Reviewer’s report

**Title:** Associations of pubertal stage and body mass index with cardiometabolic risk in Hong Kong Chinese children: a cross-sectional study

**Version:** 5  
**Date:** 22 April 2015

**Reviewer:** Ulla Sovio

**Reviewer’s report:**

Minor Essential Revisions

The paper has improved considerably as a result of revision. I would like to suggest a couple of further amendments:

The authors have now clarified in their response to the reviewers that they did not take into account the hierarchical nature of the data (classes nested in schools, schools nested in districts). This should be clearly stated and justified in the text. Hierarchical multiple regression analyses they have performed do not then refer to the hierarchy in the data but hierarchy in the modelling process. This may be confusing to the reader, especially to those who do not use SPSS and are not aware of this terminology (see http://www.theanalysisfactor.com/confusing-statistical-term-4-hierarchical-regression-vs-hierarchical-models/ and http://www.ucdenver.edu/academics/colleges/nursing/Documents/PDF/HierarchicalRegressionHowTo.pdf). If hierarchical regression here simply means that “some variables take precedence in hierarchy over others, based on the order in which you enter them into the model”, then the authors should stop using the term “hierarchical models”, p. 13 line 219, and replace this by “regressions” or “hierarchical regressions”.

The presentation of a result with a p-value of 0.051 is problematic. Although the null hypothesis cannot be rejected using the threshold p=0.05, the authors could still write up their results focusing on the effect size rather than the p-value. Preferably, confidence intervals should be used instead of p-values wherever possible. In all four reported models, the inclusion of interaction increased the variance explained by an estimated 0.5% to 0.8%, but possibly due to limited statistical power (<80%) this increase was not statistically significant for the cardiometabolic risk score beta in girls (0.5%, p=0.051).

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests