

# **A SELECTION OF ARTICLES ABOUT THE USING NIGHT SPLINTS.**

**Prepared by [www.footinjury.com.au](http://www.footinjury.com.au) for general information about night splints. The articles have been sourced from a variety of scientific journals 1991 to 2005**

## **Night splint treatment for plantar fasciitis: A prospective randomized study**

**Probe RA, Baca M, Adams R, Preece C.**

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A prospective randomized study of 116 patients with plantar fasciitis was performed to determine the effectiveness of adjuvant night splint therapy in relieving the acute symptoms of plantar fasciitis. Patients were randomized into one of two groups. Patients in Group 1 were treated with 1 month of oral antiinflammatory medication, Achilles stretching exercises, and shoe recommendations. Patients in Group 2 received identical treatment but also used a dorsiflexion night splint for 3 months. Blinded clinical review of patients was performed at 4, 6, and 12 weeks. Health status data Short Form 36 also was collected at these times and again at an average 19 months of followup. Overall, 68% of patients reported improvement with this nonoperative protocol for a 12-week period. No statistical difference was seen with the presence or absence of a night splint. In addition, no differences in improvement rates were observed with gender, duration of antecedent symptoms, the presence of bilateral symptoms, or the presence of a heel spur. Age older than 45 years did prove to be a statistically significant poor prognostic factor for improvement at the 12-week follow-up. Short Form 36 data obtained at baseline showed significantly lowered perception of health when compared with age matched controls. Patients in both treatment groups had significant improvement in Short Form 36 scores with 12 weeks of conservative care.

## **Orthoses in the treatment of rearfoot problems**

**Sobel E; Levitz SJ; Caselli MA**

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Orthotic management is helpful in the treatment of most orthopedic conditions involving the rearfoot, including plantar fasciitis, Achilles tendon disorders, posterior tibial tendon dysfunction, flatfoot, ankle sprains, and problems associated with diabetes, arthritis, and equinus disorders. A review of the effectiveness of orthoses in the treatment of these conditions is presented here. An in- depth analysis of the orthotic management of plantar fasciitis and a critical review of foot orthoses for the pronated foot are presented. Also discussed are the rationale and effectiveness of the tension night splint in the treatment of plantar fasciitis, orthotic devices for the different stages of posterior tibial tendon dysfunction, and the various categories of orthoses for off-loading the diabetic foot. The modern ankle brace, the effectiveness of prefabricated versus prescription foot orthoses, and recent developments in the ankle-foot orthosis are also reviewed. NLM PUBMED CIT. ID: 10349286 SOURCE: J Am Podiatr Med Assoc 1999 May;89(5):220-33 8

## **Effective treatment of chronic plantar fasciitis with dorsiflexion night splints: a crossover prospective randomized outcome study.**

**Powell M; Post WR; Keener J; Wearden S**

Department of Orthopaedics, West Virginia University, Morgantown 26505, USA.

Chronic plantar fasciitis frustrates patients and treating physicians. Our hypothesis was that use of a dorsiflexion night splint for 1 month would effectively treat patients with recalcitrant plantar fasciitis. A 6-month randomized crossover study included 37 patients with chronic plantar fasciitis. Patients were treated with dorsiflexion night splints for 1 month. Group A wore splints for the 1st month and group B for the 2nd month. No splints were used in either group for the final 4 months of the study. No other medications, stretching, or strengthening exercises were prescribed. Eighty-eight percent of patients who completed the study improved. Eighty percent of the involved feet improved subjectively. Results of the AOFAS Ankle-Hindfoot Rating System and the Mayo Clinical Scoring System demonstrated significant improvement for both groups during the period of splint wear. Improvements were maintained at study completion. Response to splinting did not correlate with foot type, degree of obesity, or the presence of heel spur on radiographs. We believe dorsiflexion splints provide relief from the symptoms of recalcitrant plantar fasciitis in the majority of patients. NLM PUBMED CIT. ID: 9462907 SOURCE: Foot Ankle Int 1998 Jan;19(1):10-8 61

## **Treatment of plantar fasciitis with a night splint and shoe modification consisting of a steel shank and anterior rocker bottom**

**Mizel MS; Marymont JV; Trepman E**

Department of Orthopaedics, Johns Hopkins Hospital, Baltimore, Maryland 21287, USA. Comment in: Foot Ankle Int 1997 Jul;18(7):458

