### HIGH Tibial Osteotomy

**Clinical Practice Guideline**

Progression is time and criterion-based, dependent on soft tissue healing, patient demographics and clinician evaluation. Contact Ohio State Sports Medicine at 614-293-2385 if questions arise.

#### Rehabilitation Precautions

- Patient will remain in long-leg post-operative brace for 8 weeks gradually increasing weightbearing status from none/toe-touch to full
- AROM is restricted to 110º for the first two weeks
- AROM is progressed to 135º after two weeks

#### Weeks 1-2

<table>
<thead>
<tr>
<th>Activities</th>
<th>Instructions</th>
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<tbody>
<tr>
<td>Long-leg brace</td>
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<tr>
<td>Weightbearing</td>
<td>None to toe-touch</td>
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<tr>
<td>Patellar mobilizations</td>
<td></td>
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<tr>
<td>Modalities for pain/edema management</td>
<td>Cryotherapy</td>
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<td></td>
<td>Electrical Stimulation</td>
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#### Weeks 3-4

<table>
<thead>
<tr>
<th>Activities</th>
<th>Instructions</th>
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<tbody>
<tr>
<td>Long-leg brace</td>
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<tr>
<td>Weightbearing</td>
<td>25% body weight</td>
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<tr>
<td>Patellar mobilizations</td>
<td></td>
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<tr>
<td>Modalities for pain/edema management</td>
<td>Cryotherapy</td>
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<td></td>
<td>Electrical Stimulation</td>
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<tr>
<td>AROM up to 110º</td>
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<tr>
<td>Stretching</td>
<td>Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps</td>
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<tr>
<td>Strengthening</td>
<td>Quad sets</td>
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<td></td>
<td>Straight leg raises</td>
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<td>Active knee extension</td>
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<td></td>
<td>Closed-chain exercises: toe raises, mini-squats, wall sits, TKE</td>
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<tr>
<td>Conditioning</td>
<td>UBE</td>
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#### Weeks 5-6

<table>
<thead>
<tr>
<th>Activities</th>
<th>Instructions</th>
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</thead>
<tbody>
<tr>
<td>Long-leg brace</td>
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<tr>
<td>Weightbearing</td>
<td>50% to 75% body weight</td>
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<tr>
<td>Patellar mobilizations</td>
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<tr>
<td>Modalities for pain/edema management</td>
<td>Cryotherapy</td>
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<tr>
<td></td>
<td>Electrical Stimulation</td>
</tr>
<tr>
<td>Stretching</td>
<td>Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps</td>
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<tr>
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<td>Quad sets</td>
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<td>Active knee extension</td>
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<td></td>
<td>Closed-chain exercises: toe raises, mini-squats, wall sits, TKE</td>
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<tr>
<td></td>
<td>Leg Press (70º-10º)</td>
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<tr>
<td>Conditioning</td>
<td>UBE</td>
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<td></td>
<td>Stationary bike</td>
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<td>Aquatics program</td>
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</tbody>
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### Weeks 7-8
- Long-leg brace
- Weightbearing
  - 75% to full weight
- Patellar mobilizations
- Modalities for pain/edema management
  - Cryotherapy
- Stretching
  - Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps
- Strengthening
  - Quad sets
  - Straight leg raises
- Active knee extension
- Closed chain exercises: toe raises, mini-squats, wall sits
- Leg press (70-10 o)
- Hip abduction/adduction and/or multi-hip machine
- Knee flexion hamstring curls (90 o)
- Knee extension quadriceps (90-30 o)
- Core strengthening

### Weeks 9-12
- Modalities for pain/edema management
  - Cryotherapy
- Stretching
  - Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps
- Strengthening
  - Quad sets
  - Straight leg raises
  - Active knee extension
  - Closed-chain exercises: toe raises, mini-squats, wall sits
  - Leg Press (70-10 o)
  - Hip abduction/adduction and/or multi-hip machine
  - Knee flexion: hamstring curls (90º)
  - Knee extension: quadriceps (90-30º)
  - Core strengthening
- Balance/Proprioceptive Training
  - Weight-shifts
  - Mini trampoline
  - BAPS board
  - Step-downs
  - BOSU mini-squats
- Conditioning
  - Stationary bike
  - Aquatics program
  - Swimming (kicking motion)
  - Walking
  - Stairclimber/elliptical
- Sport-Specific Activity
  - Jogging/running in a straight line
  - Line jumps
  - Carioca
  - Ladder drills

### 4 Months
- Modalities for pain/edema management
  - Cryotherapy
- Stretching
  - Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps
- Strengthening
  - Leg press (70-10º)
  - Hip abduction/adduction steamboat and/or multi-hip machine
  - Knee flexion: hamstring curls (90º)
  - Knee extension: quadriceps (90-30º)
  - Core strengthening
- Balance/Proprioceptive Training
  - Weight-shifts
  - Mini trampoline
- BAPS board
- Step-downs
- BOSU mini-squats
- Plyometric progression
- Conditioning
  - Stationary bike
  - Aquatics program
  - Swimming (kicking motion)
  - OSU Sports Medicine Revised 2010
  - Walking
  - Stairclimber/elliptical
- Sports-specific exercise (50-75%)
  - Line jumps
  - Carioca
  - Ladder drills
5 Months

- Modalities for pain/edema management
  - Cryotherapy
- Stretching
  - Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps
- Strengthening
  - Leg Press (70-10°)
  - Hip abduction/adduction steamboat and/or multi-hip machine
  - Knee flexion: hamstring curls (90°)
  - Knee extension: quadriceps (90-30°)
- Core Strengthening
- Balance/Proprioceptive Training
  - Weight-shifts
  - Mini trampoline
  - BAPS board
- Plyometric progression
- Conditioning
  - Stationary bike
  - Aquatics program
  - Swimming (kicking motion)
  - Walking
- Return to Sport

6 Months

- Maintain the above therapeutic exercise plan at six months
- Sport-Specific Activity (75-100%)
  - Running straight
  - Cutting movements
    - Carioca
    - Figure 8s
    - 45 degree cuts
    - 90 degree cuts
- Return to Sport

References

