Reviewer’s report

Title: Validation of a novel Kinect-based device for 3D scanning of the foot plantar surface in weight-bearing

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Reviewer: John Burston

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Page 3

Line 57

The medial longitudinal arch of the foot is the most notable morphological feature used to characterize the foot type (8, 9), allows the foot to act like a spring

Page 4

Line 7

forces act to deform the foot joints spanning the medial longitudinal arch and the soft tissues.

Forces act to deform the foot joints and soft tissues spanning the medial longitudinal arch. - Suggestion!

Line 10

You highlight improved comfort and pressure reduction of non-weight bearing casted orthoses but why would a weightbearing cast be preferable?

If a particular foot position is contributing to the symptoms of a subject/patient, why support them in that position?
weight bearing and require modification by podiatrists with extensive experience in the field.

casting allows to obtain a foot impression and can also be applied in weight-bearing (suggestion - use undertaken rather than applied)

You state foot models are less accurate than those obtained by 3D scanning can you please justify this!

Although 3D scans are significantly cost-effective compared to the consumable costs of plaster casts (16, 17), -

Kinect sensor has been largely exploited also outside the gaming industry

- Suggestion - Kinetic sensor has also been employed outside the gaming industry

Please define user-specified tolerance
were largely similar to the corresponding PodoBox

Please delete largely

Arch Index and arch depth values were consistent with the clinical classification. The classification; the….. (Use semi colon to maintain the flow of the sentence)

Page 11

The inter-subject average RMSE in the 3D shape of the medial arch was about 1.5 mm,

Need to discuss how 1.5mm error statistically may be irrelevant but clinically could make a device unusable you need to discuss this point rather than "appears to be appropriate"

Page 12

This study has shown that the accuracy of the Kinect sensor, within the setup specifically designed for this investigation, appears sufficient to obtain 3D scans of the foot plantar surface in weight-bearing, suitable for different clinical and biomechanical applications.

Appears sufficient - this statement needs rewording and in respect to what (maybe compares well to the gold standard scanner?? Or similar to this)

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