Physical Therapy Post-Operative Guidelines
Trochleoplasty

Phase I: 0-4 Weeks

**Precautions:** Brace locked at 10°; NO OKC at any point; wound healing

<table>
<thead>
<tr>
<th>Weight Bearing</th>
<th>Brace</th>
<th>ROM</th>
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</thead>
<tbody>
<tr>
<td>• PWB (&lt;50% BW) with brace locked in 10° KF&lt;br&gt;• Use of crutches for symptom control and reduce stress at trochlea</td>
<td>• On &amp; locked at 10° KF at all times except w/CPM or P/AAROM exercises&lt;br&gt;• Discontinue brace for sleep at 4 weeks per comfort level (unless otherwise instructed by MD)&lt;br&gt;• Open when seated</td>
<td>• Emphasize full extension&lt;br&gt;• Progress flexion to 90° KF multiple times per day&lt;br&gt;• CPM 4-6 hours per day&lt;br&gt;• Patellar and peripatellar joint and soft tissue mobilizations permitted&lt;br&gt;• Do NOT force into painful flexion (maintain pain control of 3/10 or less with ROM)</td>
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**Therapeutic Exercise and Activity**

• Establish high quality quad set<br>  *Superior translation of the patella<br>  *Avoid co-contraction with hamstrings and proximal gluteal musculature<br>  *Utilize NMES as needed<br>• SLR x 4<br>  *Flexion: begin in standing → reclined standing → supine<br>  -Progress per quad control, no extensor lag<br>  *Abduction, Adduction, Extension<br>• Beginner mat exercises for abdominal/lumbopelvic control and proximal hip strength<br>• Calf raises<br>• Standing TKE with resistance band<br>• Isometric leg press (at intervals 40-90° KF) at comfortable level of intensity (not moving the load isotonically)

**Goals:** Quad set WNL; Emphasize full knee hyperextension; SLR without lag; full hyperextension-90° ROM; resolve joint effusion
### Phase II: 4-8 Weeks

**Precautions:** Weight bearing progression subject to MD discretion, concomitant procedure precautions, and patient symptom response to activity: Do not progress through increased joint swelling or crepitus - not to be tolerated with protocol progressions

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<td>• PWB → FWB with brace on locked in extension</td>
<td>• Gradually open brace per quad control</td>
<td>• Full knee hyperextension</td>
</tr>
<tr>
<td>• No stair climbing with surgical limb</td>
<td>• Fully open for ROM exercises</td>
<td>• Progress towards full knee flexion ROM (do not force end range knee flexion)</td>
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<td></td>
<td>• Discontinue brace with sleeping at 4 weeks unless otherwise instructed by MD</td>
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**Therapeutic Exercise and Activity (Phase II continued)**

- Initiate bridging with legs over exercise ball/bolster (no plank poses yet)
- Increase reps w/proximal hip/abdom exercises
- Initiate basic 2 limb CKC strength drills
  - *Shallow (0-45˚) KF angles for ↓PFJ stress*
- Calf raises
- Initiate 2 limb L/E proprio/balance
- Marching with balance moment
- Emphasize terminal knee extension control in CKC

**Goals:** Effusion resolving; Full extension ROM; Flexion ROM ≥120˚; Multi-planar L/E hip strength = MMT grade 5/5

### Phase III: 8-12 Weeks

**Precautions:** Proper alignment for squatting activities, no running or impact activities

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<td>• FWB, unless instructed differently by MD</td>
<td>• Open per quad control</td>
<td>• Full, symmetrical ROM</td>
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<tr>
<td><em>Normalize gait pattern, avoiding knee hyperextension in early stance</em></td>
<td>• Protective use when out of home: environmental hazards, crowds</td>
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**Therapeutic Exercise and Activity**

- Progress core activities – side plank from knees, bridging w/ or w/o ball, basic 2 legged prone plank and hip strength
- Initiate basic low impact cardio with bike, elliptical, walking (15-20 minutes, minimal intensity, steady pace)
- Progress CKC drills – step, lunge, leg press
  - *Deeper KF angles (>45˚) with 2 legged support*
  - *Early KF angles (0-45˚) with 1 legged support per control/tolerance*
- Progress L/E proprio/balance drills: single limb per control/tolerance

**Goals:** Effusion resolved; ROM WNL; Progressing toward normal gait pattern in FWB; Able to perform ≥30 reps prior to fatigue with leg lifting; Normal LE kinematics w/2 legged CKC activities

Jill Monson, PT, OCS
Liz Niemuth, PT, OCS

**Trochleoplasty**
**Phase IV: 12-16 Weeks**

**Precautions:** Observe/instruct proper L/E alignment w/CKC drills (avoid functional valgus); Avoid faulty mechanics that lead to PF issues

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<tr>
<td>• FWB</td>
<td>• No brace per MD</td>
<td>• Full ROM</td>
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**Cardiovascular**

- Progress low impact cardio per symptoms – increase one variable at a time (intensity level, intervals, duration)
  - 15-20 min minimal intensity, steady pace to begin

**Proprioception/Balance**

- Progress drills: Add surface challenge/perturbation on DL
  - Single limb activities on level surface
  - Directional reaching and stepping drills

**Core Stability**

- Advance progression of core stabilization and bridging as tolerated

**Strengthening**

- Increase workload with CKC drills:
  - Add resistance with 2 legged squatting
  - Progress depth with single limb (step, lunge, leg press)
  - Initiate large muscle group weight training (HS curls, leg press, calf raises, dead lift, etc.)

**Goals:** Gradual progression back to full non pounding activity based on symptoms response and demonstrated control and strength

*Timeframes in later phases of rehabilitation are estimates only. Patient may be progressed faster/slower based on their ability to attain goals for each phase.

**Phase V (16 weeks+):** Gradual progression back to full activity based on symptom response and demonstrated control and strength. Recreational running and unlimited plyometrics permitted after 4 months when cleared by MD pending radiographic findings. Please reference Return to Sport or High Physical Demand Occupation Protocol for return to further advanced activities for appropriate patients

**NOTE:** Most patients who undertake this operation have limited sport goals and have not routinely engaged in jumping and pounding sports. Define patient goals and expectations up front and modify protocol accordingly.

*Patient to return to University of Minnesota Health Clinics and Surgery Center for physical performance testing at 24 weeks post operatio*