

## Sports Injury and Joint Replacement Surgery for the Hip and Knee

# ACL TIBIAL AVULSION FRACTURE REPAIR REHABILITATION PROTOCOL

### General Guidelines

- ACL avulsion repairs are usually performed on day-only basis or 1 night inpatient stay
- Braces are routinely used
- Physiotherapy should commence within the first 2 weeks of surgery, 2-3 visits/week
- Dr Awwad may alter time frames when indicated.

### White compression stockings

You may stop wearing the white compression stockings after 24-48 hours. This compression stocking helps prevent a blood clot from forming in your legs. Once you are walking frequently you will no longer need the stocking. If you develop lower leg swelling, tenderness, and/or redness, please contact Dr Awwad's office or the hospital.

### Dressings

The bulky encircling dressings [crepe bandage, velband and pads] may be removed the day after surgery. The small adhesive dressings should be left intact. To shower, cover the surgical knee and dressings with plastic cling wrap. Prior to discharge from hospital, an appointment will be made to see a nurse for a dressing change and wound check between 1-2 weeks post-operatively.

### Ice and Elevation

The leg should be intermittently elevated and an ice pack used for 72 hours post-operatively to assist with swelling and pain. Ice packs should be applied for 20-30mins/hr. After 72 hrs, ice packs are no longer required, although can be safely continued and their use is very helpful for pain and swelling.

### Pain Medications

The anaesthetist will individualise and organise the appropriate pain relief for patients. Commonly required medication are panadeine forte, tramadol, palexia and endone.

### Precautions

Patients should contact Dr Awwad's office or the hospital the operation was performed in, if they develop high temperatures, worsening skin redness, worsening calf, knee or thigh pain and swelling and excessive bleeding or ooze from the incision sites.

### Overview

- Focus on the protection of fixation in Phase I [0-6 weeks postop]
- Sleep with brace ON & LOCKED in extension for 3 weeks.
- Crutches: 4 weeks total [0-2 TWB, 3-4 PWB, 5-6 WBAT]
- Brace: 8 weeks total
  - » Weeks 0-2: Toe-Touch Weight Bearing (Full Extension)
  - » Weeks 3-4: Partial Weight Bearing (Full Extension, discontinue crutches after 4 weeks)
  - » Weeks 5-6 WBAT (Full Extension)
  - » Weeks 7-8 (Unlock brace in 30° increments, unlocked and off after week 8)

### Phase I - Post-Operative Weeks 0 to 6:

#### Goals:

- Protect graft and graft fixation
- Minimise effects of immobilisation
- Control inflammation/swelling
- Full active and passive extension
- Restore normal gait on level surfaces

#### Weight-Bearing Status:

- Weeks 0-2 : TWB
- Weeks 3-4: PWB
- Weeks 5-6 : Wean from crutches as patient demonstrates normal gait mechanics and improved quad control

#### Range of Motion:

- Active ROM as tolerated
- Maintain full extension and work on progressive knee flexion
  - » 0-90° by Week 3
  - » 0-125° by Week 6

#### Exercises:

- Patellar mobilisation/scar mobilisation
- Heel slides
- Isometric Quad contractions (consider NMES for poor quad control)
- Prone assisted knee flexion
- Gastroc/Soleus, Hamstring stretches
- Gastroc/Soleus strengthening

### Phase II - Post-Operative Weeks 7-12:

#### Criteria for advancement to Phase II:

- Full extension/hyperextension
- Good quad control, SLR without extension lag
- Minimum of 90° of flexion
- Minimal swelling/inflammation
- Normal gait on level surfaces

#### Goals:

- Restore normal gait with stair climbing
- Maintain full extension, progress toward full flexion range of motion
- Increase hip, quadriceps, hamstring and calf strength
- Increase proprioception

#### Brace:

- Begin unlocking in 30 increments (every 3-4 days) after week 6. Unlocked when weight bearing by the start of week 8
- Discontinue after Week 8

#### Exercises:

- Continue with range of motion/flexibility exercises as appropriate for the patient
- Continue closed kinetic chain strengthening as above, progressing as tolerated – can include one-leg squats, leg press, step ups at increased height, partial lunges, deeper wall sits.
- Stationary biking- progress time and resistance as tolerated; progress to single leg biking
- Continue to progress proprioceptive activities – ball toss, balance beam, minitramp balance
- Continue hamstring, gastroc/soleus stretches
- Continue to progress hip, hamstring and calf strengthening
- If available, begin running in the pool (waist deep) at 8 weeks

### Phase III - Post-Operative Weeks 13 to 18:

#### Criteria to advance to Phase III:

- No patellofemoral pain
- Minimum of 120 degrees of flexion
- Sufficient strength and proprioception to initiate running.
- Minimal swelling/inflammation

#### Goals:

- Improve strength, endurance and proprioception of the lower extremity to prepare for sport activities
- Avoid over-stressing the graft
- Protect the patellofemoral joint
- Normal running mechanics

- Full range of motion

#### Exercises:

- Continue flexibility and ROM exercises as appropriate for patient
- Knee extensions 90°-30°, progress to eccentrics
- Progress toward full weight-bearing jogging at 12 weeks.
- Begin swimming if desired
- Progressive hip, quadriceps, hamstring, calf strengthening
- Cardiovascular/endurance training via Stairmaster, elliptical, bike
- Advance proprioceptive activities

### Phase IV: Post-Operative Months 5-6 Return to Sport:

#### Criteria for advancement to Phase IV:

- No significant swelling/inflammation.
- Full, pain-free ROM
- No evidence of patellofemoral joint irritation
- Strength approximately 70% of uninvolved lower extremity per isokinetic evaluation
- Sufficient strength and proprioception to initiate agility activities
- Normal running gait

#### Goals:

- Symmetric performance of basic and sport specific agility drills
- Single hop and 3 hop tests 90% of uninvolved lower extremity
- Quadriceps and hamstring strength at least 90% of uninvolved lower extremity per isokinetic strength test

#### Exercises:

- Continue and progress flexibility and strengthening program based on individual needs and deficits.
- Initiate plyometric program as appropriate for patient's athletic goals
- Agility progression including, but not limited to:
  - » Side steps
  - » Crossovers
  - » Figure 8 running
  - » Shuttle running
  - » One leg and two leg jumping
  - » Cutting Acceleration/deceleration/sprints
  - » Agility ladder drills
- Continue progression of running distance based on patient needs.
- Initiate sport-specific drills as appropriate for patient
- Commence ACL injury prevention programme (PEEP, FIFA 11+)

#### Criteria for Return to Sports:

- No effusion
- Isokinetic quadriceps strength testing at 60°/s with less than a 10% deficit compared to the contralateral side
- Single leg hop for distance with >90% of contra-lateral side for strength
- Triple hop for distance with >90% of contra-lateral side
- Triple crossover hop for distance with >90% of contra-lateral side
- On-field sports-specific rehabilitation fully completed

**Do you still have a question about your recovery that  
has not been answered within this document?**

Please contact Dr Awwad's office prior to your surgical date at:  
[awwadadmin@orthosa.com.au](mailto:awwadadmin@orthosa.com.au)

Sometimes we may miss a question that is important to you. If so, please feel free to email us your feedback so that we can improve our service to you and future patients –  
[awwadadmin@orthosa.com.au](mailto:awwadadmin@orthosa.com.au)



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APPOINTMENTS AND ENQUIRIES

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Ask [Dr Awwad](#) to clarify your restrictions prior to surgery to avoid disappointment.