



## ACHILLES TENDON REPAIR POST-OPERATIVE

### GUIDELINES Post-Operative Phase 1: Weeks 0-2

#### PRECAUTIONS

- **Weeks 0 – 2: Non-weightbearing with crutches/walker in splint**
- Avoid placing lower extremity (LE) in prolonged dependent position
- Non-removable splint must be kept dry at all times

#### TREATMENT RECOMMENDATIONS

- Patient education
  - Maintain NWB status
  - LE must be elevated on at least two pillows 80%-90% of the time
  - Walking is for functional home mobility and short distances only – wheelchair or knee scooter should be used for longer distances
- Transfer training: in and out of bed and sit to stand (e.g. chair, toilet)
- Gait training with appropriate device on level surfaces while maintaining NWB status
- Stair training if required NWB with crutch and rail or seated bump-up method
- Activities of daily living (ADL) training and home modifications
- Promotion of knee extension while elevated
- Therapeutic exercise with focus on maintaining non-operative LE and bilateral UE motion, flexibility, and strength
  - Consider blood flow restriction training with surgeon clearance

#### CRITERIA FOR ADVANCEMENT

- Safe ambulation/stair negotiation with NWB and appropriate device on level surfaces independently or with assistance of family member/friend if consistently present at home
- Independent with transfers

#### EMPHASIZE

- Control swelling
- Elevation protocol
- Independent transfers
- Gait training NWB
- Safe stair mobility, if required



## ACHILLES TENDON REPAIR POST-OPERATIVE

### **GUIDELINES** Post-Operative Phase 2: (Weeks 2-4)

#### **PRECAUTIONS**

- **Weight bearing progression**
  - **Week 3: 50% WB with crutches/walker and boot (x4 1/2" heel wedges)**
  - **Week 4: 75% WB with crutches/walker and boot (x4 1/2" heel wedges)**
- Avoid placing LE in prolonged dependent position
- No active or passive dorsiflexion (DF) stretching

#### **TREATMENT RECOMMENDATIONS**

- Active range of motion: full plantarflexion and dorsiflexion to neutral
- No stretching of the Achilles tendon
- Proximal hip and core strength
  - Abdominal exercises
    - Supine and quadruped
  - 3-way straight leg raise (no forward flexion)
  - Clamshells at 45 degrees and 0 degrees hip flexion with abdominal control
  - Emphasize hip extension strengthening
  - Consider blood flow restriction training with surgeon clearance
- Upper body conditioning program
- Stationary bicycle when 50% WB

#### **CRITERIA FOR ADVANCEMENT**

- Patient understands repair protection guidelines
- Edema well controlled
- Independent with core and hip stability program

#### **EMPHASIZE**

- Proximal hip strengthening
- Control swelling
- Elevation protocol
- Independent transfers
- No stress on the tendon during any exercises



## ACHILLES TENDON REPAIR POST-OPERATIVE

### GUIDELINES Post-Operative Phase 3: Weeks 5-8

#### PRECAUTIONS

##### • Weight bearing progression

- **Week 5: full WBAT with boot, continue crutches/walker until gait normalizes (x3 1/2" heel wedges)**
- **Week 6: full WBAT in boot, wean off crutches/walker (x2 1/2" heel wedges)**
- **Week 7: full WBAT in boot, wean off crutches/walker (x1 1/2" heel wedges)**
- **Week 8+: full WBAT, transition to athletic shoe + ankle brace**
- Avoid passive overpressure or stretching into ankle DF
- No maximal plantarflexion strength testing

#### TREATMENT RECOMMENDATIONS

- Edema control
- Focus on seated and closed chain motion
  - Ankle and toe AROM/PROM
  - Seated ankle inversion/eversion
  - Toe articulation – Seated heel raises – emphasize rolling through hallux
  - Intrinsic – Marble toe pick ups
- Arching/oming progressing from seated to standing
- Joint mobilizations
  - Talocrural and tibiofibular joints
  - 1st MTP dorsiflexion
  - Subtalar joint inversion/eversion
- Progress hip flexibility with emphasis on extension
- Initiate balance/proprioception exercise training respecting WB status
  - Multidirectional wobble board → Bilateral stance on a cushion shod/unshod
- Strengthening
  - Proximal LE
  - Bilateral heel raise progression: seated → seated with load → leg press → standing with upper body support
  - Hip extension in standing
  - Consider/progress blood flow restriction training with surgeon clearance
- Aquatic exercise when incision healed and cleared by surgeon – deep water jogging only

#### CRITERIA FOR ADVANCEMENT

- Wound closure
- Symmetrical bilateral heel raises either full weight bearing (FWB) or PWB
- FWB in CAM boot, no wedges, with or without assistive device
- DF to neutral



