Reviewer's report

Title: Clinical Correlates Between Foot Posture Index and Dynamic Rearfoot Motion

Version: 1 Date: 28 October 2009

Reviewer: Keith Rome

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Overall: the paper investigates the relationship between foot type and dynamic rearfoot motion. The article will be of interest to both clinicians and researchers in the field of lower limb biomechanics. There a number of issues that needs to be addressed specifically relating to the measurement in one plane.

Major Compulsory Revisions

Title:
1. The title needs re-wording. Perhaps: “relationship between foot type and dynamic rearfoot frontal plane motion.”

Abstract:
2. Is the Foot Posture Index a validated method? Previous studies have reported to have good reliability but unclear about its validity.
3. R-correlations require significant or non-significant after each statement in the results section.

Introduction:
4. Please add references to paragraph relating to video gait analysis and statements relating to electromagnetic tracking.

Methodology:
5. Sampling method needs to be explained.
6. Further information about the inclusion/exclusion criteria needs to be added.
7. Further information about the marker placement is required. Did the author use a specific model? A diagram/photograph may enhance the text.
8. Was an independent observer used to place the markers of the foot?
9. The statistical analysis section needs to re-format:
   • Linear correlation using r-values needs to be explained with terms such as strong, weak etc.
   • The sentence about planar dominance needs to be referenced relating to this philosophy;

Results:
10. There is need to add descriptive information about the results obtained.
11. Please add to the results any significant or non-significant relationships.
12. 1st paragraph, first line on page 7, requires correlation results.
13. 2nd paragraph, first line on page 7 needs further explanation. A relationship was observed between frontal plane FPI score and frontal plane motion during gait across all participants. Does the author suggest walking speed or specific components of gait? I suggest you quote each group statistical results. The next sentence states there was a less strong relationship between total FPI score and rearfoot motion but no statistics were described.
14. Sub-group analysis was undertaken but I assume this relates to planar dominance? Why did the author not look at supinated feet?
15. Linear regression analysis results need to be explained in full. The authors have used r-square but linear regression equation but not a % variance as reported in the discussion and abstract?

Discussion
16. If the results used 3 dimensional gait analysis why only describe one plane of motion. There is no discussion about the sagittal or transverse plane component of the FPI.
17. The discussion about the planar dominance needs to be explored. I suggest that the author, in the first instance, state the planar dominance related to pronated feet otherwise it may be difficult for the reader to understand the concept.
18. All figures are not needed as they do not necessarily enhance the text.
19. Please check for minor typo errors.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I have no competing interests in the manuscript