Reviewer's report

Title: The association between functional movement and overweight and obesity in British primary school children

Version: 2 Date: 7 September 2012

Reviewer number: 1

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A. MAJOR COMPULSORY REVISIONS

A1. In the abstract, it would me more logical to first present all results in relation to BMI (status) and then gender, in two separate blocks. Please respect this issue by the choice of sentence order, given that the relation with OW/OB (and not gender) is the main focus of this paper!

Please do also take this important advice into account when it comes to describing data analysis, presenting and discussing study results.

A2. Authors have split weight status groups in to NW, OW and OB groups as previously suggested. However, when interpreting/discussing the results (in particular in the abstract, discussion and conclusion), the distinction between children with OW and OB is not consistently being made. However, results clearly show that the impact of excess body mass / fatness on children’s functional movement is different according to their particular weight category. The condition of OW versus OB and their relating FMS outcome(s) cannot simply be equated.

A3. The way of thought formulated on P.13-14 in the discussion is nothing new. The whole idea regarding the reciprocal relationships between functional movement / motor competence, physical (in)activity and (un)healthy weight has already been described in the conceptual model of Stodden et al. (2008). Authors should refer to this original reference.

B. MINOR ESSENTIAL REVISIONS

B1. From the last paragraph(s) of the introduction it seems that this study was conducted because the FMS has not been evaluated on item level in OW/OB children before. I think authors should more clearly underline why this new information is needed within this population and what insights or (clinical) value results may offer.

B2. The difference between the concepts ‘Fundamental Movement Skills’ and ‘Functional Movement (Skill)’ now clear from the manuscript. However, I think authors should also clarify that they only use the abbreviation “FMS” for the “Functional Movement Screen” test battery itself.

B3. Despite authors adding Kappa values illustrating high test-retest agreement
for both total and individual item scores on the FMS (within a pilot sample of 15 participants), information on validity of the test tool being used is still lacking.

B4. Please make clear to the reader how significant effects resulting from the Kruskal-Wallis test (NW vs. OW vs. OB) were analysed post-hoc and further interpreted. This crucial information is missing.

B5. Results section: P10, 2nd paragraph. Given that the percentages (score distributions) for each individual FMS test between boys and girls are already presented in Figure 1, there is no need to repeat these numbers in the text. Please modify the manuscript in this respect.

B6. Discussion: P11, 1st paragraph, 2nd sentence. This statement is not correct (cfr. A2), given that OW children were only outperformed by their NW peers on the deep squat and shoulder mobility tests! Such (annoying) errors must be avoided at all times.

B7. Discussion: P13, reads: “As Burton et al. did not assess or control for weight status it is difficult to draw further parallels between their study and the data presented here.” This statement cannot be made, given that the authors themselves did not control for weight status either because they only looked at the main effect of gender was and no interaction effects has been investigated. Please rephrase the whole paragraph in which the present study results with those of Burton et al. (2009) OR adjust the way your own data has been statistically analysed.

B8. Discussion: P16, 2nd paragraph, 1st sentence(s). Please do not repeat the information that has already been mentioned in the introduction.

B10. Discussion: P16-17. Despite the authors pointing out that the FMS has already been used in non-athletic populations, I’m still not convinced that this particular tool is the best option to evaluate movement quality in children (in a field setting).

C. DISCRETIONARY REVISIONS

C1. P5. Typo in top paragraph: “overweigth”. Please change this into “overweight”.

C2. P5. Typo in 2nd paragraph, 1st sentence: “… has…?…” # A verb is missing.

C3. P7. Top paragraph: Please integrate the last sentence within the previous one, as follows “… any form of developmental disorder (i.e. DCD, dyspraxia, dyslexia, Asperger’s syndrome and autism) …”

C4. P7. Anthropometry paragraph, 1st sentence: Do also define to the nearest … cm (0.1, 0.5, 1 ???).

C5. P11. Top paragraph, 1st sentence: Please change “overweight/obese” into “overweight and obese”, given that you analysed the results of children in both weight categories as separate groups. Same remark for P14, bottom paragraph,
Of course, do also change the contents of the indicated sentences according to your results.

C6. P16, 2nd paragraph, 1st sentence. Please avoid confusion by talking about “Fundamental Movement Patterns” instead of “Fundamental movement patterns”.

C6. P16, bottom paragraph, last sentence. Please provide a correct reference to the work of ‘Cook / Cook / Cowan’.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.