Reviewer’s report

Title: Static foot assessments do not predict medial longitudinal arch motion during running

Version: 2 Date: 17 August 2015

Reviewer: George S Murley

In the second version of this paper, the author’s interpretation of their data has remained focused on the implications for footwear prescription. There is barely any relevance of their data to fitting footwear or injury, and thus the interpretation is speculative and not supported by any relevant evidence. Key examples are summarised below:

The author’s state in lines 225-226 ‘Traditional injury paradigms draw association between foot type and risk-factors for tissue [7, 37]’. The phrasing ‘tradition injury paradigms is quite a big give-away that this is based on ‘theory’ and is lacking empirical data. References 7 and 37 are used as evidence to support their argument that ROM is the key parameter related to tissue stress and injury. These references don’t seem to be prospective studies or systematic reviews, so at best the evidence is going to be fairly week. References 7 and 37 do not provide any compelling data to support the assertion that ROM is related to injury. Irrespective of this, in the following lines (226-229), the authors explain that static foot posture measures are redundant when fitting footwear because they do not predict MLA ROM (which is known to related to injury). But what happens if static foot type is predictive of dynamic plantar pressure (a variable known to predict injuries - see Dowling systematic review)

In lines 281-282 (conclusion section) ‘MLA deformation not angles at discrete time points has been linked to running related injuries’. Which specific injuries? This is not explained in the discussion. This just seems ‘made up’ and is not supported by the evidence presented.

The reviewer is therefore unsure why the paper is focused on the lack of correlation between static foot posture and ROM; rather than the strong associations between foot posture and MLAA at discrete time points. When I read this paper, it feels like the authors are trying very hard to force a change in the way footwear is fitted. I don’t understand the relevance…
In summary, I don’t see the relevance of this study to running shoes and the ‘footwear industry’ or running community. Nor does it have any implications for injury or pathological populations. The data does not support the conclusions and recommendations made by the authors. The paper would be much stronger if it were focused on what it set out to investigate which are the relationships between static and dynamic measures of foot posture during running.

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

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

**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'