**OPEN high tibial osteotomy**

**post-operative protocol**

**PHASE I – MAXIMUM PROTECTION:**

**WEEKs 0-2:**

* Elevation, ice ,and modalities to reduce pain and inflammation
* Locked brace @ 10 degrees
* Use crutches non-weight bearing for at least 6 weeks; progress off crutches as instructed by physician
* Hinged knee brace will be opened to full range of motion at first office visit with the physician
* Exercises:
  + Initiate patella mobility drills
  + Begin full passive/active knee range of motion exercises
  + Quadriceps setting focusing on VMO restoration
  + Multi-plane open kinetic chain straight leg raising
  + Gait training with crutches (NWB)

**PHASE II – PROGRESSIVE STRETCHING AND EARLY STRENGTHENING:**

**WEEKS 2-6:**

* Maintain program as outlined in week 0 to 1
* Continue non-weightbearing with crutches until week 6
* NWB ROM as tolerated
* Brace unlocked at 0-70 degrees per ROM allows
* Continue with modalities to control inflammation
* Initiate global lower extremity stretching program
* Exercises:
  + Begin stationary bike and pool exercise program (when incisions healed)
  + Implement reintegration exercises emphasizing core stability
  + Closed kinetic chain multi-plane hip strengthening on uninvolved side
  + Manual lower extremity PNF patterns
  + Multi-plane ankle strengthening

**PHASE III – STRENGTHENING AND PROPRIOCEPTIVE PHASE:**

**WEEKS 6-10:**

* Transition to full weight bearing over 7-10 days
* Initiate partial weightbearing at week 6. Increase by 25% of body weight every 3 days as tolerated.
* Modalities as needed
* Continue with Phase II exercises as indicated.
* Wean off crutches to full weightbearing by end of week 8.
* Normalize gait pattern
* Advance stationary bike program; begin treadmill walking and elliptical trainer; avoid running and impact activity
* Initiate closed kinetic chain exercises progressing bilateral to unilateral
* Initiate proprioception training

**PHASE IV – ADVANCED STRENGTHENING:**

**WEEKS 10-16:**

* Initiate gym strengthening-beginning bilateral progressing to unilateral
  + Leg press, heel raises, hamstring curls, squats, lunges, knee extensions (30° to 0° as tolerated).

**WEEKS 16-24:**

* Continue with advanced strengthening
* Begin functional cord program

**PHASE V – RETURN TO SPORT/FUNCTIONAL PROGRAM**

**WEEK 24:**

* Follow-up examination with physician
* Implement sport specific multi-directional drills
* Continue with lower extremity strengthening, cardiovascular training, and flexibility
* Sports test for return to play