Author's response to reviews

Title: Exclusive breastfeeding of Swedish children and possible influence on development of obesity: a prospective cohort study.

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Author's response to reviews: see over
Dear editor, M Norton

Thank you for the review of our manuscript entitled "Exclusive breastfeeding of Swedish children and possible influence on development of obesity: a prospective cohort study". We appreciate the constructive comments from the reviewer’s and are pleased to re-submit the manuscript with revisions as suggested.

The tables are now integrated in the manuscript as the reviewers wish but if that is a problem I can send them separate.

We look forward to hearing from you again.

Sincerely,

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Thank you very much for having revised our manuscript. We have tried to revise our manuscript according to the suggestions you have made and think the paper is now clearer and easier to understand.

Authors comments to reviewer:

Reviewer’s report (1) Wendy H Oddy

The aim of this study was to examine the relationship between exclusive breastfeeding and obesity following adjustment for confounders. A prospective cohort study was used to analyse data from birth to 5 years of age. This is an important question. However we would encourage the authors of this paper to have a co-author or colleague with English as a first language to edit their paper prior to submission to the journal for review. The data for the study are very good.

Authors´ response: The language has been checked by an English-speaking person.

Methods: Was a T-test conducted between normal and overweight/obese children.

Authors´ response: Thank you for this question. Yes, and it showed a significant difference, $P<0.001$. It is now mentioned in the result of the manuscript.

What exactly were the socioeconomic variables used?

Authors´ response: The socioeconomic variables which we used were civil status, parental smoking habits, parental education and if the parents were born abroad. In the logistic regression we used these factors and parental age when analysing factors related to short exclusive breastfeeding (less than 4 months) and factors related to risk of obesity at 5 years of age. They are shown in table 2 and 3.

What exactly were the category levels discussed in the data collection section. When were the co-variate data collected?

Authors´ response: Please find them in the Method section, data collection and analysis: Cut off for overweight and obesity at 5 years of age were defined according to Cole et al. In the analysis where maternal age is used, 35 years was used as cut-off since this age limit is commonly used in other medical contexts. Fathers were on average 2 years older than the mothers and we therefore used 37 years as the cut off age for fathers. Short exclusive breastfeeding was defined as <4 month’s duration of exclusive breastfeeding. In Sweden the recommendation, at the time of the study, was to breastfeed exclusively for at least four months.

The co-variate data were collected at birth, 1 and 5 years (table 1). In the different tables it is possible to see which data that have been used in the analysis.
Was smoking and maternal employment data collected?

**Authors´ response:** Smoking data were collected. Employment data were not used in this study.

Was a power calculation done prior to analysis?

**Authors´ response:** Yes, with the high number of participants, including a high number of children with overweight/obesity, and knowing the probable number of mothers with breastfeeding less than 4 months, we calculated that we should have enough power to detect a significant difference between the groups.

Figure 2 was not included in the manuscript file. This may have been Figure 3.

**Authors´ response:** Based on the suggestion of reviewer nr 2 we have decided not to include any figures in the manuscript, but just describe the data in the text and in Tables.

The results focus on the confounding factors with breastfeeding and little data is given on the relationship with obesity.

**Authors´ response:** We are aware of that other factors may influence the tendency to develop obesity and we have therefore, when studying the relationship between breastfeeding and obesity, taken several other confounding factors into consideration. However, in this paper we mean it is of great importance to be especially careful when analysing confounding factors in relation to length of breastfeeding.

Again, wording requires some checking in relation to English grammar.

**Authors´ response:** Ok

Some of the discussion discusses results that were not the focus of this paper for example, parental age and breastfeeding. Some of the discussion should be in the results section – no new data should be given in a discussion.

**Authors´ response:** You are right. We accept this comment and have changed the discussion accordingly.

Figure 1 does not include any axis labels so it is difficult to see what is going on in this figure.

Figures 3 & 4 may not be necessary – the results can be given in the text of the manuscript.
Authors’ response: We have decided not to include any figures in the manuscript, but describe the data in Tables and in the text.

Table 1 – baseline characteristics should be n= (not >=). Also state the (n=) after each exposure in table 1.

Authors´ response: When we write >= this means that this number of children, or more, are included for each parameter in a certain analysis. We hope that the reviewer agrees with us that trying to put n= for each single parameter in Table I (when we are dealing with > 14244, or >5999) may make the table more difficult to read with little statistical benefit.
Huus et al report associations between breastfeeding and obesity at age 5 years from a large observational cohort study in Sweden. They could not observe a protective effect of breastfeeding after adjusting for socioeconomic confounders in a subsample of 3654 children.

Comments:
Major compulsory revisions:
METHODS:
1. Please indicate the target number of births somewhere (must be 16058/0.74=21700).

Authors’ response: Done.

2. The participation after 5 years is with 7356/21700=34% quite small. The authors seem to have information on the non-responders or any estimates from official statistics resources to compare their sample with the general population since they conclude the dropped out mothers were younger etc. It would be very helpful for the reader to get an idea on the representativeness; I suggest that the authors add the difference in those important social characteristics between their sample and the general population.

