## **Tibial tuberosity transfer rehabilitation protocol**

## **Phase I – maximum protection (weeks 0 to 6):**

### 0 to 2 weeks:

* Brace locked in full extension for 6 weeks
* Non-weight bearing for 4-6 weeks per physician’s instructions
* Ice and modalities to reduce pain and inflammation
* Aggressive patellar mobility drills
* Range of motion – 0° to 45°knee flexion
* Begin submaximal quadriceps setting

### Weeks 2 to 4:

* Continue with inflammation control
* Continue with aggressive patellar mobility
* Range of motion – 0° to 60°
* Continue with submaximal quadriceps setting, isometric hamstring/groin and global lower leg strengthening

### Weeks 4 to 6:

* Progressive weight bearing per physician’s instructions
* Continue with ice and aggressive patellar mobility
* Range of motion – 0° to 90° (by week 6)
* Increase intensity with quadriceps setting

## **Phase II – progressive range of motion and early strengthening (weeks 6 to 12):**

### Weeks 6 to 8:

* Full weight bearing
* Open brace to 45°- 60° of flexion week 6, 90° at week 7
* Continue with swelling control and patellar mobility
* Gradually progress to full range of motion
* Begin multi-plane straight leg raising and closed kinetic chain strengthening program focusing on quality vmo function.
* Initiate open kinetic chain progressing to closed kinetic chain multi-plane hip strengthening
* Normalize gait pattern
* Begin stationary bike
* Initiate pool program

### Weeks 8 to 10:

* Wean out of brace
* Continue with patellar mobility drills
* Normalize gait pattern
* Restore full rom
* Progress open and closed kinetic chain program from bilateral to unilateral
* Increase intensity on stationary bike
* Begin treadmill walking program

## **Weeks 10 to 12:**

* Full rom
* Aggressive terminal quadriceps stretching
* Advance unilateral open and closed kinetic chain strengthening
* Initiate proprioception drills
* May introduce elliptical trainer

## **Phase III – progressive strengthening (weeks 12 to 16):**

### Weeks 12 to 16:

* Advance open and closed kinetic chain strengthening
* Increase intensity on bike, treadmill, and elliptical trainer
* Increase difficulty and intensity on proprioception drills
* Begin gym strengthening: leg press, hamstring curls, ab/adduction; avoid lunges and knee extensions
* Begin multi-directional functional cord program
* Initiate pool running program

## **Phase IV – advanced strengthening and functional drills (weeks 16 to 20):**

### Weeks 16 to 20:

* Continue pool running program advancing to land as tolerated

## **Phase V – plyometric drills and return to sport phase (weeks 20 to 24):**

### Weeks 20 to 24:

* Advance gym strengthening
* Progress running/sprinting program
* Begin multi-directional field/court drills
* Begin bilateral progressing to unilateral plyometric drills
* Follow-up appointment with physician
* Sports test for return to competition **6 months post-op** per physician’s release