## ACHILLES TENDON REPAIR POST-OPERATIVE

### GUIDELINES Post-Operative Phase 4: Weeks 9-12

#### PRECAUTIONS

- **Weight bearing progression**
  - **Week 8+: full WBAT, wean out of boot into athletic shoe + ankle brace**
- No passive DF stretching

#### TREATMENT RECOMMENDATIONS

- Gait training weaning from CAM boot and assistive device
  - Encourage step through pattern
  - Emphasize push-off at terminal stance
- Edema management: compression garments, patient education
- Scar mobilization, silicone strips, moisturizing when wound is healed
- Forward step up/down and lateral step-up progressions
- AROM/PROM and mobilizations of ankle and toes
  - Flat footed squat with knees over toes and UE support
  - Mobilization of 1st MTP, distal tibiofibular, talocrural and subtalar joints
  - Lunging with elastic band or strap for talocrural self-mobilization
- Progress unilateral static and dynamic standing balance/proprioceptive exercises
  - Unstable surfaces (e.g., foam, rocker board)
- Strengthening
  - Progress plantar flexor strengthening
    - Bilateral plantarflexion
    - Leg press or standing leaning on elbows, fully upright
    - Heel raises with proper eccentric control – Two up/one down
  - Core strengthening – Front and side planks
  - Progress to dynamic, closed chain proximal LE strengthening
    - Squats, gluteus medius band exercises, leg press, hip extension
- Progress cardiovascular conditioning
  - Retro treadmill
  - Swimming: avoid pushing off the wall during turns

#### CRITERIA FOR ADVANCEMENT

- Functional ankle/toe ROM to allow for symmetrical gait
  - DF to 75% of non-operative side
- Ascend 6-inch steps reciprocally
- SLS without Trendelenburg
- Ability to perform symmetrical bilateral heel raises
  - Ability to perform single leg eccentric heel raise 10x



## ACHILLES TENDON REPAIR POST-OPERATIVE

### GUIDELINES Post-Operative Phase 5: Weeks 13-23

#### PRECAUTIONS

- Avoid premature progression to impact activities (e.g., running, jumping)

#### TREATMENT RECOMMENDATIONS

- Edema control with ankle compression garment, as needed
- Maximize gait symmetry, efficiency, and speed
- Forward step-down progression
- AROM/PROM and mobilization focusing on persistent deficits
- Progress single leg closed chain activities (e.g., single leg squat, loaded forward lunge)
- Progress dynamic balance/proprioceptive and loading exercises
  - E.g., cariocas, tandem walking, heel walking, toe walking, single leg balance with multidirectional challenges
  - Progress to unstable surfaces and perturbations
- Continue to progress functional strengthening
  - Maximize symmetrical movement patterns and encourage healthy compensatory patterns in adjacent joints as necessary
- Consider starting pre-impact training (i.e., aquatic/anti-gravity treadmill)
  - Eccentric strengthening and control
    - End range control
    - 3-point heel lowering exercise
  - Functional LE chain strengthening
  - Hiking, yoga, Pilates, light aerobic classes

#### CRITERIA FOR DISCHARGE OR ADVANCEMENT TO RETURN TO SPORT

- Ankle DF within 10% of uninvolved side
- SLS > 90% of uninvolved side
- MMT 5/5 of all muscle groups
  - At least 90% closed chain, heel raise work (height x reps) compared to contralateral side
- Independent gym program



## ACHILLES TENDON REPAIR POST-OPERATIVE GUIDELINES Post-

### Operative Phase 6: Return to Sport/Dynamic Activities (Week 24+)

#### PRECAUTIONS

- Avoid too much, too soon: monitor volume and load
- Avoid inadequate rest and recovery

#### TREATMENT RECOMMENDATIONS

- Increase volume and plantarflexion load to mimic load necessary for return to activity
- Introduce movement patterns specific to patient's desired sport or activity
- Introduction of light agility work
  - Hopping patterns
- Increase cardiovascular load to match that of desired activity (return to running progression)
- Consider collaboration with certified athletic trainer (ATC), performance coach/strength and conditioning coach (CSCS), skills coach and or personal trainer for complex sports specific movements, if available
- Begin gentle passive DF stretching at 6 months if less than 90% DF of non-operative side

#### CRITERIA FOR DISCHARGE OR ADVANCEMENT TO RETURN TO SPORT

- Ensure that there is a plan in place for a graded return to full or modified activity based on patient's maximal therapeutic activity (e.g., ATC, skills coach, CSCS)

#### EMPHASIZE

- Progression of pain free loading
- Eccentric gastrocnemius and soleus control
- Quality with functional activities