Wythe Physician Practices

ORTHOPEDICS &
SPORTS MEDICINE

Non-Operative Achilles Rupture Rehabilitation Guideline

This rehabilitation program is designed to return the individual to their activities as quickly and safely as possible. It is designed for rehabilitation following an acute Achilles rupture. Modifications to this guideline may be necessary dependent on physician specific instruction, specific tissue healing timeline, chronicity of injury and other contributing impairments that need to be addressed. This evidence-based rehabilitation guideline is criterion-based; time frames and visits in each phase will vary depending on many factors including patient demographics, goals, and individual progress. This guideline is designed to progress the individual through rehabilitation to full sport/ activity participation. The therapist may modify the program appropriately depending on the individual's goals for activity following rehabilitation.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post injury care, based on exam/treatment findings, individual progress, and/or the presence of concomitant injuries or complications. If the clinician should have questions regarding progressions, they should contact the referring physician.

General Guidelines/ Precautions:

- Initial diagnosis and initiation of non-operative treatment must be started within 48 hours of injury & foot immobilized into plantarflexion with the patient non weight-bearing.
- Patient must be willing to comply with the functional rehab protocol and strict guidelines.
- Must be a complete, mid-substance Achilles tendon rupture & not a tendon avulsion from the calcaneus or gastroc/soleus.
- Once non-operative treatment is deemed appropriate:
    - Immobilization with cast in maximum passive plantar-flexion position and instructed to remain non weight-bearing for 2 weeks.
    - At 2 week follow-up, patients are placed in Achilles-specific walking boot with 40° heel lifts.
    - Physical therapy is initiated at 2 weeks follow up with specific protocol.
- Patients are counseled on avoiding any activity or falls/near falls to forcefully push the ankle past neutral.
- Progressive weight bearing during weeks 3 – 6, increasing by 25% body weight per week.
- Between weeks 6 – 8, heel lifts are reduced gradually while in full weight-bearing, followed by a further week to wean from the boot.
- *Precaution* - Tendon Elongation: Although this may occur at any stage, it is more likely to occur during 10 – 16 week mark as patients start walking & gaining more confidence.

Last Updated: 6/26/2020

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Phase	Suggested Interventions	Goals/ Milestones for Progression
Phase I *Acute Phase* Weeks: 0 - 2 Expected Visits: 0-1	*Discuss:* Anatomy, existing pathology, rehab schedule and expected progressions. *Immediate instructions:* Patient will receive education & gait training with appropriate assistive device. Patient will be in cast with ankle in maximum plantar flexion & will be non weight-bearing with crutches.	*Goals of Phase:* 1. Patient will demonstrate appropriate functional mobility to manage proper weight bearing with an assistive device and/or will have an alternative means of mobility, such as wheelchair pending PT recommendations.

Phase II
 	
Intermediate Phase
 	
Weeks 2 - 8
 	
Expected visits: 1 time a week or every other week depending on degree of pain & swelling in foot and ankle and to progress weight-bearing
	Specific Instructions:
	- Patient placed in specific walking boot with 40° heel lifts.
	- Emphasize for patient to use pain as a guideline. If in pain, back off activities & weight bearing
	- Avoid PROM ankle DF past neutral during 2 – 8 week stage
	- Weight bearing with crutches and walking boot with heel lift to 40 degrees plantar flexion
	  o Week 2-3: 25%
	  o Week 3-4: 50%
	  o Week 4-5: 75%
	  o Week 5-6: 100%
	- Gait training in boot at 6 weeks. Remove heel lifts, 1 lift daily as tolerated. Depending on boot design, leave 1-2 lifts to represent a regular shoe lift.
	Suggested Treatments:
	Modalities to control swelling: US, IFC with ice, BFR
	NMES: calf muscle with strengthening, not past neutral ankle position.
	ROM: Active plantar & dorsiflexion ROM exercises to neutral, inversion/eversion below neutral
		Goals of Phase:
		1. Provide environment of proper tissue healing
		2. Tolerance to progressive weight-bearing in boot
		3. Achieve normal gait mechanics with full weight-bearing in the boot
		
		Criteria to Advance to Next Phase:
		1. Full knee AROM
		2. Minimal to no foot edema
		3. Pain ≤ 2/10 with activities
		4. Tolerates weight-bearing progression

	Exercise Examples: - NMES to calf musculature with seated heel raises when tolerated - Knee/hip exercises with no ankle involvement: SLR, LAQ, sidelying hip abduction, prone hip extension, prone knee flexion - 6 weeks: Graduated resisted exercises open & closed kinetic chain including resisted tubing exercises for PF. - Fitness & Cardio exercises to include weight-bearing, such as biking *Other Activities:* may do hydrotherapy within motion & weight bearing limitations such as deep water running (Week 3 – 4)	
Phase III *Advanced Strengthening* Weeks 8 - 12 Expected visits: 1 – 2 times a week depending how compliant the patient is with HEP & access to exercise equipment	*Specific Instructions:* -Continue previous exercise program - Wean out of boot (usually over 2 – 5 day process) - Wear Achilles compression ankle brace for extra stability & swelling control - Educate the patient to wear shoes at all times, even indoors *Exercise Examples:* - Stationary bike, elliptical & walking on treadmill - Balance board activities with block to prevent DF past neutral - Add gentle calf stretches in standing (not past neutral) - Double-heel raises and progress to single-heel raises (not past neutral) - Begin loaded lunges/squats/step ups, maintaining neutral ankle position as much as possible	*Goals of Phase:* 1. *Progression of ROM, strength & proprioception exercises* 2. *Achieve full weight-bearing without the boot and normal gait mechanics* *Criteria to Advance to Next Phase:* 1. Patient is full weight-bearing with good tolerance 2. Pain ≤ 2/10 with activities 3. Able to complete double-leg heel raises with minimal pain or discomfort

Phase IV *Progress Activity* Weeks 12 – 16+ Expected visits: 1 -2 times a week	*Specific Instructions:* - Avoid lunges, squats and any exercise that places excessive stretch on tendon until **6 months** - **16+ weeks:** Increase dynamic weight-bearing exercises (skipping, jogging & weight training) if they can do 25 single-heel raises - **6 – 9 months:** Return to normal sporting activities that do not involve contact or sprinting, cutting, jumping if patient has regained 80% strength - **12 months:** Return to sports that involved running/jumping as directed by medical team if the patient has regained 100% strength. *Exercise Examples:* - Modified double-heel raises with non-affected leg behind the affected side to isolate calf raise on affected side - Stationary bike & Elliptical - Seated & standing calf raises with weights	***Suggested Criteria for Discharge:*** 1. Patient has regained 80 – 100% strength 2. Able to complete single-leg heel raises 3. Displays proper gait mechanics 4. Good movement quality with jumping, hopping, jogging

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