Authors’ response: In table 1 we have compared the data of the total ABIS cohort with the cohort at 5 years follow-up. This shows that the present population is quite representative for the total cohort, which in turn is very similar to the general Swedish population according to Swedish official statistics when comparing childrens BMI, Parents education and parents born abroad.


RESULTS:
3. I would prefer the tables to be included in the MS instead of the figures. I recommend cutting out the figures and transferring the tables from the supplemental files to the MS.

Authors’ response: Thank you for this constructive idea. We have followed your recommendation

FIGURES:
4. I suggest omitting all figures and replacing them by tables as indicated above.
Authors’ response: Thank you. We have decided not to include any figures in the manuscript, but we describe the data in the text.

TABLES
5. I suggest defining one study population so that there is an equal sample size in each table.

Authors’ response: Thank you for this proposal which we have carefully discussed. However, as we get more participants and greater power in certain calculations with all participants included we think it is of scientific value to include as many as possible in each analysis.

Minor essential revisions:
ABSTRACT:
6. Please indicate the birth date range of the children or time information.

Authors’ response: Done

7. Please indicate the prevalence of childhood obesity.

Authors’ response: Done, in abstract and background.

8. I would appreciate more results in the abstract. Please indicate most important findings by stating the Ors with corresponding confidence intervals.

Authors’ response: Done

INTRODUCTION:
9. For the association of breastfeeding and later obesity I would suggest citing the reviews published within the last 3 years rather than citing single studies.

Authors’ response: We have added and refer to two more review articles in the introduction. In addition, there are many articles about breastfeeding and its relation to obesity but most of them just conclude that more research on the subject is needed.

10. REF#22: It is rather unusual to cite papers that are not published or accepted yet. I suggest including one of the several potential references from the literature on parental education/weight status and children’s BMI instead.

Authors’ response: The article which we refer to is now accepted and published in Acta Paediatrica.
METHODS:

11. Do the authors know reasons for non-participation if so, I suggest they indicate them either in the methods section or in the discussion.

Authors´ response: The most common reason not to participate, is “Lack of time”, “too many questions in the questionnaire” or that children do not want go give biological samples (which is part of ABIS). This is now mentioned in Methods.

RESULTS:

12. Please indicate the prevalence of childhood obesity.

Authors´ response: Done

13. The authors write that the median of breastfeeding was 4 months from the 1 year examination and 8 months from the sweep at 2.5y. This indicates a very strong shift to breastfeeding families in the ongoing study. This has to be commented on in the discussion section.

Authors´ response: Thank you for this comment. However, in the one years questionnaire 4 month’s was “exclusive breastfeeding” and in the 2.5 year questionnaire 8 month’s was “any breastfeeding”, which we have stated in the result.

14. I suggest to shorten and rewrite the univariate results of related factors to breastfeeding and to present the results in a table.

Authors´ response: We have followed the suggestions to use Tables instead of figures, but believe that it will be a useful compromise to keep some results in the text, in a way that should be easy to understand by the reader.

15. The final multivariate model is based on 3654 children. This represents only 3654/21700=17% of the initial sample of 21700 births. This has to be included in the discussion section.

Authors´ response: When many variables are included the number of participants decreases, as one questionnarie may lack answer to one variable, another questionnarie may lack answer to another variable. This has been commented upon in the discussion.

DISCUSSION:

16. In a recent study we observed a beneficial effect of breastfeeding>6 months only (Am J Clin Nutr. 2007 Jun;85(6):1578-85.) It would be interesting if the authors also can observe such an effect at this specific cutpoint.
Authors’ response: We have read that paper with great interest, but when analysing “any breastfeeding” >6 months and children’s weight at 5 years we didn’t get any significant relationship. Differences in methodology may of course explain these differences in results, but there may also be differences in populations.

17. I would appreciate a small biological/confounding paragraph in the discussion section.

Authors’ response: Thank you for this suggestion. We have added a short comment in the Discussion.

TABLES
18. Table 1 seems to have a typo in the head row â## baseline is indicated twice.

Authors’ response: Thank you for this comment. Baseline (n>14 244) is characteristics for children and the parents at baseline (child birth) for all participant included in the study. The next column (n= 5 999) shows the same baseline data (at birth) for those who also participated at the 5 years follow-up. This we have done to make it possible for the readers to compare baseline data the whole group with the participants who are still in the study when the children are 5 years. We have now added some more information in the table legend to explain this.

19. The sample sizes of table 1 are quite unconventional expressed in the head row and do not match with the sample sizes stated in the MS.

Authors’ response: While 7 356 families completed the 5 years questionnaire Table 1 shows the minimal number answering a certain variable. We have added a comment in the Figure legend to make this more clear.

20. Table 3: It is unclear to what unit change the ORs refer to (e.g. breastfeeding â## is this per additional month)?

Authors’ response: Thank you for this comment. We have tried to make this more clear in the table.

Discretionary revisions:
DISCUSSION:
21. The authors could comment on the sample size, number of non-breastfed children, number of obese children and the detectable difference.

Authors’ response: We are grateful for this suggestion to increase the discussion and have therefore taken the opportunity to add some comments.