

## **High Tibial Osteotomy**

### **POST-OPERATIVE PHYSICAL THERAPY PROTOCOL**

#### **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 110° for the first two weeks
- AROM is progressed to 135° after two weeks

#### **Weeks 1-2**

- Long-leg brace
- Weightbearing
  - None to toe-touch
- Patellar mobilizations
- Modalities for pain/edema management
  - Cryotherapy
  - Electrical Stimulation
- AROM up to 110°
- Stretching
  - Hamstrings, gastrocnemius/soleus, iliotibial band, quadriceps
- Strengthening
  - Quad sets
  - Straight leg raises
  - Active knee extension

#### **Weeks 3-4**

- Long-leg brace
- Weightbearing
  - 25% body weight
- Patellar mobilizations
- Modalities for pain/edema management
  - Cryotherapy
  - Electrical Stimulation
- AROM up to 135°
- 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, TKE
- Conditioning
  - UBE

### **Weeks 5-6**

- Long-leg brace
- Weightbearing
  - 50% to 75% body weight
- Patellar mobilizations
- Modalities for pain/edema management
  - Cryotherapy
  - Electrical Stimulation
- 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, TKE
  - Leg Press (70°-10°)
- Conditioning
  - UBE
  - Stationary bike
  - Aquatics program

### **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°)
  - Hip abduction/adduction and/or multi-hip machine
  - Knee flexion hamstring curls (90°)
  - Knee extension quadriceps (90-30°)
  - Core strengthening
- Conditioning
  - UBE
  - Stationary bike
  - Aquatics program

### **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 °)
  - Hip abduction/adduction 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
  - 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

#### **4 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 degrees)
  - Knee extension: quadriceps (90-30 degrees)
  - 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)

- 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
  - Step-downs
  - BOSU mini-squats
  - Plyometric progression
- Conditioning
  - Stationary bike
  - Aquatics program
  - Swimming (kicking motion)
  - Walking
  - Stairclimber/elliptical
- Sports-specific exercise (75-100%)
  - Line jumps
  - Carioca
  - Ladder drills

## **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

