Author's response to reviews

Title: The botanical integrity of wheat products influences the gastric distention and satiety in healthy subjects

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Author's response to reviews: see over
I would like to thank you for your important and valuable comments regarding the content of the present manuscript.

However, we do not agree with you in that matter that it is necessary to provide another control group. It is accepted by the American Diabetes Association (ADA) to use only white bread to evaluate the postprandial glycemia in an individual food item. According to a statement by ADA the glycemic index is the increase in blood glucose (over the fasting level) that is observed in two hours time following ingestion of a set amount of carbohydrate in an individual food (1). This is then compared to a reference food (glucose or white bread) containing an equivalent amount of carbohydrates (1, 2). In the international table of glycemic index and glycemic load values of 750 different foods are compared to the reference white bread and glucose (3). Also white bread (2, 4-15) or glucose (16-20) are accepted as reference food in many publicized studies.

The aim of this study was to evaluate the possible influence of maintained botanical integrity of cereals and the presence of acetic acid (vinegar) on gastric emptying rate (GER), postprandial blood glucose in relation to satiety. White wheat bread, whole-kernel wheat bread or wholemeal wheat bread served with white wine vinegar was compared with a reference meal previously accepted by others consisting of white wheat bread.

We could not verify any effect on the postprandial blood glucose or GER in this study. However, the present study shows higher satiety after a whole-kernel wheat bread meal
ingested with vinegar. This may be explained by increased antral distension after ingestion of intact cereal kernels but, in this study, not by a lower gastric emptying rate or higher postprandial blood glucose response. Because we could not verify any effect on satiety after ingestion of white wheat bread with vinegar we assume that the increased satiety after ingestion of whole-kernel wheat bread meal ingested with vinegar is caused by the intact cereals kernels but not the vinegar. Besides, in a previous study using the same bread recipes but without vinegar, it was observed a significantly higher satiety after whole-kernel wheat bread than after white wheat bread (15).

We have clarified the limitations of this study but also that we do not think that it is necessary to provide an adequate control group, as follows below:

- The title is changed to: The botanical integrity of wheat products influences the gastric distention and satiety in healthy subjects
- Abstract, Background, page 2, line 8, postprandial blood glucose has been added to the aim.
- Abstract, Conclusions, page 3, lines 1-2, with vinegar has been added.
- Background, page 5, lines 19-22. This has been added: In a previous study using the same wheat bread recipes as in this study and the meals were ingested without vinegar, a significantly lower blood glucose response and higher satiety after whole-kernel wheat bread than after white wheat bread was observed (16). However, the GER was not evaluated.
- Background, page 6, line 7, postprandial blood glucose has been added.
- Background, page 6, line 8, decreased postprandial blood glucose has been added.
- Discussion, page 12, line 22 and page 13, lines 1-5. This has been added: The effects of whole-kernal bread without vinegar were not investigated. However, the white
wheat reference bread served with vinegar and compared to white wheat bread without vinegar did not affect the satiety. In a previous study using the same bread recipes but without vinegar, a significantly increased satiety after whole-kernel wheat bread than after white wheat bread was observed (16). Therefore, it can be assumed that the whole-kernel bread was more satiating than the other meals regardless of adding vinegar.

- Conclusions, page 15, line 2. This has been added: served with vinegar.
- Acknowledgement, Page 15, line 19. This has been added: and for providing us with the bread products and vinegar.

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.

Sincerely,
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References


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