Reviewer's report

Title: Seasonal variation in objectively measured physical activity, sedentary time, cardio-respiratory fitness and sleep duration among 8-11 year-old Danish children: a repeated-measures study

Version: 4 Date: 6 August 2013

Reviewer: Alex Rowlands

Reviewer's report:

The authors have done a good job of addressing my previous comments. I have a few remaining comments:

1. The addition of MAPE and bias in Table 2 and the discussion is informative. Please also refer to these in the results (lines 190-195).

2. Line 113. Bed time and wake time is mentioned here but this does not appear in the methods until the final paragraph. It needs to be clear where this data comes from.

3. I commented on the selection of 15 minutes of consecutive zeros to determine non-wear time (comment 18). I appreciate the authors’ response but it is still not clear why 15 minutes was selected. Was it empirically determined? Based on examination of the data? Based on an earlier study?

4. I am confused as to why data were removed for consecutive periods of wear time shorter than 60 minutes during reported sleep time (lines 113-115). I do not follow the rationale for removing periods of movement during reported bedtime? If significant movement occurred here presumably the reported bed times were erroneous and this would be important information.

5. I am still unclear about the analysis of the parents outside Denmark. The authors state this is a proxy for ethnicity (line 155) and in the reply to my previous comment (20) state that this was included as they hypothesised that lifestyle indicators would differ by ethnicity. However, I can’t find this hypothesis or rationale for it or discussion of it in the text.

6. CRF (lines 137-142): State the validity and reliability of this test.

7. Lines 190-192: Sed time, MVPA and CRF differences are given in %, sleep in minutes. Present all variables as % differences or as absolute minutes.

8. Lines 250-255: Are the recommendations from the National Sleep Foundation based on time sleeping or time in bed? As with comparison to MVPA guidelines, differences and similarities between the measures used to create the guidelines and the measures used to estimate prevalence will affect our interpretation of them.
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.

Declaration of competing interests:
I declare that I have no competing interests