Author's response to reviews

Title: Risk factors for childhood obesity at age 5 : Analysis of the Millennium Cohort Study

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Author's response to reviews: see over
Dear Editor,

Thank you very much for the opportunity to address the comments of the reviewers. Please find our amendments outlined below.

With very good wishes

Yours sincerely

Dr Sinead Brophy

Reviewer: Manfred Muller

This study includes crude cross-sectional data on determinants of obesity in children at age 5. Although a huge database has been analysed I consider the data quality to be poor. The results do not add much to the present discussion in the area of childhood overweight. Poor methods have been used to address determinants of overweight, there is a lack of objective measures.

The following has been added to the conclusion in the discussion section:
This study uses the largest cohort of ethnic minority children and highlights that further work needs to be undertaken especially with African families who are at high risk of childhood obesity.

We have included information in the discussion section regarding the limitations of the data collected in this study.

In addition, a very selected number of items (e.g. 3 food items) are presented which cannot provide a could basis to characterise nutrition quality. The authors are recommended to cooperate with a nutritionist. In addition characteristics like “enjoys physical activity” can not serve as a suitable marker for physical activity. It is also unacceptable to characterise family behaviours by 2 items only

We feel the following section in the discussion reflects this point:

However, this study can only give a very crude assessment of the risk factors associated with obesity. For example, diet and physical activity are all self reported and open to variations in interpretation and meaning between different individuals and ethnic groups. No objective measures of diet (such as food diaries) or physical activity (such as accelerometers) were used in the study. The use of questionnaires to measure physical activity, especially parental reporting of physical activity is known to be problematic [15], overestimating the true levels of activity. Some of the factors associated with obesity given in this study, may be crude indicators of true risk factors. For example, missing breakfast in itself may not lead to obesity, but it may be
an indicator of a general lifestyle of snacking, eating larger portions later in the day and a lack of thought on general diet [16]. The lack of objective measures for many of the explanatory factors examined means that residual confounding may remain.

**Reviewer:** Han C Kemper

_The title and abstract are too short and too vague. The title should be changed: risk factors for childhood obesity at age 5._

We have changed the title. The conclusion of the abstract has been amended to be more focused. It now reads:

*Education of the primary carer is an important modifiable factor which can be targeted to address rising obesity levels in children. Interventions should be family centred supporting and showing people how they can implement lifestyle changes in their family.*

*Background must be changed: it is not a study that obesity at age 5 predicts in future but a study that investigates factors before age 5 to predict obesity at age 5.*

The background has been changed to include this point.

Page 4: It is therefore vital to know exactly how early the health consequences and risk factors for these serious diseases occur, and how early they can be detected if they are to be addressed successfully. *This study investigates factors before age 5 to predict obesity at age 5.*

Page 5: *Herein we examine risk factors occurring before age 5 to predict obesity at age 5 in children in the Millennium Cohort Study.*

*I was surprised by the minimal number of references (f.i. Barker e.a).*

The following has been added to the discussion:

*This study examines factors associated with obesity at age 5. However, there is the argument that thinness at age 5 may be more important for future health [17, 18]. The rate of weight gain in the very early weeks of birth may be important for predicting future risk of obesity [19-21]. However, this study did not collect objective measures of weight gain between birth and 9 months of age.*