Reviewer's report

Title: Determinants of obesity among children and adolescents in Germany

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Reviewer: Marie Aline Charles

Reviewer's report:

This is a large scale epidemiologic study exploring the associations between of a large number of potential risk factors and childhood overweight and obesity status living in Germany. The large number of children included allows meaningful subgroup analyses.

MAJOR COMPULSORY REVISION

Design, Methods:
What population registry was used to select children at random?
Where were the children examined?
Physical activity assessed by frequency of doing sport: does it include PE classes at school?
Has the FFQ been validated for children and adolescent?
How the presence of sibling is accounted for in the statistical analysis?
In the methods the authors mention only the tests of interaction with gender and age (specify the different level of the age variable used for the test of interactions). However, other interaction were obviously tested such as between maternal weight gain during pregnancy and maternal overweight status. The presentation in the methods of how interactions were handled should be clearer.

It is surprising that maternal obesity is not associated with the child's overweight status when the mother gained more that 20 kg in pregnancy It has already been reported that overweight and obese mothers gain less weight during pregnancy than normal weight mothers. How many overweight and obese women declared a gain of more than 20 kg during pregnancy in that sample? This result, even if submitted to another journal, deserves some comments in the discussion of the present paper

Was the interaction between risk factors and SES tested? Was mean age and gender distribution similar between the three SES group?
It seems that although the distribution of risk factors varies across SES strata, as shown in Table 3, their association with overweight status is similar within each strata (except for gender?). Therefore, Table 4, which is quite crowdy, could be deleted and replaced by a comment in the text.

My main concern is that children over a wide range of age 3-17 years are all analysed together. Several data can not be compared in younger and older
children, such as sports activity: a negative response at 3 years and at 16 years
\[\text{can not be considered equivalent. Therefore, I suggest to stratify the analysis by}
\text{age-group corresponding to school ages: preschool, elementary school, …}\

Minor comments:

Aim and first sentence of discussion: A cross sectional study can not identify
determinants just associations with potential determinants. To be reworded.

Prevalence of overweight and obesity needs to be given an the whole sample,
including underweight children to be compared with other population sample

Level of interest: An article of importance in its field

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 interest