

# Guidelines for: Chronic Heel Pain - PLANTAR FASCIITIS

ICF Based Orthopaedic Physical Therapy  
Practice Guidelines

FOOT & ANKLE GROUP



## Foot & Ankle Group

- MEMBERS
  - Jennifer Gamboa, PT, DPT, OCS, MTC
  - Stephen Reischl, PT, DPT, OCS
  - Gary Hunt, PT, DPT, OCS, CPed
  - Mark Cornwall, PT, PhD, CPed
  - Tom McPoil, PT, PhD, ATC (team leader)

## Epidemiologic Features

- Plantar Fasciitis
  - Most common foot condition treated by health care providers
  - Occurs in ~ 2 million Americans per year
  - FASIG surveyed over 500 PTs in 2000
    - Of 117 responding - plantar fasciitis most common foot condition treated

## Risk Factors

- Strong Association
  - BMI in non-athletic population
- Weak Association
  - Increased age
  - Decreased ankle dorsiflexion
  - Decreased 1st MTP extension
  - Prolonged standing
- Inconclusive
  - Static foot posture
  - Dynamic foot motion
- NO association
  - Height in non-athletic population
  - Height, Weight, & BMI in athletic population

From Irving, et al: J Science Med Sport, 2006

## Prognostic Groups

Group 1: Full Recovery	Group 2: Full to Partial Recovery	Group 3: Partial Recovery
Symptom duration < 2 months	Symptom duration 2 to 6 months	Symptom duration > 6 months
Is non-athletic OR participates in athletic activity	Is non-athletic OR participates in athletic activity	Is non-athletic > 50 years old
BMI < 25 kg/m <sup>2</sup>	Decreased ankle DF	Decreased ankle DF
Recent & substantial increase in standing at work OR athletic activity	BMI 25 to 30 kg/m <sup>2</sup>	BMI > 30 kg/m <sup>2</sup>
	Prolonged standing or walking	Prolonged standing or walking
	Pronated foot posture?	Decreased 1st MTP Ext
		Pronated foot posture?

## Clinical Diagnosis

- Diagnosis made with reasonable certainty based on clinical assessment alone
  - Insidious onset of plantar heel pain with WB after period of Non-WB
    - Most noticeable in AM with 1st step or after inactivity
  - Can have antalgic gait
  - History indicates recent change in level of activity
  - Sharp, localized pain under anteromedial aspect of plantar heel
    - Parathesias are uncommon



## Tests & Measurements

	GROUP 1	GROUP 2	GROUP 3
ICF Impairment			
Pain	VAS FAAM Palpation	VAS FAAM Palpation	VAS FAAM Palpation
Power of isolated muscles	MMT of extrinsics & intrinsics	MMT of extrinsics & intrinsics	MMT of extrinsics & intrinsics

## Tests & Measurements

	GROUP 1	GROUP 2	GROUP 3
ICF Impairment			
Mobility of single joint/tarsal bones	Active & passive RF & MF mobility DF ROM 1st MTP Ext	Active & passive RF & MF mobility DF ROM 1st MTP Ext Assess LAA	Active & passive RF & MF mobility DF ROM 1st MTP Ext Assess LAA

## Tests & Measurements

	GROUP 1	GROUP 2	GROUP 3
ICF Impairment			
Gait Pattern	Gait Analysis	Gait Analysis	Gait Analysis
Ligaments & fascia of foot		Windless test	Windless test

## Differential Dx

- Calcaneal Stress Fx
- Bone bruise
- Fat pad atrophy
- Tarsal tunnel syndrome
- Soft tissue, primary or metastatic bone tumors
- Sever disease
- Referred pain secondary to S1 radiculopathy

## Interventions

- Level of Evidence Classification

Level I	Evidence obtained from high quality randomized controlled trials
Level II	Evidence obtained from lesser quality randomized controlled trials or prospective comparative studies
Level III	Evidence obtained from retrospective comparative or case-controlled studies
Level IV	Evidence obtained from case studies

## Manual Therapy

Level of Evidence	RECOMMENDATION
IV	Manual therapy for short-term (1 to 3 months) pain & function improvement. <i>Techniques: P-A talocrural glide; Lat subtalar glide; subtalar distraction manip</i>

- Young et al, JOSPT 34:725, 2004

## Modalities

Level of Evidence	RECOMMENDATION
II	Dexamethasone 0.4% or acetic acid 5% delivered via iontophoresis to provide short-term (2 to 4 weeks) pain relief and function

- Gudeman et al. Am J Sports Med 25:312, 1997
- Osborne & Allison, Br J Sports Med 40:545, 2006

## Stretching

Level of Evidence	RECOMMENDATION
II	Calf muscle &/or plantar fascia stretching for short-term (2 to 4 months) pain relief & calf flexibility improvement. <i>Stretching dosage can be sustained or intermittent.</i>

- Porter et al, Foot Ankle Int 23:619, 2002
- Digiovanni et al, J Bone Joint Surg Am 85-A:1270, 2003

## Taping

Level of Evidence	RECOMMENDATION
II	Calcaneal or low-Dye taping to provide short-term (7 to 10 days) pain relief, <i>but no function improvement</i>

- Hyland et al, JOSPT 36:364, 2006
- Radford et al, BMC Musculoskeletal Disord 40:870, 2006

## Night Splints

Level of Evidence	RECOMMENDATION
II	Night splints should be used when symptoms > 6 months. <i>Desired length of wear time = 1 to 3 months. Type of splint does not affect outcome</i>

- Batt et al, Clin J Sports Med 6:158, 1996
- Powell et al, Foot Ankle Int 19:10, 1998
- Barry et al, J Foot Ankle Surg 41:221, 2002
- Roos et al, Foot Ankle Int 27:606, 2006

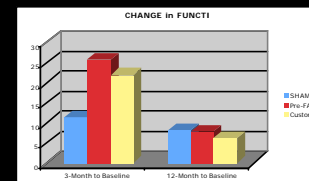
## Orthotic Devices

Level of Evidence	RECOMMENDATION
I	Pre-fabricated or custom foot orthoses can provide short-term (3 months) pain and function improvement. <i>Type of orthotic makes no differences in degree of pain or function improvement.</i>

- Pfeffer et al. Foot Ankle Int 20:214, 1999
- Martin et al, JAPMA 91:55, 2001
- Landorf et al, Arch Intern Med 166:1305, 2006

## Landorf et al, Arch Intern Med, 2006

- Participant-blinded, randomized trial
- 12 month duration
- 3 groups
  - Sham = 46
  - Pre-FAB = 44
  - Custom = 46
- Outcomes
  - FHSQ
    - Pain
    - Function



## PT Interventions

Group 1: Full Recovery	Group 2: Full to Partial Recovery	Group 3: Partial Recovery
<p>2 to 3 Iontophoresis Tx</p> <p>Manual therapy</p> <p>Specific plantar fascia or calf muscle stretching</p> <p>Extrinsic &amp; Intrinsic muscle strengthening</p> <p>Taping or Pre-fabricated foot orthoses</p> <p>Patient education</p>	<p>Manual therapy</p> <p>Specific plantar fascia or calf muscle stretching</p> <p>Extrinsic &amp; Intrinsic muscle strengthening</p> <p>Taping or Pre-fabricated foot orthoses</p> <p>Patient education</p>	<p>Specific plantar fascia or calf muscle stretching</p> <p>Extrinsic &amp; Intrinsic muscle strengthening</p> <p>Taping or Pre-fabricated foot orthoses</p> <p>Patient education</p> <p>NIGHT SPLINTS</p>

