Author’s response to reviews

Title: Insulin resistance (HOMA-IR) and body fat (%) are associated to low intake of fruit and vegetables in Swedish, young adults: The cross-sectional Lifestyle, Biomarkers and Atherosclerosis study

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Author’s response to reviews:

To all three reviewers: Many thanks for all the wise and helpful comments!

Suggestions for improvements have been performed, see below.

Reviewer 1

1. Citation 36 of the bibliography is incomplete.

Reference nr 36 have been removed.

Reviewer 2

1. The scientific background needs to be improved and the objectives introduced.

Changes have been made in the introduction.

2. The aim is not clearly formulated.

Changes have been made. The aim is to report dietary habits of young Swedish adults and to evaluate the effect on metabolic risk markers.

3. The discussion is too long and should focus on results in the present work with a clear message.

The discussion have been shortened and the conclusion changed to clarify the message.
4. How was recruitment done? How where the volunteers selected? How well does this population reflect Swedish young adults?

Recruitment was done by advertisement in social media, local newspaper and at the University web platform. The selection was based on age, nonsmoking and health. Since Örebro is located in the middle of Sweden we think that the population reflects young adults studying at University’s in Sweden but regional differences cannot be ruled out. Now discussed under strengths and limitations.

5. The section on questionnaire should be concise.

The questionnaire section have been shortened.

6. Why is VO2 max measurement described?

The section on oxygen uptake have been removed.

7. Information on missing data should be added.

Information on missing data are now added.

8. Why is saturated lipids presented as a separate section? The word saturated fat instead of saturated lipids is preferred.

The section have been changed and the headline removed. Saturated lipids have been changed to saturated fat and dietary patterns have been changed to dietary habits throughout the manuscript.

9. Is data on dietary patterns new and important?

Data on dietary habits are now added to aims and presented under results and in table 2.

10. I would also add the association between fish and HOMA - IR.

Information on association between fish and HOMA-IR have been added in abstract, discussion and conclusion.

11. This information should be in result section.

Have been moved to results.
12. It is not clear how this section is linked…
Text added to explain the connection to the present study.

13. What is meant by “unhealthy food choices”…?
Text about “unhealthy food choices” have been changed.

14. Why are saturated lipids highlighted here?
The headline have been removed.

15. The text on saturated lipids in Sweden is out of scope.
Text about saturated lipids have been shortened.

16. No data on inflammation in the result section.
Text about inflammation have been removed.

17. Mediterranean diet is a bit of topic.
Text about Mediterranean diet have been removed.

18. Include a section on strength and limitations.
Limitations are now discussed under strengths and limitations.

Reviewer 3

1. There is a description of VO2 max but this was not analyzed.
The description on oxygen uptake have been removed.

2. Did the authors find a correlation between HOMA-IR and VO2 or body fat?
HOMA-IR and VO2 are correlated P<0.001 but not mentioned since VO2 have been removed from the manuscript.

HOMA-IR and body fat are correlated P<0.001 and now added in the result section.

3. Limitations should be discussed in some more detail.

Limitations are now discussed under strengths and limitations.

4. How did fitness of the subjects affect the result?

Fitness measured as VO2 had a positive impact on the result and have previously been published.

5. There is some repetition, for example describing the food categories.

The food categories have been removed.

6. Should this be…

11.4% have been changed to 88.6%.