

REHABILITATION AFTER TIBIAL SPINE (ACL) FRACTURE FIXATION

I. Phase I (Max protection phase) – Weeks 0-6

Goals: reduce inflammation/effusion, allow early bone healing, full passive knee extension, gradually increase knee flexion, restore voluntary quad activation, protect fracture fixation with use of brace

BRACE: Brace x 8 weeks. Locked in -10 extension at all times for first week except when doing PT exercises. Locked in -10 extension for sleeping and ambulation weeks 1-3, ok to unlock when sitting. Locked in -10 extension for ambulation weeks 4-6, ok to unlock when sitting, ok to remove when sleeping if no extension loss. Brace on but unlocked week 6-8.

WEIGHT BEARING: TTWB x 2 weeks, then PWB x 1 weeks, then WBAT with crutches x 1 week (wean from crutches as patient demonstrates normal gait mechanics and improving quad control), d/c crutches at earliest week 4, but should be without crutches by week 6 at latest

- Stage 1: Immediate post-surgery (Days 1-10)
 - Ice, compression, elevation
 - PROM 0-90 (to tolerance) - Emphasize maintenance of full extension
 - AROM as tolerated
 - Patellar mobilizations
 - Stretch hamstrings, calf, hip flexors
 - Avoid active resisted knee flexion
 - Strengthening exercises (electrical stim to quads):
 - Quad sets
 - SLR flexion
 - Straight leg raises in brace until quad returns (no extensor lag)
 - Hip abduction/adduction

- Stage 2: Weeks 2-6
 - Continue use of ice and compression/compressive wrap
 - ROM guidelines: gradually increase PROM as tolerated
 - Goal is 0-120 at week 6 postop – in early phases, emphasize maintenance of full knee extension
 - Continue PROM/AAROM/AROM exercises and stretching
 - Avoid active resisted knee flexion
 - Strengthening exercises:
 - SLR (all 4 planes)
 - Knee extension 90-0 degrees
 - CKC mini-squats 0-45 degrees
 - CKC wall squats 0-60 degrees

- Initiate CKC exercises as quad control returns
 - Lateral and front step overs
 - Lateral lunges
 - Step downs (lateral)
 - Step downs (front)

II. Phase II (Motion + early strengthening) – Weeks 6-12

Goals: maintain full knee extension, regain full knee flexion, minimal to no swelling/inflammation, restore quad strength, gradually increase functional activities and hip/quad/hamstring/calf strength, increase proprioception

- Criteria to progress to Phase II:
 - Full quad control
 - Normal gait kinematics
 - ROM at least 0-120
 - Satisfactory clinical exam

- Continue use of ice and compression as needed
- Brace unlocked at all times when ambulating until full normal gait returns, ok to discontinue at week 8
- Continue ROM and stretching to maintain 0-135 degrees
- Progress strengthening exercises – emphasize closed chain extension exercises
 - Leg press 70-0 degrees
 - Knee extension 90-40 degrees
 - Hip abd/adduction
 - Wall squats 0-60 degrees
 - Vertical squats 0-60 degrees
 - Lateral step-ups
 - Front and lateral lunges
 - Hamstring curls

- Balance/proprioception training
 - Biodex stability
 - Squats rocker board
 - Cup walking (step overs)
 - Standing on foam single leg
 - Patellar mobilization/scar mobilization

- Begin stationary bike week 6
- May initiate stair stepper week 8

III. Phase III – Modified activity + late strengthening phase (Week 12-18)

Goals: improve strength and endurance, maintain full ROM, gradually increase applied stress

- Criteria to progress to Phase III:
 - Full non-painful ROM
 - No pain or tenderness
 - Satisfactory clinical exam
 - Satisfactory isokinetic test

- Continue all flexibility and strengthening exercises listed above
- Progressive hip/quad/hamstring/calf strengthening
- Treadmill walk/run program
- Ok to begin straight line running
- Advance proprioceptive activities and agility drills

III. Phase IV – Return to sport/full activity phase (Month 4.5 and beyond)

Goals: improve strength and endurance, prepare for unrestricted activities

- Exercises
 - Continue and progress all strengthening exercises and stretching drills
 - Gradually add in deep squatting and straight line running
 - Then once doing those without issues, add in pivoting/cutting/agility and plyometric program
 - Side steps, crossovers, figure 8 and shuttle running
 - One and two leg jumping
 - Cutting/acceleration/deceleration/sprints
 - Ladder drills
 - Complete return to sport specific exercises and movements