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Comment

Comments and Reply to: Foot Plantar Pressure Measurement System: A Review. *Sensors* 2012, *12*, 9884-9912

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Comments

We would like to comment on a recent review article published in Sensors by Razak *et al.* [1]. The authors provided a review of plantar pressure measurement systems which included the discussion of the recently developed WalkinSense® system. While the authors correctly identified that our group completed research using this system [2], they have inaccurately reported the manufacturer of the system and our research findings.

The authors stated that this system was developed by our group, however, as stated in our article [2], this system was developed by Tomorrow Options Microelectronics (Sheffield, UK).

Additionally they stated inaccurately that the WalkinSense® system is similar to the F-Scan® (Tekscan, Boston, MA, USA) hardware and software and that our research concluded that WalkinSense® had a better repeatability when compared to other commercially available systems. Our research [2] clearly concluded that the WalkinSense® system was found to be as repeatable as the F-Scan® system.

There are several papers which outline the existing technologies [3], the protocols used for data collection [4,5] and the repeatability of existing systems [6]. Whilst this paper [1], is mainly intended for a different audience when compared to clinical papers, it is very important that previously published information is carefully considered, critically reviewed and succinctly presented in a review paper.

We felt compelled to write this note so that: (1) it is not misinterpreted that we developed this system and (2) our research findings are not inaccurately reported.

References

1. Razak, A.; Zayegh, A.; Begg, R.K.; Wahab, Y. Foot Plantar Pressure Measurement System: A Review. *Sensors* **2012**, *12*, 9884–9912.
2. Healy, A.; Burgess-Walker, P.; Naemi, R.; Chockalingam, N. Repeatability of WalkinSense® in Shoe Pressure Measurement System: A Preliminary study. *The Foot* **2012**, *22*, 35–39.
3. Rosenbaum, D.; Becker, H.P. Review Article: Plantar Pressure Distribution Measurements. Technical Background and Clinical Applications. *Foot Ankle Surg*. **1997**, *3*, 1–14.
4. Bus, S.A; de Lange, A. A Comparison of the 1-Step, 2-Step, and 3-Step Protocols for Obtaining Barefoot Plantar Pressure Data in the Diabetic Neuropathic Foot. *Clin. Biomech*. **2005**, *20*, 892–899.
5. McPoil, T.G.; Cornwall, M.W.; Dupuis, L.; Cornwell, M. Variability of Plantar Pressure Data. A Comparison of the Two-Step and Midgait Methods. *J. Am. Podiatr. Med. Assoc*. **1999**, *89*, 495–501.
6. Ramanathan, A.K.; Kiran, P.; Arnold, G.P.; Wang, W.; Abboud R.J. Repeatability of the Pedar-X® in-shoe pressure measuring system. *Foot Ankle Surg*. **2010**, *16*, 70–73.

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Reply

We acknowledge your concerns and would like to apologize for the unintended errors in our paper [1] while quoting two points from Healy *et al.* [2]. Firstly, the manufacturer of the system is inaccurately identified. Secondly, our sentence "has a better repeatability compared to other commercially available systems" should rather read "equal repeatability compared to F-Scan system".

The corrections made are as listed below:

- On page 9896, lines 12–13, the sentence "has a better repeatability compared to other commercially available systems" should be "equal repeatability compared to the F-Scan® system".
- On page 9897, lines 2–3, the sentence "It appears that only the sensor is their own development, the rest of the system is similar to F-Scan® (Tekscan, USA) hardware and software." should be "The "WalkinSense" system was developed by Tomorrow Options Microelectronics (Sheffield, UK). This portable system's hardware includes eight individual sensors as well as a data acquisition and processing unit, whereas the proprietary software (WalkinSense version 0.96) records and displays plantar pressure profiles".
- On page 9897, line 14, the sentence "developed their own transducer but seems to have a limited number of sensor placements" should be "has a limited number of sensor placements".
- On page 9900, line 24, the sentence "used F-Scan® (Tekscan, USA) for the sensor" should be "used a low-cost pressure transducer".

References

1. Abdul Razak, A.H.; Zayegh, A.; Begg, R.K.; Wahab, Y. Foot Plantar Pressure Measurement System: A Review. *Sensors* **2012**, *12*, 9884–9912.
2. Healy, A.; Burgess-Walker, P.; Naemi, R.; Chockalingam, N. Repeatability of WalkinSense® in Shoe Pressure Measurement System: A Preliminary Study. *The Foot* **2012**, *22*, 35–39.

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