



ORTHOPEDICS &  
SPORTS MEDICINE  
BAYCARE CLINIC®

**Dr Schock**  
**Achilles Tendon Repair Protocol**

**Phase 1- Maximum Protective Phase (0-2 weeks post-op)**

**Goals for Phase 1**

- Protect integrity of repair
- Minimize effusion
- ROM per guidelines listed

**Precautions**

- No ankle PROM/AROM
- Non-weight bearing for 2 weeks

\*\*\*At the first post-op visit the doctor's office will place heel wedges in the walking boot. They are to be removed one per week until foot is neutral in the boot.

**Immobilization/Weight Bearing/ROM**

- No ankle PROM/AROM
- Immobilization in post-op splint at all times
- Non-weight bearing for 2 weeks

**Brace**

- 0-6 weeks:** Walking boot to be worn at all times, including while sleeping

**Manual Therapy**

- Manual soft tissue techniques for lower extremity musculature

**Strengthening**

- Quadriceps, glute, and hamstring setting
- Hip strengthening
- 0-2 weeks:** Multi-plane OKC SLR, etc.

**Modalities**

- Vasopneumatic compression for edema management 2-3x/week (15-20 min)
- Cryotherapy at home, 3 x per day for 20 minutes each with ankle elevated above heart



# ORTHOPEDICS & SPORTS MEDICINE

BAYCARE CLINIC<sup>®</sup>

## Phase 2 – Passive/Active Range of Motion Phase (2-6 weeks)

### Goals for Phase 2

- Begin Physical Therapy
- Protect integrity of repair
- Minimize effusion
- ROM per guidelines listed
- Scar tissue mobility
- Full WB in boot

### Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

### Immobilization/Weight Bearing

- Slow progression back to full weight bearing in boot, with body weight percentage increasing by 25% every 3-4 days if patient has controlled pain and controlled effusion. Goal of full WB at 4-6 weeks.
- NWB when not wearing walking boot (bathing, changing attire, etc.)
- PWB with supervision at therapy and while wearing soft ankle brace

### Range of Motion

- 2-4 weeks:** DF limited to 0° AROM; PF PROM only, not limited
- 4-6 weeks:** Begin PF AROM to 5° with knee straight, 10° with knee flexed

### Brace

- 0-6 weeks:** Walking boot to be worn at all times, including while sleeping

### Manual Therapy

- Scar massage using STM, IASTM when incisions closed
- Manual soft tissue techniques for lower extremity musculature
- Joint mobilization to talocrural joint (Grades I-III)

### Strengthening

- 2-4 weeks:** PROM ankle PF, AROM ankle DF to 0°
- 4-6 weeks:** Begin PF AROM to 5° with knee straight, 10° with knee flexed
- Sub-maximal isometrics inversion and eversion
- Stationary bike in boot
- Limited ankle and foot strengthening (towel crunches, marble pick-ups, DF/PF light band strengthening, etc.)
- Lower Extremity Strengthening Program (in boot)
- Hip strengthening (continue OKC hip strengthening)
- Quad strengthening (quad sets, leg-press, wall squats, etc.)
- Hamstring strengthening (prone hamstring curls, physio-ball curls, etc.)
- Initiate core strengthening

### Aquatics

- Initiate aquatic therapy program when incisions are closed

### Modalities

- Vasopneumatic compression for edema management 2-3x/week (15-20 min)

Cryotherapy at home, 3 x per day for 20 minutes each with ankle elevated above heart



# ORTHOPEDICS & SPORTS MEDICINE

BAYCARE CLINIC®

## Phase 3 – Progressive Stretching and Early Strengthening (6-8 weeks)

### Goals for Phase 3

- Protect integrity of repair
- ROM per guidelines listed
- FWB in boot
- Strengthening of ankle/calf musculature

### Precautions

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

### Range of Motion

- DF AROM: limit to 10° with knee straight and 20° with knee flexed
- PF PROM: unlimited, initiate isometrics

### Brace

- 6-8 weeks:** Reduce one heel wedge from boot per week from weeks 6 to 8

### Manual Therapy

- Restore flexibility – hamstrings, quadriceps
- Begin light terminal stretching of gastroc/soleus in non-weight bearing by week 8
- Joint mobilization to talocrural joint (Grade I-IV)

### Strengthening

- Stationary bike in boot
- Initiate resisted dorsiflexion, inversion, and eversion strengthening
- Begin plantarflexion isometrics
- Lower extremity strengthening (in boot)
- Core strengthening

### Neuromuscular Control

- Advanced proprioception on un-stable surfaces with perturbations and/or dual tasking, add sport specific balance tasks as able

### Modalities

- Cryotherapy after activity



ORTHOPEDICS &  
SPORTS MEDICINE  
BAYCARE CLINIC®

**Phase 4 – Terminal Stretching and Progressive Strengthening (8-12 weeks)**

**Goals for Phase 4**

- Gradually wean out of boot over a 7-10 day period
- Normalize gait

**Precautions**

- No kicking in pool for 10 weeks
- Avoid twisting and pivoting motions for 12 weeks
- Avoidance of impact activity for 12 weeks

**Brace**

- Use a heel wedge in a tennis shoe or a boot/shoe with a heel to ease transition

