Reviewer's report

Title: Effect of children's shoes on gait. A systematic review and meta-analysis

Version: 1 Date: 21 October 2010

Reviewer: Daniel Bonanno

Reviewer's report:

This manuscript is well written and on a topic which I expect will be of great interest to readers of JFAR. I look forward to seeing it published but have made some suggestions. The authors can consider my suggestions as either minor or discretionary revisions as I don’t see the need for this paper to undergo any major revisions.

Major Compulsory Revisions
Not required

Minor Essential Revisions
1) Abstract, Results, Line 6: I suggest placing ‘and’ before ‘tibialis anterior activity’.
2) Background, line 4: I suggest that ‘malalignment’ is not the most appropriate word to describe the height of the medial longitudinal arch. Is a lower MLA really a malalignment or a variation of foot posture?
3) Methods, Inclusion and exclusion criteria, line 1: Replace ‘a’ with ‘this’ before ‘study were determined a priori’.
4) Results, Kinetics findings, line 3: It is stated that no significant findings were found in kinetic walking variables. In the very next sentence it states that Kristen et al. reported significantly higher vertical GRF for shod walking than barefoot. This needs to be clarified as the latter comment is in contrast with the previous which may leave the reader confused as to whether there is or isn’t any differences between the shod and unshod conditions.
5) Discussion, Walking, paragraph 1: The general structure of this paragraph could be structured differently to allow greater readability. I would encourage the authors to consider trying to either merge some sentences together and/or create better links between the sentences.
6) Discussion, Running, paragraph 2, lines 1-2: The sentence opens with ‘Running with shoes…and at the end of the sentence it closes with ‘during running’. I suggest removing the latter as ‘running’ is already implied early in the sentence.
7) Discussion, Running, paragraph 2, line 5: A better link between the discussion on running velocity and rearfoot strike positions would be beneficial.
Discretionary Revisions

1) Abstract, Results: You have provided ‘increases’ and ‘decreases’ for shod walking but you have only provided ‘decreases’ for shod running. Even if there were no ‘increases’ found for shod running I feel it would be worth stating this in the abstract.

2) Abstract, Conclusions: Do the authors think it is worth stating whether the changes seen when wearing shoes are considered hazardous, beneficial, or unknown?

9) Methods, Quality assessment, lines 5-12: I believe the description of the Quality Index sub-scales could benefit from some basic sentence re-structuring which should make for easier reading. For example, consider replacing ‘study reporting 10 items’ with ‘10 items assessed study reporting’. The same approach can be applied to internal/external validity, study power etc.

10) Results, Description of methodological approach of included studies, line 5: Should it be noted whether the ‘self-selected gait velocity’ was controlled within trials as altered walking or running speed could possibly explain differences between shod and unshod findings.

11) Results, Kinematics findings: Should this be titled ‘Kinematic findings’ rather than ‘Kinematics’?

12) Results, Kinematics findings, paragraph 2, line 9: Consider changing ‘19% each’ to ‘19% for both’.

13) Results, Kinetics findings: Should this be titled ‘Kinetic findings’ rather than ‘Kinetics’?

14) Results, EMG: As there is no table for EMG statistics, unlike other variables previously discussed, the authors should consider providing the statistical data in-text.

15) Discussion, Running, Quality assessment, line 2: Consider changing ‘selection bias and confounding’ to ‘selection and confounding biases.’

16) Discussion, Clinical Implications, paragraph 2 line 3. Two sentences in a row start with ‘However’ – it is possible to use a different word here that is still appropriate?

17) Discussion: It is noted that in the ‘results’ section of the paper the age of the participants ranged from 2 to 15 years with all but two studies including children in the middle childhood age (ages 7-11). I believe it is worth noting this as a limitation as the outcomes of this systematic review were largely determined from research involving children in middle childhood and therefore it’s application to younger, and even older children, will need to be considered with an element of caution.

18) In-text referencing: Throughout the document ‘et al.’ is used where there are multiple authors. I suggest that when there are two authors that they are both provided in-text eg. ‘Jones and Smith (23) have previously shown...and where is more than two authors I would suggest the use of ‘Jones and co-investigators (or
co-researchers, colleagues etc.) have previously shown…’

**Level of interest:** An article of outstanding merit and interest 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'