

What is the best treatment for plantar fasciitis?

■ EVIDENCE-BASED ANSWER

Mechanical therapies—such as taping, tension night splinting, and rigid arch support—are the most effective treatment for plantar fasciitis (strength of recommendation: **A**, based on randomized controlled trials). If limited or no improvement is observed after 6 months of mechanical therapy, extracorporeal shock wave therapy (Orthotripsy) is the next treatment of choice (strength of recommendation [SOR]: **A**, based on meta-analysis of randomized controlled trials). When mechanical therapies and extracorporeal shock wave therapy have failed for more than 1 year, surgical treatment may be considered (SOR: **C**, based on a case-series study).

■ EVIDENCE SUMMARY

In a prospective, observer-blinded study, 103 subjects were randomized to 1 of 3 treatment categories: anti-inflammatory (etodolac plus corticosteroid injections); accommodative (viscoelastic heel cup); or mechanical (low-dye taping for 1 month followed by rigid custom orthosis for 2 months).¹ After 3 months of treatment, 70% of patients in the mechanical treatment group rated their functional outcome as excellent, compared with only 33% of the anti-inflammatory group and 30% of the accommodative group ($P=.005$). Additionally, the mechanically treated group was less likely to terminate treatment early because of treatment failure ($P<.001$).

Several of the same researchers then went a step further to find out which specific mechanical treatment is best. They found no statistically significant difference among treatment with tension night splinting (**Figure 1**), custom rigid orthosis, and over-the-counter arch supports.² A

retrospective study of 237 subjects also concluded that mechanical treatment is better than anti-inflammatory or accommodative treatments.³

Another prospective, observer-blinded study randomized 116 patients to 1 of 2 groups for 3 months.⁴ The first group of patients were treated with a nonsteroidal anti-inflammatory drug (piroxicam) and Achilles tendon stretching 3 times a day. The second group received the same treatment but also wore plastic tension night splints in 5° of dorsiflexion. After 3 months, in an intention-to-treat analysis, no statistically significant difference was detected in subjective pain between the 2 groups. In this study, patient compliance with the tension night splinting was poor, and this likely affected the outcome.

From 1993–1995 an observer-blinded randomized controlled trial of 112 patients compared standard with sham extracorporeal shock wave therapy.⁵ The main outcome measure was

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What is a Clinical Inquiry?

Clinical Inquiries answer real questions that family physicians submit to the Family Practice Inquiries Network (FPIN), a national, not-for-profit consortium of family practice departments, residency programs, academic health sciences libraries, primary care practice-based research networks, and individuals with particular expertise.

Questions chosen for Clinical Inquiries are those considered most important, according to results of web-based voting by family physicians across the U.S.

Answers are developed by a specific method:

- First, extensive literature searches are conducted by medical librarians.
- Clinicians then review the evidence and write the answers, which are then peer reviewed.
- Finally, a practicing family physician writes a commentary.

patient satisfaction on a 4-step score at 6 months and 5 years. At 6 months, the treatment group had a significantly better 4-step score than the placebo group ($P < .0001$). In fact, 51% of treatment-group patients were pain-free, while none of the 48 placebo-group patients were pain-free. After 5 years, the 4-step score only demonstrated a trend in favor of the treatment group ($P < .071$) because of a high rate of good results from subsequent surgery in the placebo group. Thirteen percent of the treatment-group patients had undergone a heel operation, compared with 58% of placebo-group patients.

A controlled and observer-blinded study of 302 patients with plantar fasciitis compared standard extracorporeal shock wave therapy with sham treatment.⁶ The treated patients had significantly lower pain scores (as measured on a visual analog scale) than the placebo group (1.9 vs 4.7). Three months post-treatment, half as many treated patients were taking pain medication when compared with placebo patients. After 1 year of follow-up, 94% of the treatment group patients were still pain-free, with a pain score of < 2 .

One randomized controlled study of 166 patients found no evidence to support a beneficial effect on pain, function, and quality of life of extracorporeal shock wave therapy over a sham treatment.⁷ Of note, this study enrolled patients who had a minimum of 6 weeks of symptoms. All recommendations in the US are to reserve extracorporeal shock wave therapy for patients with more than 6 months of symptoms.

