

FRIDAY POSTER SESSION

1. SWACSM Abstract

Arch Characteristics among Habitual Users of Minimalist Footwear

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ABSTRACT

Purported to mimic the benefits of barefoot walking, minimalist footwear (MF) has recently become popular among the general public. Though evidence suggests that MF may have a positive effect on foot health, further investigation is required to determine the mechanisms which contribute to these observed effects.

PURPOSE: The purpose of the study was to measure differences in arch characteristics between Habitual users of Minimalist shoes (HM) and Habitual users of Cushioned shoes (HC). This information may provide insight regarding the causes of MF benefits. **METHODS:** Arch height data was collected from twelve healthy HC (9m, 3f, 22.4±2.4 y) and twelve healthy HM (9 m, 3 f, 24.7±4.2 y) using an Arch Height Index (AHI) Measurement System (JAKTOOL LLC.) HM subjects used MF as their primary walking footwear for a minimum of 6 months. AHI was measured on the right foot, in both the sitting and standing positions. AHI, Arch Drop (sitting dorsum height – standing dorsum height, AD) and Arch Flexibility (AF) were calculated from the data. Subjects were then categorized based on AF: stiff (AF<13.54), normal (13.54<AF<16), and flexible (AF>16). **RESULTS:** HM have a significantly larger AD than the HC (HM: .49±.10 cm; HC: .37±.13 cm; p=.02). However, there was no significant difference in AF (HM: 16.5±4.0; HC: 13.4±5.0; p=.10), standing AHI (HM: .33±.01; HC: .34±.02; p=.75), or sitting AHI (HM: .39±.07; HC: .36±.02; p=.17). There were 6/1 stiff, 3/2 normal, and 3/9 flexible subjects in the HC/HM groups, respectively. **CONCLUSION:** The results suggest that the use of MF has a significant effect on arch drop. The number of flexible HM vs. flexible HC also suggest that the use of MF significantly increases arch flexibility. This may be because the minimal arch support in MF allows HM to be accustomed to a greater amplitude of arch motion during walking, which could lead to the development of larger AD and a more flexible arch over time. Differences in foot strike preference (forefoot vs heel) in HM could also influence the development of a more flexible arch over time. Further investigation with a larger sample size could provide additional evidence to the significance of these arch metrics.