

TIBIAL SPINE AVULSION FRACTURE FIXATION

## Physical Therapy, Strength and Conditioning

### PHASE I: MAXIMUM PROTECTION (WEEKS 0 TO 2)

#### Week 0-2

##### **Goals**

- Brace locked in full extension at all times
- Non-weight bearing with brace locked in full extension
- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Full passive extension

### PHASE II: PROGRESSIVE STRETCHING AND WEIGHT BEARING (WEEKS 2 TO 6)

#### Weeks 2 to 4

##### **Goals**

- Partial weight bearing with crutches with brace locked in full extension
- Full knee extension/hyperextension
- Knee flexion to 60°
- Normalize patellofemoral joint and scar mobility

##### **Exercise progression**

- Extension – continue with heel props and prone hangs as needed
- Flexion – continue with end range heel slides to 45 degrees
- Quad sets

#### Weeks 4 to 6

##### **Goals**

- Full weight bearing with brace locked in full extension. Wean off crutches.
- Full knee extension/hyperextension
- Knee flexion to 90°

##### **Exercise progression**

- Extension—continue with heel props and prone hangs as needed
- Flexion—continue with end range heel slides to 90 degrees
- Quad sets

### PHASE III: ADVANCED STRENGTHENING AND ENDURANCE TRAINING (WEEKS 6 TO 12)

#### Goals

- Weight bearing with brace unlocked to 0-60° week 6, 0-90° week 7
- Weight bearing as tolerated without brace beginning week 8
- Control inflammation with increasing loads
- Full knee flexion and extension with terminal stretch
- Progressive strengthening
- Increase muscular endurance

#### Exercise progression

- Begin stationary bike
- Continue with ROM/flexibility exercises as appropriate
- Closed chain extension exercises
- Weight bearing Gastroc-Soleus stretching
- Toe raises, start proprioception program
- At 10 weeks: Single leg squat/lunge progression (dips, retro, walk and split), focus on eccentric control and alignment.

#### Core Program

- Front plank—full, may advance to alternating leg lift
- Bridge—marching or single leg
- Side plank—full
- Dead bug progression
- Quadruped alternating arm-leg

#### Cardiovascular Exercise

- Stationary biking
- Treadmill/outdoor walking with focus on proper gait mechanics
- Arc trainer or elliptical

### PHASE IV: ADVANCED STRENGTHENING PHASE (WEEKS 12 TO 24)

#### Goals

- Control inflammation with increasing loads
- Progressive strengthening
- Increase muscular strength, power and endurance

#### Exercise Progression

- Increasing loads from phase III

#### Core Program

- Increasing loads from phase III

#### Non-impact Cardiovascular Exercise

- Stationary biking
- Arc trainer or elliptical
- Swimming

**Running Progression**

- Basic ladder series—12 weeks
- Skipping—12 weeks
- Walk/jog interval—12 weeks
- Linear acceleration/deceleration—16 weeks
- Sprinting—18 weeks
- Change of direction and lateral agility—18 weeks

**Jumping Progression** (*\*gradual progression*)

- Low amplitude bilateral single response jumps—12-14 weeks
- Bilateral multiple response jumps—20 weeks
- Unilateral single response jumps—20 weeks

**Sports Specific Activity Progression**

- Interval golf program – 20 weeks
- Non-contact and non-reactive field/court progression—20 weeks

**Sports Test and Follow-up with Physician**

- Follow-up examination with the physician
- Sports test for return to competition at 4.5 months