Author’s response to reviews

Title: Modifying the IOR foot protocol to improve the diagnosis of pes-planus: application to the kinematics of feet in a 13 years old population

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Version: 4 Date: 10 November 2014

Author’s response to reviews: see over
The authors would like to thank again the reviewers for spending some of their precious time to help revising the manuscript. The authors have greatly appreciated their extremely useful suggestions.

In the present submission, according to the reviewer’s suggestion, “Tweaking..” has been removed from the title and replaced with “Modifying…”.

In addition, in order to comply with the Journal’s guidelines, a short title has been added to the figures’ legends.

The latest set of comments has all been addressed, and the corresponding point-to-point replies to each reviewer follow here below.
Reviewer's report

Title: "Tweaking" the IOR foot protocol to improve the diagnosis of pes-planus:
application to the kinematics of feet in a 13 years old population

Version: 3 Date: 27 October 2014
Reviewer: Dominic Thewlis

Reviewer's report:
The authors have done a good job addressing my original comments. I have a few minor
comments that require some attention.

Major Compulsory Revisions
None

Minor Essential Revisions
1. Line 105. Please amend from "... mostly know as..." to "...commonly known as..." Line 117.
Please amend the units from Kg to kg. Also, please report this as body mass and not weight.

All the suggested modifications have been implemented in the present revised version.

2. General. The authors state that the tweaks to the model will improve the validity relative to
clinical measures. I could not see any direct comparison made in the manuscript. I wonder if
the authors could add this as it would strengthen the work.

The authors appreciate this reviewer’s comment. The model modification related to
1MTP joint was to improve the robustness of the relevant calculations, thus not
necessarily related to an improvement of consistency with the clinical measures.
Nevertheless, this more robust model of this joint would also help representing its
motion more realistically, and therefore more consistently with the clinical observation.
In relation to the newly defined MLA angle, it was highlighted that this measure is in
agreement with the clinical observations of low-arched feet in the present population.
However, no direct comparison is possible due to the different definitions and
techniques between the clinical/radiographical ‘Moreau-Costa and Bertani’ angle and
the IORfoot MLA angle. The latter has now been defined as “a compromise between
the clinical Moreau and Costa-Bertani angle [25] and the calcaneal pitch.”
In relation to the rearfoot varus/valgus, this has been assessed against measurements using the previous definition and appeared consistent with the clinical evaluations, which measured calcaneus inclination lower than 7 deg in valgus for the present population; this was discussed in the previous version.

Discretionary Revisions
None

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
None
Reviewer's report

Title: "Tweaking" the IOR foot protocol to improve the diagnosis of pes-planus: application to the kinematics of feet in a 13 years old population

Version: 3  
Date: 21 October 2014

Reviewer: Ryan Mahaffey

Reviewer's report:

Minor Essential Revisions

1. The word “tweaking” may not be appropriate for the title of this manuscript because weaking already refers to improvements without the need for “improve” in the title. In the introduction the author’s state the aim is to apply a modified IOR foot protocol…Therefore, “Modifying the IOR foot protocol to improve…” would be better suited.

The authors welcome this reviewer’s suggestion. The title has been modified accordingly.

2. The authors have clarified the use of the Moreau and Costa-Berti angle in their cover letter, but the methods section would benefit from their description of the MLA angle as “a compromise between the clinical MCB angle and calcaneal pitch”. This would inform the reader that the IOR MLA does not strictly adhere to a clinical measure but “is applied as much as possible with the marker set”.

Again, the authors fully agree with the reviewer and the suggested edit has been implemented in the current submission.

3. The references in the method section still appear out of sync. Second paragraph…”a joint coordinate system [23]…” should probably refer to reference [20]. Also second paragraph…”as in the original model [9]…” should probably refer to reference [10]. These need to be checked and corrected.

The authors apologize for the out-of-sync references This was due to a glitch in the Endnote software formatting the references. This has now been amended in the present latest revision.
4. A reference (if possible) is required in paragraph four of discussion, sentence starting…” In-vitro experiments performed by the same authors…”

The authors understand the reviewer’s concern in relation to what stated in this section of the Discussion. The authors were here reporting the outcome of some preliminary and preparatory experiments using a plastic model of the lower limb. This data are available but currently unpublished, however the authors have considered it useful to provide the readership with some additional information to support the validity of the protocol’s modification. This has been better clarified in this latest revision.

Level of interest: An article of importance in its field
Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I declare that I have no competing interests