Reviewer’s report

Title: Backward walking training improves balance in school-aged children

Version: 1 Date: 6 July 2011

Reviewer number: 3

Reviewer’s report:

GENERAL COMMENTS

The paper presents a study about the effects of a backward walking intervention on balance in a group of young students.

The authors need to improve the clarity of the manuscript and the content of the “methods” and “discussion” sections. In particular, the statistical approach needs further explanation and the discussion lacks of a sound and critical analysis of results.

Hopefully, you will find the specific comments below useful when revising your manuscript.

SPECIFIC COMMENTS

Major Compulsory Revision

(page/paragraph)

(1/1) BW may offer some benefits for what? Please briefly indicate the potential of this type of intervention.

(1/2) Please check the use of “whereas”. The methods are presented in a way that it seems that only the control group has been assessed. I would suggest to rephrase the entire paragraph.

(4/2) When you use the word “significant” you usually refer to statistics. How was this issue addressed in the comparison between control and experimental group characteristics?

(5/3) Why was the kinematic analysis performed only after the 12-week training? How can this give any information about the effects of FW or BW training (i.e. differences between pre and post intervention)?

(6/1) How was the calibration done? What about the reliability of kinematic measures?

(6/2) How were the “stride lengths” calculated in your protocol?

(6/3) The description of the statistical approach has to be soundly improved. The paragraph is not clear and some important information is missing. For example: (1) it has not been reported if any test of normality has been applied before using parametric statistics; (2) no indication about reliability of test/retest protocols in balance tests has been given. Besides citing other authors’ papers, it might be
helpful for the reader to know at least the magnitude of possible errors in performing a test/retest protocol with balance assessment.

(6/4) What was the effect size of those differences?

(7/2) How can you affirm that “BW training had no effect” if you did not collect a baseline before the intervention? (please see also comment (5/3)).

(7/2) The conclusion of this paragraph is not very clear. Please make the message more explicit.

(7/3) Does this paragraph contain any relevant information for the aims of the paper?

(8/2) The content of this paragraph should be inserted into the introduction, to make the hypothesis statement more clear.

(8/3) Was there any constraint/indication about head and trunk position during BW training? This should also be reported in the methods section.

(9/1) Comments making reference to paper [21] are not very clear. Please rephrase.

(9/2) There is a reference to Appendix B and C… but there are no Appendixes in the manuscript.

(9/2) What do you mean by “shift” when you refer to “moving ranges”? Furthermore, the observations reported in the last sentences would deserve a discussion, not only a comparison with previous literature findings. This comment is valid for most of the “discussion section”, which appear more like a list of information and comparisons rather than a critical analysis that starts from the results and compares them to previous findings, but also gives original interpretations and speculations for future investigations.

(10/3) Please rephrase the sentence starting with “For example, in comparing FW, BW …”.

(10/3) How do you get to the conclusion about “improvement of motor control ability and reducing impact upon knee joints…”?

(11/1) “…BW are different from those of FW”… is not this expectable and thus taken for granted?

(Table 1) Are values normalised to gait cycle? The double support phase looks very long… any comment about it? Why have you reported measures separated by side (L/R)?

(Figure 1) What was the level of difficulty in w24?

Minor Essential Revisions

(page/paragraph)

Please revise the use of tenses and wording throughout the manuscript.

(1/4) Please delete “It is concluded that” and the “and” in the last line.

(3/1) Please consider the use of “elderlies” or “elderly people” instead of “older adults”.
“older than 65” … “every year”.

What do you mean by “detraining effects”? Are you referring to the concept of retention/resilience?

Do you mean differences between FW and BW or differences between FW training and BW training interventions?

Please delete “from a class”.

“detraining”… please look at previous comment.

Please delete “infrared”.

Please change into “…walk at a self-selected speed”.

What do you mean by “optic flow”? Please check “anticipant”.

Discretionary Revisions

It would be advisable not to start a sentence with “As shown in Figure…”.

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.