A meta-analysis of 8 published studies involving 840 patients whose condition was not improved after conservative therapy for at least 6 months showed that up to 88% of patients experienced good to excellent outcomes with extracorporeal shock wave therapy and were satisfied with the result.⁶

As for surgical treatment, in a prospective study of 43 patients with 47 painful heels followed for an average of 31 months, only 49% of the patients were satisfied with their outcome.⁸ Patient expectations should be considered in pre-

FIGURE 1 Tension night splinting

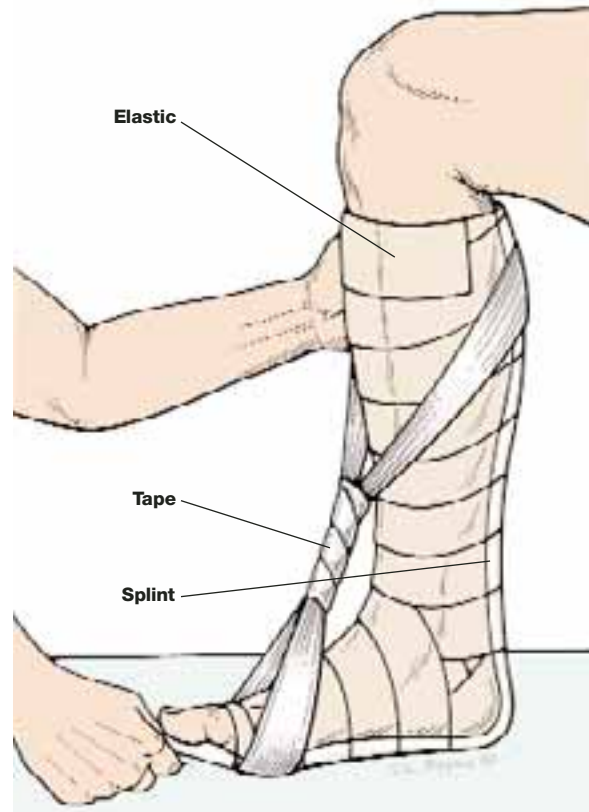


ILLUSTRATION BY CHARLES H. BOYTER

With the knee flexed 90°, secure the splint to the leg with elastic. Remove the splint and moisten, then reapply with the ankle at maximum dorsiflexion. Apply tape in a figure-8 until the fiberglass hardens.

operative counseling. In contrast to surgery, either open or endoscopic, extracorporeal shock wave therapy does not require the patient avoid weight-bearing or a prolonged time for return to work.

■ RECOMMENDATIONS FROM OTHERS

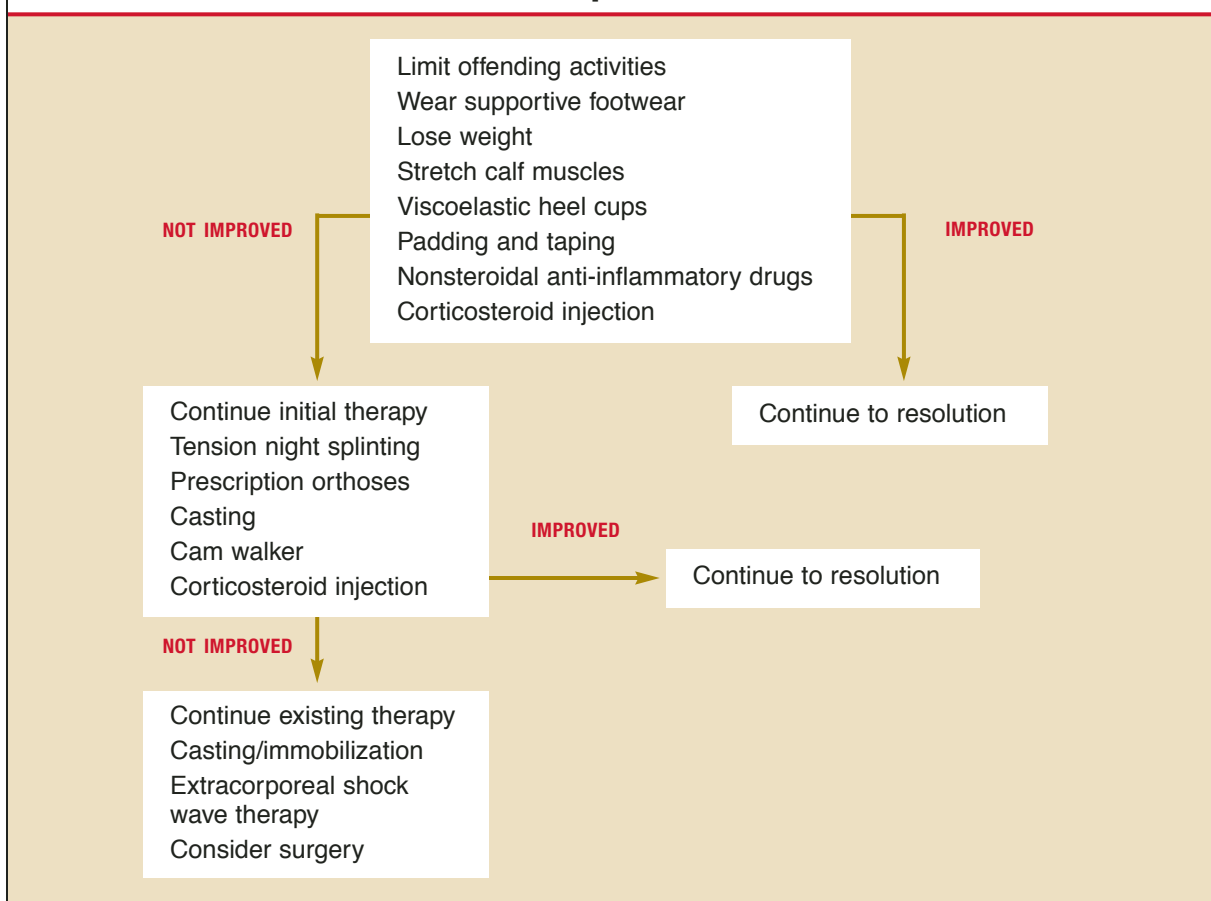
Figure 2 has been modified from a clinical practice guideline on the treatment of plantar fasciitis published by the American College of Foot and Ankle Surgeons.⁹

