Reviewer’s report

Title: Maternal pre-pregnancy body mass index, smoking in pregnancy, and alcohol intake in pregnancy in relation to pubertal timing in the children

Version: 1 Date: 09 Apr 2019

Reviewer: Kristine Marceau

Reviewer's report:

The authors were largely responsive to reviewers' comments and suggestions and the manuscript is stronger. The thoughtfulness of the limitations section is particularly appreciated. There are, however, some remaining concerns.

1. The rational given for obesity, smoking and alcohol as prenatal risks of interest stated that their selection was based on their relatively frequent occurrence and potential for modification through prevention strategies. While true, the same argument could be could made for other prenatal risks for early puberty not included, thus, this argument is not particularly strong.

2. Relatedly, the authors disclosed that the puberty cohort was sampled from 12 different prenatal exposures of interest. While this may not be immediately concerning for sampling reasons it does beg the question of whether other prenatal risk exposures were tested as obesity smoking and alcohol risks were, especially in the absence of a strong argument for the inclusion of those that were. Clarification would be appreciated.

3. As requested the authors included a description of how the excluded children compared to the children who were included in the analyses. Were any or all of the differences reported statistically significant?

4. The assumption for HD:SDS is that height is mostly genetically determined. This is most likely true for the population under study, but GxE work generally suggests that genetic influences tend to be increased in "better" or "less restricted" environments. You can imagine in samples that experience calorie restriction because of, say, famine (or other environmental conditions such as poverty)... kids may not reach their genetic potential for height in adulthood. If this were the case, the HD:SDS measure would break down and would be a less reliable indicator of puberty (at least under some conditions). I think discussion of that might be important in the limitations section in the event that studies use this study to adopt a similar measure.

5. A minor point: there were some typos that appear to be introduced though the revision and near where Table 3 is referenced, some parentheses are incorrect. Careful editing of the entire manuscript is warranted.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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Yes

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