

HIGH TIBIAL OSTEOTOMY (HTO) REHABILITATION PROTOCOL

General notes:

"As tolerated" should be understood to include with safety for the reconstruction/repair; pain, limp, swelling, or other undesirable factors are indicators that you are doing too much too soon. If any of these should occur, decrease activity level, ice and elevate the leg.

Ice should be applied to the knee for 15 to 20 minutes following each exercise, therapy, or training session.

Return to sport based on provider team (physician, physician assistant, athletic trainer, therapist) input and appropriate testing.

All times and exercises are to serve as guidelines. Actual progress may be faster or slower, depending on each individual patient, as agreed upon by the patient and his/her team of providers.

Weeks 0 to 2: Healing Phase

Brace:

Worn at all times (Locked at 00)

Weight Bearing:

NWB (non weight bearing), crutches used at all times.

Therapeutic Exercises:

Ankle pumps, towel stretch for calf, leg prop

Strengthening: Quad sets (squeeze thigh muscles tightly), upper body weight training allowed while seated or lying down, core strengthening

Conditioning: UBE (upper body exercise bike)

Manual Therapy: Patella (knee cap) and soft tissue mobilization

Weeks 3 to 4: Protective Phase/Early motion

Brace:

At all times (Locked at 00)

Weight Bearing:

Partial Weight Bearing (25%)

ROM (range of motion) Goals: passive/active

Flexion/Extension: 0-90 degrees

Therapeutic Exercises:

Ankle pumps, leg prop, towel stretch-calf

Strengthening: Quad sets, four-way SLR in brace (four direction straight leg raises: forward, backward, side/side), upper body strength training, core strengthening

Conditioning: Continue UBE

Manual Therapy: Patella and soft tissue mobilization, PASSIVE ROM to 45 degrees flexion

Weeks 5 to 6: Motion Phase

Brace:

Worn at all times, locked from 0 to 30 degrees flexion

Weight Bearing:

Partial weight bearing (50%-75%); continue with crutches

ROM Goals: passive/active

Flexion/Extension: 0-110 degrees

Therapeutic Exercises:

Ankle pumps, towel stretch, leg prop

Strengthening: Quad sets, 4-way SLR, upper body strength training, core strengthening

Proprioception: Weight-Shifting

Conditioning: Begin stationary bike no longer than 10 minutes without resistance for ROM only

Manual Therapy:

Patella and soft tissue mobilization, PASSIVE ROM 0-750

Weeks 7 to 8: Motion/Strengthening Phase

Brace:

Worn at all times, locked from 0 to 60 degrees flexion

Weight Bearing:

progressing from partial to full, one crutch to none as tolerated

ROM Goals: passive/active

Flexion/Extension: 0-135 degrees

Therapeutic Exercises:

Strengthening: Closed chain exercises, upper body strength training, core strengthening

Proprioception: Weight shifting, balance activities

Conditioning: Exercise bike, elliptical machine

Manual Therapy:

Patella and soft tissue mobilization, PASSIVE ROM 0-1250

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Weeks 9 to 10: Strengthening Phase

Brace:

Worn at all times, locked from 0 to 90 degrees flexion

Weight Bearing:

Full

ROM:

Full

Therapeutic Exercises:

Strengthening: Continue closed chain exercises progression, unrestricted upper body strength training, core strengthening
Proprioception: Multi-direction balance activities
Conditioning: Stationary bike, elliptical machine, treadmill

Manual Therapy:

Patella and soft tissue mobilization as needed

Weeks 11 to 12: Advanced Strengthening Phase

Brace:

None

Therapeutic Exercises:

Strengthening: Continue closed chain exercises progression, unrestricted upper body strength training, core strengthening
Proprioception: Multi-direction balance activities
Conditioning: Stationary bike, elliptical machine, treadmill, begin straight running

Manual Therapy:

Patella and soft tissue mobilization as needed

Weeks 13-24: Sport Specific Phase

Therapeutic Exercises:

Strengthening: Continue closed chain exercises progression, unrestricted upper body strength training, core strengthening
Proprioception: Multi-direction balance activities
Conditioning: Stationary bike, elliptical machine, treadmill, straight running, begin cutting, agility drills, and plyometric activities