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FIGURE 2

Treatment of plantar fasciitis



CLINICAL COMMENTARY

Keys to treatment: Avoid overuse, stabilize, be patient

Plantar fasciitis (heel pain syndrome) is one of the most common disorders of the foot and ankle and is notoriously difficult to treat. Patients are commonly symptomatic for months, leading to frustration, poor compliance, and general dissatisfaction.

From a pathophysiologic perspective, plantar fasciitis is a form of overuse syndrome. When approached in this manner, it makes intuitive (and now scientific) sense that stabilization of the proximal fascial enthesis at the point of its insertion to the calcaneus is the key to clinical resolution of symptoms. Activity modification,

mechanical therapy, and patience are the essential elements for treating plantar fasciitis.

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Does physical therapy improve symptoms of fibromyalgia?

■ EVIDENCE-BASED ANSWER

Physical therapy is minimally effective in the treatment of fibromyalgia, with immediate post-treatment improvement in pain and tender points, and both short- and longer-term improved self-efficacy (confidence in performing tasks) (strength of recommendation [SOR]: **B**, 1 small, high-quality randomized controlled trial, 4 additional small randomized controlled trials).

Multidisciplinary rehabilitation is probably not effective for this disorder but warrants future research, as trial quality is poor (SOR: **B**, systematic review of 4 small or low-quality and 3 additional randomized controlled trials on widespread pain conditions).

■ EVIDENCE SUMMARY

The goal of physical therapy is to maximize function and reduce impairment to limit disability in patients with musculoskeletal conditions.¹ Based on a British study, physical therapists most commonly use exercise, education about correct posture and functional activity, relaxation, and energy conservation and fatigue management.² For this review, physical therapy is defined as a treatment program that includes patient education and supervised exercise.

In the highest-quality trial, Buckelew and colleagues³ randomized 119 subjects to 1 of 4 groups: biofeedback and relaxation training, exercise training, combination treatment, and an education and attention control program. Individuals were evaluated on measures of pain, function, disease impact, and self-efficacy. Evaluators were blinded to treatment group. Patients were followed for 2 years, and follow-up information was available on 85% of patients.

At immediate postintervention follow-up, all treatment groups were significantly improved on tender-point index score compared with the control group, but this was due to a modest deterioration for the control group rather than improvements in the treatment groups. In addition, all groups showed improvements in self-efficacy for function compared with the control group but not for other self-efficacy measures. While within-group improvements in the treatment groups were seen, no significant differences were seen from the control group.

Another trial randomized 99 patients to 3 groups: education and cognitive behavioral therapy; education, cognitive behavioral therapy and exercise; or a wait-list control group.⁴ At the 6-month follow-up, the education group scored significantly higher than the others—but only on self-reported measures of daily functioning and self-efficacy.

In another study, 45 patients with fibromyalgia were randomly assigned to a 6-week program combining exercise and multidisciplinary education or to a control group.⁵ The treatment group had significant improvements in walking distance and for 2 measures on the Fibromyalgia Impact Questionnaire (feeling bad and morning fatigue). Keel and colleagues⁶ found no immediate treatment benefit following 15 weeks of education, cognitive behavioral therapy, and exercise vs relaxation training in their small randomized controlled trial.⁶

In contrast, another study reported significant and immediate improvements in 2 groups—exercise and education; exercise, education, and

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