Reviewer's report

Title: Importance and challenges of measuring intrinsic foot muscle strength: Review of the literature

Version: 2 Date: 18 September 2012

Reviewer: Karen J Mickle

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Minor Essential Revisions

P5: Quadratus plantae medialis and lateralis are listed as separate muscles within the second layer, but referred singularly as quadratus plantae throughout the rest of the text. The muscle does have two individual heads, but so does flexor hallucis brevis. Just list it as one muscle in the introduction.

Toe Dynamometry: The recent paper by Goldmann & Bruggemann (J. Anat. 221:187–194) should now be included in the review as it measures toe strength at varying ankle and metatarsal angles.

P16: The reference to the study by Mickle et al [16] has been misinterpreted as it only compared the reliability of the toe strength test when standing and sitting. The data is reported in force and was not normalised to body weight. Therefore the large variation between the sitting and standing methods can be primarily contributed to by body weight. Furthermore the statement “if the plantar pressure platform is primarily measuring intrinsic toe flexor force” is misleading. I don’t think any of the papers that have used this instrument have claimed to be measuring intrinsic toe flexor force, but rather stated that they are measuring toe strength.

MRI: The paper lacks a discussion on the limitations of MRI. One of the major limitations is the difficulty of getting the images in the same plane as the intrinsic foot muscles. Few muscles lie directly along the sagittal or transverse planes of the foot, therefore error can be introduced to the cross-sectional slices as they are measured from an oblique slice of the muscle. Ultrasound has the advantage of being able to capture more accurately the longitudinal and cross-sectional lines of individual muscles.

Table 1: Why are only the search results from Pubmed shown? The introduction lists 6 databases in addition to Google Scholar. Results from the full search should be shown.

Tables 2-5: the headers need to be formatted correctly.

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