Seventy-one feet in 57 patients with plantar fasciitis were treated with the combination of a night splint and a shoe modification consisting of a steel shank and anterior rocker bottom. At average follow-up of 16 months, symptoms were resolved in 42 (59%), improved in 13 (18%), not changed in 11 (15%), and worse in 5 (7%) of the feet. No relation was found between outcome and age, gender, duration of symptoms, and bilateral involvement. The method is effective for the treatment of plantar fasciitis. NLM PUBMED CIT. ID: 8973894 SOURCE: Foot Ankle Int 1996 Dec;17(12):732-5 94

## **Plantar fasciitis: a prospective randomized clinical trial of the tension night splint**

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**OBJECTIVE:** The objective of this study was to evaluate the efficacy of a tension night splint (TNS) as part of a treatment regimen for the management of plantar fasciitis. **DESIGN:** The design was a randomized clinical trial. **SETTING:** The setting was a university-based primary care sports medicine clinic in California. **PATIENTS:** Forty patients with plantar fasciitis entered the study (age range, 20-74 years; average age, 45.7 years). Excluded from the study were patients with other concomitant ankle or foot pathology. Thirty-two patients (21 women, 11 men) completed the study with 33 treated feet. **INTERVENTION:** The patients were randomized to one of two treatment groups. The control group (n = 17) received standard treatment of antiinflammatory medication (Ibuprofen), a Viscoheel softspot heel

cushion (Bauerfeind USA, Kennesaw, GA, U.S.A.) and a stretching program for the gastrocnemius and soleus muscles. The tension night split group (n = 16) received the same standard treatment protocol and additionally an office manufactured custom fitted posterior splint to be used at night. Those patients in the control group not responding to treatment after 8- 12 weeks were crossed over to the tension night splint group. Patients were reviewed every 4 weeks for symptom assessment and compliance. MAIN OUTCOME MEASURES: The main outcome measures were subjective assessment of pain (Visual analogue scale), plantar fascial tenderness, and ankle range of motion. Patients were discharged from either arm of the trial when they had resumed normal activities with minimal or no discomfort. This end point was recorded as weeks to cure. MAIN RESULTS: There was no significant difference in the demographics of the two groups (p > 0.05). In the control group, 6 of 17 were cured after an average interval of 8.8 weeks. The remaining 11 of 17 control group patients were crossed over to receive a TNS in addition to control modalities. Following cross over 8 of 11 of this group were cured after an average of 13 weeks. Three of the 11 failed to significantly respond. Of the 15 patients (16 feet) originally randomly assigned to the TNS group 16 of 16 were cured with an average treatment time of 12.5 weeks. The TNS treatment protocol was a significantly more efficacious treatment regime (p < 0.05). Thus, of 33 cases of plantar fasciitis treated in this study three failed treatment. CONCLUSION: When used in combination with a visco-elastic heel pad, stretching program and nonsteroidal anti- inflammatory drugs, the TNS is an effective treatment of plantar fasciitis. NLM PUBMED CIT. ID: 8792046 SOURCE: Clin J Sport Med 1996 Jul;6(3):158-62 103

## **Use of posterior night splints in the treatment of plantar fasciitis**

**Ryan J**

Department of Family Medicine, University of Wisconsin Medical School, Madison 53715, USA.

Plantar fasciitis is a frequent cause of heel pain in athletes, as well as in persons who are not involved in sports. Stretching, strengthening, correction of training errors and orthotics are essential components in any treatment program. For patients who do not respond to these interventions, posterior night splints can obviate the need for invasive therapies such as corticosteroid injections and surgery. NLM PUBMED CIT. ID: 7653427 SOURCE: Am Fam Physician 1995 Sep 1;52(3):891-8, 901-2 126

## **The use of night splints for treatment of recalcitrant plantar fasciitis.**

**Wapner KL; Sharkey PF**

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This study reports the results of the use of molded ankle foot orthosis night splints for the treatment of recalcitrant plantar fasciitis on 14 patients with a total of 18 symptomatic feet. All patients had symptoms for greater than 1 year and had previously undergone treatment with non- steroidal anti-inflammatory medicines, cortisone injections, shoe modifications, and physical therapy without resolution. All patients were provided with custom-molded polypropylene ankle foot orthoses in 5 degrees of dorsiflexion to be used as a night splint. With continued use of nonsteroidal anti-inflammatory medication, Tuli heel cups, Spenco liners, and general stretching exercises, successful resolution occurred in 11 patients in less than 4 months. There were three failures. It is felt that the use of night splints provides a useful, cost-effective adjunct to current therapeutic regimens of plantar fasciitis. NLM PUBMED CIT. ID: 1791004 SOURCE: Foot Ankle 1991 Dec;12(3):135-7 199