Author's response to reviews

Title: The effect of botanical structure, fiber content and acetic acid on postprandial blood glucose, gastric emptying and satiety in healthy subjects, a study of wheat products with and without vinegar

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Version: 2 Date: 13 February 2008

Author's response to reviews:

Dear Dr Weickert and Dr Johnston 2008.02.13 Malmö

I would like to thank you for your important and valuable comments regarding the content of the present manuscript. We have clearly been able to reply to all your questions and remarks, as follows below. I realize that the revised present form of the manuscript will improve the presentation of our work. Do not hesitate to contact me further if you have any additional questions. I am hoping for further cooperation in the future.

Reviewer 1, please notice that the changes have been done as required.

Major compulsory revisions:

1. Lines 265-267, It is added to the discussion that the whole-kernel wheat bread regardless of adding vinegar was more satiating that the other test meals.

2. Figure 1 and 2 are changed. Means and +/- SEM are presented.

3. We have consulted a statistician from the University of Lund that think it would be more appropriate to use the changes in the blood glucose and satiety scores from a fasting value rather than the definitely values in each measured data due to different fasting values in each subjects at the start of the test. We think that it would be more appropriate to use the blood glucose values that we have analyzed and used in all of our previous studies rather than calculate the data into plasma glucose values. In our previous studies, that describes the ultrasonographic method of measuring the gastric emptying that we use, showed when healthy subjects were examined at frequent time intervals before and after meal ingestion a postprandial maximal area at 15 min, continuously decreasing with time and reaching a plateau 75 to 90 min after meal ingestion, closed to
value of the fasting antral area. We present absolute values of the antral cross sectional areas at 15 and 90 min, but also the GER that is expressed as the percentage change of the antral cross-sectional area from 15 to 90 min.

4. Figure 2 has been changed. Ingestion of the whole-kernel wheat bread with vinegar resulted in significantly higher satiety scores at 15, 30, 45, 60 and 90 min than the white wheat bread with vinegar and the reference meal, white wheat bread without vinegar (p<0.05) (Figure 2).

Discretionary revision:

1. The introduction of the manuscript has been shortened.

2. The methods section about estimating GER has been shortened.

3. The manuscript has been reviewed and a language expert has already made changes.

Reviewer 2, please notice that the changes have been done as required.

Major compulsory revisions:

1. The title has been changed as required.

2. Abstract, normal fasting blood glucose has been clarified. Line 34, has been changed as required.

3. Methods, page 7, lines 150-153. The mean fasting blood glucose levels are now included. We do not think that it is necessary to control for body mass index since each subject had normal fasting blood glucose <6.1 mmol/l or plasma glucose <7.0 mmol/l as an inclusion criterion. According to WHO a oral glucose tolerance test is performed after a meal composed of 75 g carbohydrates and normal 2 h postprandial plasma glucose levels is considered as <11.1 mmol/l or blood glucose . In our study despite the variable BMI, the mean fasting blood glucose before all of the meals was 4.5 ± 0.1 mmol/l (range 3.5- 5.7 mmol/l) and 2 h postprandial blood glucose after all of the meals (50g carbohydrates ) was 5.0 ± 0.1 mmol/l (range 3.5- 7.1 mmol/l). These values are normal. Therefore we do not think that it is necessary to consider controlling BMI in the statistical analyses since the subjects are healthy. And the inclusion of the BMI as a covariate in the analysis of postprandial blood glucose response did not improve the model. This has been added to the methods, lines 192-195, and results, lines 208-209.

4. Methods, exercise or food choices the night of the testing have not been controlled. This may affected the postprandial glycemia and are now stated in the discussion as study limitations, lines 266-268. The small sample size as a study limitation has been stated, line 265. Power calculation has been added to the methods, line 164.
5. Methods, line 175 has been changed as required.

6. Methods, we have consulted a statistician from the University of Lund and the statistical methods are changed, lines 181-196, and the results are also changed, lines 198-248.

7. Results,: Median values and quartiles (q1 to q3) are presented for the antral cross-sectional areas and GER. However, the AUCs are presented as means ± SEMs. The AUC means for glucose and satiety are already written in the text. Displaying the AUC means as bar charts we do not think that this would add any new information to the study result. However, did we add another figure for the antral distention data. We would like to keep the GER data figure since the GER was of the main questions in this study even thou there were no significant differences.

8. Discussion: We have done a correlation between the satiety and distention. This has been stated in the methods, results and discussion.

9. Discussion, Lines 265-267, It is added to the discussion that the whole-kernel wheat bread regardless of adding vinegar was more satiating that the other test meals.

10. Discussion, the stated trend has been deleted since the p-values were not significant.

Sincerely,
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