

# Brandon Beamer M.D - *Orthopedic Sports Medicine Specialist*

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## High Tibial Osteotomy Rehabilitation Protocol

**Patient:** \_\_\_\_\_

**Date of Surgery:** \_\_\_\_\_

### Goals

1. Control joint pain, swelling hemarthrosis
2. Regain normal knee extension and flexion
3. Regain normal gain pattern
4. Regain normal muscle strength – quads, hamstring, ect.
5. Regain normal proprioception, balance, and sports coordination

### Phase 1 (0-2weeks)

ROM: 0-90: degrees, Passive ROM brace for 6 weeks.

**NON weight bearing for 10weeks** (except for supervised setting)

Patella mobilization

Ankle pumps (Planter flexion with resistance band)

Hamstring, gastroc-soleus stretching

Straight-leg raises (Flexion, extension)

Active quadriceps isometrics (multi-angle: 0, 45, and 60)

Knee extension (active assist 90-30 degrees)

Modalities- cryotherapy, estim, heat.

\*\*\*\*\***Goals**\*\*\*\*\*

ROM 0-45, adequate quadriceps contraction. control inflammation/effusion.

### Phase 2 (3-6 weeks):

ROM passive 0-110.

Patella mobilization.

Ankle pumps Hamstring, Gastroc-soleus stretching.

Strengthen: Isometric training 0-60 degrees, straight-leg raises, knee extension (AAROM, 90-30).

Upper body conditioning- weight OK.

Stationary bike for ROM, minimal resistance.

Modalities PRN.

\*\*\*\*\***Goals**\*\*\*\*\*

ROM 0-110 (passive), muscle control, effusion/inflammation control, 25% weight bearing at 6 weeks.

### Phase 3 (5-6 weeks):

ROM, passive 0-130, continue stretching, hamstring, GS.

SLR's – ankle weight not to exceed 10% of body weight

Closed kinetic chain- wall sits, mini-squats, light leg press (70-10 degrees)

Upper body conditioning, stationary bike (light level 1 or 2), water walking.

Modalities PRN

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## \*\*\*\*\*Goals\*\*\*\*\*

ROM 0-130 passive, muscle, control inflammation/effusion, early recognition of complication, up to 50% weight bearing at 8 weeks.

## Phase 4 (7-8 weeks):

ROM 0-135, passive, work on AAROM, AROM.

Hamstring, GS stretches patellar mobilization.

SLR's (rubber tubing, CKC (closed chain)

Mini-squats

Wall sits (0-30)

Hamstring curls (active, 0-90)

Leg press (70-10)

Upper body conditioning

Stationary bike

## \*\*\*\*\*Goals\*\*\*\*\*

50% weight bearing, muscle control, ROM 0-135

## Phase 5 (9-12 weeks):

ROM emphasis

Strengthen:

All above from Phase 4 including the following:

.Closed chain M70-10 degrees) ini squats (0-40)

. Wall sits

. Lateral step-ups (2-4 inch block)

. Hamstring curls (active 0-90)

. Leg press (70-10 degrees)

- Start balance training- 2-legged balance board, single le stance.

- Aerobic conditional: bicycle, water walking, swimming (straight kick), walking, ski machine (short stride, low resistance),

elliptical, star machine (low resistance).

## \*\*\*\*\*Goals\*\*\*\*\*

0-135 ROM, increase strength and endurance.

## Phase 6 (13-26 weeks):

Continue and advance all Phase 5 strengthening activities

Balance training: continue from Phase 5

Aerobic conditioning: increase resistance as necessary below threshold of knee pain

Running program: Start at 6months, treadmill (light resistance, less than 4MPH) and progress.

**ESTIMATED RETURN TO SPORT / WORK: \_\_\_\_\_**