Reviewer’s report

Title: Evaluation of orthotic insoles for people with diabetes who are at-risk of first ulceration

Version: 1 Date: 17 May 2019

Reviewer: Stephen Urry

Reviewer’s report:

The authors provide a reasoned response, including justification and manuscript modification, to the initial review comment requesting further information on the Pedar system. However, the modified manuscript fails to convey the importance of sensor performance, particularly since this investigation targets the foot in diabetes. May I suggest that the manuscript be modified further to emphasise this important aspect. The modification could be very simple and I provide the following, which the authors may use or modify if they desire. Subject to this or equivalent modification, I think the report is suitable for immediate publication.

A Novel Pedar-X® system (50Hz) (Novel, Germany) was used to collect in-shoe plantar pressure data. These insoles comprise an array of 99 sensors and measure pressure across the entire plantar surface during walking (see figure 2), however, no reference to sensor size has been found in the scientific literature. While the system has been tested for accuracy and repeatability (33), the test protocol for regional pressure measurement did not utilize the sensors in the metatarsal region, which are key to this study. The absence of information regarding the dimensions of the Pedar sensors along with the uncertainty, albeit small, regarding accuracy of metatarsal pressure measurement with this system warrant further investigation in the future in order to meet optimal characteristics reported by Davis (**).

Davis BL et al

Frequency content of normal and diabetic plantar pressure profiles: Implications for the selection of transducer sizes.

J Biomechanics Vol 29, No 7, 979-983, 1996

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