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## Effectiveness Of A Short-Term Use Of Minimalist Footwear Versus Insole On Pain, Function And Plantar Load In Women's With Plantar Fasciitis And Calcaneus Spur: A Randomized Controlled Trial

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**Introduction:** Plantar fasciitis (PF) and calcaneus spur (CS), are most common disorder of the musculoskeletal system, which as and Contributes to the incapacity for work and gait in 15% of the world population [1,2]. The stress of mechanical stretching on the plantar fascia, due to calcaneus overload, is one of the main intrinsic causes for the onset of PF. In this rational, inadequate footwear is an extrinsic factor that can result in worsening and progression of these diseases. Among the Conservative treatments, the insoles stand out as one of the effective mechanical treatments to improve immediate short-term Pain symptoms. Recent studies, not specific to FP, has been showing the short- and long-term benefits of flexible Footwear to provide greater foot flexibility and reduced overload. The aim of the current study was to evaluate the Therapeutic effect of low flexible footwear associated with insoles in women with PF and CS.

**Materials And Methods:** A randomized, parallel and controlled clinical trial with blind assessor was conducted in which 60 women's were Randomized and allocated to the intervention groups (49.6±6.0 yr, 85.4±13.7 kg, 1.68±9.2 m). The intervention groups were: flexible footwear group-FFG (n= 10 women with PF; n=10 women with CS), Orthopedic insole on flexible footwear Group-IOG (n= 10 women with PF; n=10 women with CS) and control-GC group (n = 20). All women were assessed at Baseline and after three months into the intervention group. The footwear use for three months, for at least six hours a day, Seven days a week (42 hours weekly) was adopted as intervention. A rescue analgesic medication (acetaminophen) was allowed, only if necessary, in a maximum of 2 grams daily. The primary variables were the pain symptom verified by the Visual analogue scale (VAS) and the feet disability domains by the FFI score (Foot Function Index). The secondary was plantar pressure evaluated by pressure platform system during gait. Maximal force, peak pressure and contact area were Evaluated over the lateral and medial rearfoot, midfoot and forefoot. The effects of time (beginning and 3 months), group (FFG, IOG and GC) and interaction (time and group) were calculated by means of anovas (two factors), with an alpha of 5% for significant differences.

**Results:** Both interventions were beneficial in women with PFM and GE. However, intervention with footwear (FFG) was more Effective in women with CS, due to the great improvement pain and functionality of feet and the reduction overload on Rearfoot (medial and lateral) and forefoot when compared to IOG and CG p<0.01). The insole intervention (IOG) was more Effective in reducing pain and improving foot function, as well as decreasing overload on rearfoot (medial and lateral) in Women with PF when compared to FFG and GC (p<0.01).

**Conclusion:** The use of flexible, minimalist and low cost footwear (FFG) can be recommended as a conservative mechanical treatment More effective in reducing calcaneus pain, increased foot function and reduction plantar overload on the rearfoot and Forefoot after 3 months of intervention in women's with CS. In addition, after 3 months of intervention, a greater efficacy Of the insoles inserted in the footwear was observed in relation to the use of the footwear alone, to reduce the pain and Improvement of the feet functionality with the overload reduction on rearfoot in women with PF (acute).

### Biography

Ana Paula Ribeiro has completed her phd from University of São Paulo, School of Medicine and Postdoctoral Studies from University of São Paulo, School of Medicine. She is a Researcher and Professor, Program of Post-graduation in Health Sciences and Professor at the School of Physiotherapy, University Santo Amaro, São Paulo, Brazil and Coordinator of the Laboratory of Biomechanics and Rehabilitation Musculoskeletal with emphasis on research in the areas of orthopedics, sports injuries, running and gait biomechanics, musculoskeletal disorders of the knee, ankle, foot (plantar fasciitis, knee osteoarthritis), and corporal posture and biomechanical changes in pregnant. She has published 20 papers in reputed journals and has been serving as an Editorial Board Member of reputed.

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