



Austin Crow MD

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Post-operative Rehabilitation Protocol **High Tibial Osteotomy (HTO)**

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
- 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
 - 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
- 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%) as indicated
 - Running straight
 - Cutting movements
 - Carioca
 - Figure 8s
 - 45 degree cuts
 - 90 degree cuts
- Return to Sport/Activities with no restrictions