

## High Tibial Osteotomy and Anterior Cruciate Ligament Reconstruction Rehabilitation Program

### PHASE I – Immediate Postoperative Phase (Day 1-5)

- **Goals:**
  - Diminish swelling/inflammation (control hemarthrosis)
  - Diminish postoperative pain
  - Initiate voluntary quadriceps control
  - Independent ambulation
- **Brace:**
  - Brace for ambulation only (POD 1 to Week 6)
- **Weight Bearing:**
  - As tolerated with two crutches (approx. 50% WB)
- **Swelling/Inflammation Control:**
  - Cryotherapy
  - Compression bandages
  - Elevation and ankle pumps
- **Range of Motion:**
  - Full passive knee extension
  - Flexion to 45° (day 1-4)
  - Flexion to 60° (day 5)
  - PROM and gentle AAROM only
- **Flexibility:**
  - Hamstring and calf stretches
  - PROM/AAROM with ROM limitations

### PHASE II – (Weeks 2-4)

- **Goals:**
  - Control swelling and pain
  - Promote healing of realignment tibial tuberosity
  - Quadriceps strengthening
- **Brace:**
  - Continue brace for ambulation only
  - Discontinue brace (week 8)
- **Weight Bearing:**
  - Unlock brace for ambulation (week 4)
  - Non-weightbearing x6 weeks
  - Partial weightbearing 6-8 weeks
  - Discontinue crutches (week 8)

- **Swelling/Inflammation:**
  - Continue use of cryotherapy
  - Compression bandage
  - elevation
- **Range of Motion:**
  - PROM/AAROM exercises
  - ROM 0-75° (week 1-3)
  - ROM 0-90° (week 4)
- **Muscle Retraining:**
  - Electrical muscle stimulation to quads
  - Quad setting isometrics
  - Straight leg raises (flexion)
  - Hip adduction/abduction
  - Hip extension
  - GENTLE submaximal isometric knee extension
  - Week 4
    - Light leg press
    - Vertical squats (no weight)
- **Flexibility:**
  - Continue hamstring, calf stretches

### **Phase III – Subacute Phase “Motion” Phase (Week 5-8)**

- **Goals:**
  - Gradual improvement in ROM
  - Improve muscular strength and endurance
  - Control forces on extension mechanism
- **Weight Bearing:**
  - One crutch (week 4-6)
  - Discontinue crutch (week 6)
- **Range of Motion:**
  - PROM 0-115°
  - PROM 0-125°
  - PROM 0-125/135°
- **Exercises:**
  - Continue electrical muscle stimulation to quadriceps
  - Quadriceps setting isometric
  - Hip adduction, abduction, and extension
  - Vertical squats
  - Leg press
  - Knee extension light (0---60°)
  - Bicycle (week 6-8)
  - Pool program [walking, strengthening (when able)]
- **Flexibility**
  - Continue all stretching exercises for LE

**Phase IV – Strengthening Phase (Weeks 9-16)**

- **Criteria to Progress to Phase IV**
  - ROM at least 0-115 degrees
  - Absence of swelling/inflammation
  - Voluntary control of quads
- **Goals:**
  - Gradual improvement of muscular strength
  - Functional activities/drills
- **Exercises:**
  - ½ vertical squats (0---60°)
  - Wall Squats (0---60°)
  - Leg press
  - Forward lunges
  - Lateral lunges
  - Lateral step-ups
  - Knee extension (60°-0)
  - Hip adduction/abduction
  - Bicycle
  - Stairmaster

**Phase V – Return to Activity Phase**

- **Criteria to enter Phase V**
  - Full non-painful ROM
  - Appropriate strength level (80% or greater for contralateral leg)
  - Satisfactory clinical exam
- **Goals:**
  - Functional return to specific drills
- **Exercises:**
  - Functional drills
  - Strengthening exercises
  - Flexibility exercises