Reducing Plantar Pressure in Rheumatoid Arthritis: A Comparison of Running versus Off-the-shelf Orthopedic Footwear

Reference:

Scientific Literature Review

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Podiatric Relevance:
Foot pain in patients with rheumatoid arthritis is common and can be associated with excessive forefoot plantar pressure loading. The use of running shoes and off-the-shelf orthopedic footwear are commonly recommended to manage pain and discomfort in the rheumatoid patients. The purpose of this study was to determine the effect of running footwear versus off-the-shelf orthopedic footwear on plantar pressures and perceived comfort in patients with foot pain associated with rheumatoid arthritis.

Methods:
In this article an experimental, randomized, single-blind, cross-over trial of three footwear conditions including control, running, and off-the-shelf orthopedic shoes was performed utilizing twenty participants diagnosed with rheumatoid arthritis reporting chronic foot pain. Outcome measures included measurement of peak pressure and pressure-time integral, with in-shoe plantar pressure measurement system, beneath the total foot, forefoot, midfoot, and rearfoot. Perceived comfort and footwear acceptability were determined for each footwear condition.

Results:
There were a number of statistically and clinically significant differences in plantar pressure parameters recorded between the three footwear conditions. Peak pressures indicated that the pressure time integral was most effectively reduced in the running footwear compared to the orthopedic footwear for the total foot (t = 7.297, P< 0.001) and forefoot (t= 4.036, P= 0.001) Compared to the control footwear, pressure time integrals were significantly reduced in the running and orthopedic footwear for the total foot.

Conclusions:
This experimental, randomized, single-blind, cross-over trial results show that running footwear was most effective at reducing plantar pressure loading and was regarded as a comfortable and acceptable footwear alternative by participants with forefoot pain associated with rheumatoid arthritis.