptive/balance re-education
- Weight bearing strengthening of lower extremity muscle groups

**Exercise suggestions:**

- Patellar/tibial/femoral mobilization for terminal ROM
- Mini wall squats, sit to stand, shuttle, calf raise
- Leg press, walking with bands
- Stationary bike

**Phase III: weeks 12+**

*Goals: Continue and advance strengthening: lower chain concentric/eccentric strengthening of core/hips/glutes/quads/hamstrings, dynamic lower chain strengthening, progress cardio training, progress proprioception, sport specific training*

- Progress to jogging/running
- Continue strengthening: lunges, squats,
- Controlled jumping
- Agility progression
- Sport specific exercises (progression)