Reviewer’s report

Title: Does school-based physical activity decrease overweight and obesity in children aged 6-9 years? A two-year longitudinal study in the Czech Republic

Version: 2 Date: 3 May 2012

Reviewer: Nicola Diane Ridgers

Reviewer’s report:

This is an interesting study that to examine the effects of a multi-component school-based physical activity intervention on children's weight status. While the sample size is relatively small, and the accelerometer used to assess physical activity is not commonly used in the current literature, the results of the study are likely to be of interest to researchers within this area.

Major compulsory revisions

1) The aim of the study, according to the title, is examining the effects of a physical activity intervention on overweight and obesity. However, the specific aims at the end of the introduction largely relate to physical activity levels of the children, and refer to an intervention which has not yet been introduced. The aims need to be clarified and addressed in the manuscript, and I would recommend stating the intervention along the lines of ‘a school-based intervention’.

2) The introduction should introduce a rationale that justifies why targeting children during the early primary school years is a key time to intervene. In addition, specific aims are stated that relate to weekend and leisure time physical activity, yet no rationale was presented in relation to this. How could a school-based intervention affect out of hours activity? What previous research in this area has found this?

3) In the methods it is mentioned that this study builds on previous work undertaken. Were the children in this study also examined in the previous work? If so, in what ways is this paper different to the previous paper?

4) The introduction discussed how sex-specific interventions may be more effective in decreasing overweight and obesity. Was this a feature of the present intervention? If so, what was undertaken to ensure this occurred? In addition, the analyses may need to be conducted separately for boys and girls if this was the case. Could it also be clarified when the intervention finished?

5) The analyses are comprehensive, and given the large number of outcome variables a range of statistical analyses have been conducted. It wasn’t clear, however, how the effect of the intervention is being examined in the ANOVA. In addition, could you clarify why the data were not adjusted for clustering both at the individual and school level?
6) The results are interesting and comprehensively reported. However, no interaction effects appear to have been reported. Were no interaction effects found? In addition, it would be useful to know the proportions of children meeting the physical activity recommendations across the study. This could provide further evidence for the decreases observed.

7) The discussion identifies and discusses the key findings from the study. However, the practical implications of these findings for further research and practice should be identified and discussed.

Minor essential revisions

Abstract: If there is space, please briefly identify the statistically analyses used in the study.

Page 4, 2nd paragraph: The role of diet should also be acknowledged.

Page 4, 3rd paragraph: The sentence beginning ‘Indeed, longitudinal, studies…’ may need to be revised, given that this is an intervention study with multiple follow-up assessments.

Page 6: Some more information about the ‘Healthy Schools’ program would be useful. For example, how/why was it developed, what does it involve, was this part of the intervention delivered etc?

Page 6: What is meant by ‘corners conducive of movement…’?

Page 7: Please provide more information about the log book at what was done with the data collected using this.

Page 9: How was AEE calculated?

Page 11: Were the monitors reset after recordings were taken throughout the day?

Page 12, 4th paragraph: does Schooldays refer to time spent in school, or whole school day (wake-up to bedtime)?

Page 15, line 8: Are the AEE results presented the right way around?

Page 17, 2nd paragraph: this slight decrease is interesting, and more detail as to possible explanations for this finding would be useful information

Discretionary revisions

1) There are points in the manuscript where bullet points are used. It is recommended that these are removed.

2) Figures 1 and 2 could be presented as on Table, or include the actual numbers for the children’s physical activity over time.
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