Reviewer's report

Title: Reliability of isometric subtalar pronator and supinator strength testing

Version: 1  Date: 13 June 2014

Reviewer: Adam R Bird

Reviewer's report:

This paper was interesting to read, and I believe is very appropriate for publication in JFAR. There is a considerable need for more valid and repeatable methods for measuring isometric leg muscle contractions, and this paper investigating reliability of a novel device clearly adds to existing knowledge in the field.

I have made some general comments below that I’d like the authors to consider if possible. Additionally, this paper has a number of spelling and grammatical errors that need attention (but should be quick to fix). I’ve listed a few below, but it would be useful for another person to review the paper overall prior to resubmission.

Comments/Minor essential revisions

Background, line 2: I’m not sure if ‘unique’ is the best way to describe the STJ’s axis – there are other joints in the body with oblique (or triplanar) axes. Could this sentence be reworded?

Background, line 4: ‘…was to determine intra- and between session intrarater reliability…’, is doubling up on ‘intra’ required? Could this read: ‘…was to determine intra- and between-session rater reliability…’?

Background, line 5: Is ‘leg’ more conventionally used than ‘shank’? (Find and replace all in paper)?

Conclusions, line 20: I’m not sure if the word ‘forthcoming’ is needed here.

Background, lines 28-29: The sentence ending ‘… by stronger bracing the bony joint partners’, needs clarification. Do you mean improving joint stability?

Background, paragraph 2, lines 32-42: This is a good paragraph, but needs some further referencing – eg. for the point made about motivation of the participant. The last sentence in the paragraph is grammatically awkward.

Background, paragraph 3: Lines 46-47: This sentence is awkward, and I’m not sure that imprecision of measurement of foot pronators/supinators is entirely down to the oblique axis of the STJ.

Lines 48-49: I unfortunately can’t get access to your reference number 5 which describes your machine in detail – but could you clarify if the machine developed
sets its axis position the same for all participants? This section may need to briefly comment on published work that has discussed variations in STJ and position of other foot axes, both within the population and in dynamic movement in gait.

Background, paragraph 3, lines 54-57: This sentence is somewhat confusing, it might benefit from rewording and dividing into two sentences.

Background, paragraph 4: Change ‘antipronator’ for ‘eccentric contraction’? Change ‘cab’ to ‘can’.

Strength testing, lines 101-116: This paragraph is nicely put together, and the design of the machine would appear to balance practicality and function well. Would it be possible to include a figure of the biofeedback screen/trace?

EMG, line 150: Is the conventional English description ‘lateral malleolus’ rather than ‘malleolus lateralis fibulae’?

Line 171-2: Awkward sentence.

Discussion, line 236: ‘The’ principal finding…

Line 280: Do you have anything to reference/further justify these comments – particularly aging and STJ proprioception?

Line 298: If this data is unpublished, and you haven’t given much detail within the current paper, I would consider removing this comment.

Line 304: I would replace ‘runners suffering from overpronation’ to ‘runners who excessively pronate’.

Table 1: Please list cm next to foot length.

Thanks for the opportunity to review this paper.

Level of interest: An article of importance in its field

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