

Study Shows Orthoses Offer Relief for High-arched Feet

An APERF funded-study, conducted by researchers at the University of Sydney, has shown that foot orthoses can relieve foot pain associated with high-arched feet.

According to the lead researcher, podiatrist Joshua Burns who presented his findings at the 21st Australasian Podiatry Conference in Christchurch, foot pain is common in people with high-arched feet, known as pes cavus. He said foot orthoses (shoe inserts designed to support, align or improve function of the foot) are widely used to treat chronic foot pain, but no randomised controlled trials had tested the effect of orthoses on pes cavus.

“We found that custom foot orthoses are more effective than a control for symptomatic treatment of pes cavus.”

“Patients with pes cavus frequently suffer foot pain, which can be a significant cause of disability,” says Mr Burns. “It has been estimated that 60% of people with pes cavus will experience foot pain at some time in their life, such as painful plantar callosities, metatarsalgia, osteoarthritis and heel pain. All of which are thought to be the result of abnormal pressure distribution on the plantar surface (sole) of the foot.”

The randomised controlled trial aimed to investigate the clinical efficacy of custom foot orthoses with regard to subjective patient improvements and objective biomechanical outcomes.

One hundred and fifty four men and women aged 20 to 85 years with chronic musculoskeletal foot pain and bilateral pes cavus (high arches on both feet) participated in the study. Participants were randomly assigned to receive either custom-made foot orthoses (n=75) or a ‘sham’ control insole (n=79).

The custom foot orthoses were manufactured to a standardised CAD/CAM (computer-assisted design and manufacture) protocol, while the ‘sham’ insoles were fabricated from a flat material with minimal shock absorption.

Foot pain and disability scores were measured at the beginning of the trial and after 3 months, using the Foot Health

Status Questionnaire (FHSQ): an accurate, valid and acceptable means of measuring foot health-related, quality of life before or after treatment. Changes in foot pressure were also measured using the pedomobile® system, a reliable and valid measure of in-shoe pressure.

At three months, 153 of 154 participants (99%) provided follow-up data. Foot pain and disability scores improved significantly more in the custom foot orthoses group than in the control group. Plantar pressure also improved more with custom foot orthoses compared to the control insoles.

“We found that custom foot orthoses are more effective than a control for symptomatic treatment of pes cavus,” Mr Burns said.

“However, we were not only interested to see if foot orthoses had an effect on pain and disability in patients with pes cavus, but also how they were effective: their mechanism of action. The custom

foot orthoses were shown to increase pressure at the midfoot and decrease pressure at the rearfoot and forefoot, supporting preliminary hypotheses that the mechanism of pain relief is by reduction and redistribution of plantar pressure.”

The study sets the scene for further investigation into pes cavus related pain. •

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