**Strengthening**

- 8-10 weeks
  - Stationary bike
  - Initiate a light gastrocnemius/soleus stretch in a weight bearing position
  - Continue with multi-plane ankle stretching
  - Normalize gait
  - Continue resisted NWB plantar flexion strengthening
  - Begin bilateral heel raises off of the floor progressing to off of a step as tolerated
  - Begin low velocity ROM movements (squat, step back, lunge)
  - Once out of boot may begin bilateral balance/stability exercises (balance board, ½ foam roller, dyna disc)
- 10-12 weeks
  - Advance PF strengthening to unilateral as tolerated (single leg calf raises, single leg squats, step-up progression, multi-directional lunges)
  - Initiate gastroc/soleus strengthening in gym (eccentric leg press)

**Aquatics**

- **10-12 weeks:** Begin treadmill walking and/or elliptical with progression in intensity as tolerated
- **10 weeks:** May begin kicking in pool

**Neuromuscular Control**

- **8-10 weeks:** Begin unilateral proprioceptive training

**Modalities**

Cryotherapy after activity



**ORTHOPEDICS &  
SPORTS MEDICINE**  
BAYCARE CLINIC®

**Phase 5 – Progressive Strengthening and Return to Function (3-6 months)**

**Goals for Phase 5**

- Return to function

**Strengthening**

- Continue to increase intensity with progressive resisted exercises
- Increase intensity with Cardiovascular Program
- May begin cycling outdoors
- Begin multi-directional resisted cord program (side stepping, forward, backward, carioca)
- Initiate impact activities
- 12+ weeks: initiation to impact exercise, sub-maximal bodyweight progressing to maximal (pool, GTS, plyo-press, Alter G), sagittal plane jogging only
- 14+ weeks: multi-directional agility drills, cutting, pivoting, and plyometrics
- Continue unilateral gym strengthening program (single leg calf raises, single leg squats, eccentric leg press, step-up progression, multi-directional directional lunges)
- Core strengthening

**Aquatics**

- Begin pool running program progressing as tolerated to dry land running

**Neuromuscular Control**

- Advanced proprioception on un-stable surfaces with perturbations and/or dual tasking, add sport specific balance tasks as able

**Modalities**

- Cryotherapy after activity

**Return to Function Testing (6 months)**

- Follow-up examination with the physician for return to sport
- Return to function testing: per MD approval. Criteria: pain-free, full ROM, minimal joint effusion, 5/5 MMT strength, jump/hop testing at 90% compared to uninvolved, adequate ankle control with sport and/or work specific tasks



# ORTHOPEDICS & SPORTS MEDICINE

BAYCARE CLINIC®

## Works Cited

1. Bevoni, R. et al. Long term results of acute Achilles repair with triple-bundle technique and early rehabilitation protocol. *Injury, Int J. Care Injured*. 2014; 45:1268-1274.
  2. Braunstein, Mareen et al. Development of an accelerated functional rehabilitation protocol following minimal invasive Achilles tendon repair. *European Society of Sports Traumatology*. September 2015; 1-8
  3. Brumann, Mareen. Accelerated rehabilitation following Achilles tendon repair after acute rupture – Development of an evidence-based treatment protocol. *Injury*. 2014; 1-9.
  4. Doral, Mahmut Nedim. What is the effect of the early weight-bearing mobilization without using any support after endoscopy-assisted Achilles tendon. *Knee Surg Sports Traumatol Arthrosc*. 2013; 21: 1378-1384.
  5. Groetelaers, Rene P.T.G.C. et al. Functional Treatment or Cast Immobilization After Minimally Invasive Repair of an Acute Achilles Tendon Rupture: Prospective Randomized Trial. *Foot & Ankle International*. September 2014; 35(8) 771-778.
  6. Huang, Jiazhang et al. Rehabilitation Regimen After Surgical Treatment of Acute Achilles Tendon Ruptures: A Systematic Review With Meta-analysis. *The American Journal of Sports Medicine*. May 2014; 1-9.
  7. Kearney, Rebecca S. et al. A systematic review of patient-reported outcome measures used to assess Achilles tendon rupture management: What's being used and should we be using it? *Br J Sports Med*. 2012; 46:1102-1109.
  8. Lantto, Iikka et al. Early functional treatment versus cast immobilization in tension after achilles rupture repair: results of a prospective randomized trial with 10 or more years of follow-up. *American Journal of Sports Medicine*. July 2015; 43:2302-2309
  9. Majewski, M. et al. Postoperative rehabilitation after percutaneous Achilles tendon repair: Early functional therapy versus cast immobilization. *Disability and Rehabilitation*. 2008; 30(20-22):1726-1732.
  10. Porter, Mark D. et al. Randomized controlled trial of accelerated rehabilitation versus standard protocol following surgical repair of ruptured Achilles tendon. *ANZ J Surg*. 2014; 1-5.
  11. Olsson, Nicklas, et al. Predictors of Clinical Outcomes After Acute Achilles Tendon Ruptures. *The American Journal of Sports Medicine*. 2014; 42(6)1448-1455.
- Suchak, Amar A. et al. Postoperative Rehabilitation Protocols for Achilles Tendon Ruptures. *Clinical Orthopedics and Related Research*. April 2006; 445:216-221

This protocol was reviewed and updated by Josh Holochwost DPT and Harold Schock, MD February 2018