Author's response to reviews

Title: Perceptions of flatulence from bean consumption among adults in 3 feeding studies

Authors:

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Version: 3 Date: 3 October 2011

Author's response to reviews: see over
October 2, 2011

Nehme Gabriel, MD  
Editor-in-Chief, *Nutrition Journal*  
c/o BioMed Central  
236 Gray’s Inn Road  
London WC1X 8HB  
United Kingdom

Dear Dr. Gabriel,

We are submitting our revised manuscript “Perceptions of flatulence from bean consumption among adults in 3 feeding studies” for further consideration as an original research article in the *Nutrition Journal*. A description of the changes and/or responses to the reviewers are listed below point-by-point. We hope that we have understood and fully addressed any concerns or questions in an effort to strengthen our manuscript.

Thank you!

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Reviewer’s report

Title: Perceptions of flatulence from bean consumption among adults in 3 feeding studies

Version: 2 Date: 5 July 2011

Reviewer: Paula Brauer

Reviewer’s report:

Major compulsory revisions
1. Introduction - This study is generally well written and the results will be of interest to nutritionists and dietitians who are involved in advising and counselling to increase legume consumption. I believe the explanation of the rationale for the study and the approach could be improved, by deleting Lines 55-68. Assessment of perception is most relevant to consumer acceptability, rather than objective measures, although such reports must be interpreted cautiously, as stated. The content of this paragraph can be dealt with in the Discussion and detracts from the Rationale. It may be possible to encourage increased consumption if symptoms can be expected to decline over time, with certain types of legumes or if legumes can be promoted to certain sub-groups in the population. The rationale should conclude with the specific objectives of the study.

Response: Removed paragraph and addressed the psychological anticipation of flatulence in the discussion.

2. Results You created a summary variable (see lines 157-167) and then did not have any detailed results in either tabular or graph form, only in the text (from my reading of lines 209-220). The text results suggest that symptoms were very mild overall. I could not find the summary variable results for the parallel trial of pinto beans. These results should be presented in graphic form for all studies. This is critical data relevant to consumers and summarizes participant experience overall.

Response: An excellent suggestion. Graphic illustration of the percentages of participants reporting symptoms in summary form is shown in Figures 1 and 2.

Minor essential revisions
1. Introduction
3. Line 20 increases insulin sensitivity

Response: Sentence has been reworded to reflect an increase in insulin sensitivity with decrease in serum insulin following consumption of low GI foods.

4. Line 70 daily – ADD 8-12 weeks.

The words “over 8 or 12 weeks” were added to this sentence and in other places.
where relevant.

5. Line 72 – mention clinical results of the primary studies in 1-2 sentences – were they positive and therefore support promotion of legumes?

**Response:** Added summary statement about the positive results of the primary studies in lowering cholesterol at the ½ cup dose.

Methods –
6. Line 80 The GI questionnaire was newly developed and there are few in the literature – indicate access from authors or provide the questions in a figure, appendix or online.

**Response:** A sentence was added that the instrument is available from the corresponding author.

Results -
7. Line 54 – stated that physiological mechanisms for bloating and flatulence are different. Were experiences of bloating and flatulence associated in individuals? That is, did a subset of people with flatulence have bloating in addition, or were they different groups, in line with expectations from the physiological mechanisms?

**Response:** Considering all reports of symptoms, 4.7% of the people reporting increased flatulence also reported increased bloating. So – yes different groups reported these two types of symptoms.

8. There are too many tables, with limited interesting data once you provide the summary data in graph form. In my opinion, since flatulence and bloating were most prominent, you could still present the detailed results for these factors as graphs, and only mention stool frequency in the text. In my opinion, alteration in the presentation of results would strengthen conclusions regarding the mildness and time limited nature of most symptoms.

**Response:** The two stool frequency tables were deleted and the other tables renumbered accordingly.

Discussion -
9. Line 269 – A small percentage of people experienced increased and persistent flatulence – no predictors were found consistently – e.g. men vs. women, and this should be stated. Some previous data have suggested more women experience persistent issues.

**Response:** A line was added in the discussion stating these observations in our study.

**Level of interest:** An article of importance in its field
Reviewer’s report

Title: Perceptions of flatulence from bean consumption among adults in 3 feeding studies
Version: 2 Date: 3 August 2011
Reviewer: Fang-Chen Wu

Reviewer’s report:

Major Compulsory Revisions
1 Why did authors use different control food in Study 1&2 (canned carrot) and Study 3 (chicken soups)?

Response: The parallel arm study (#3) was of different design than studies 1 & 2 and conducted by a separate, but associated, group of researchers. They chose to use the soups to match with the prepared bean entrees.

2 Sample sizes were not enough (n<30).
For example: Table 2-BEP study
In Pinto beans group, there were 50% increased flatulence in 1st week, but only 8 persons reported, actually. The data had not be representative.

Response: Study 1 the Pinto/BEP study was adequately powered for the primary objective of testing changes in cholesterol levels in a cross-over study. Cross-over studies utilize the same participant as a control. In many ways it is a more effective method for determining change in physiological characteristics such as flatulence.

3 In study 1 3x3 cross-over design, participants in three treatments (Pinto#Black eyed and control) should be the same (n=17). Every treatment phase was followed by a washout period in between. In table 2 and 3, control group n=39, It was not proper. There was same mistake in study 2.

Response: Some of the participants in study 1 also went on to participate in study 2. We did not have them repeat the control phase where they ate the canned carrots for 8 weeks. This is why the numbers are different in the tables for the control group reported number of days. There is a footnote to these tables that explained this.

4 P.6 Line 126# What was “normal diet”?
Did participants get the same “normal diet”, breakfast, lunch or dinner? Those
contained potential variables.

Response: An additional sentence was added to the text to clarify that we did not feed them the same diet every day for 8 or 12 weeks but instead that the participants ate their own “normal” diet.” Please note that participants were instructed to not consume other beans or legumes including soy during the course of the study.

Minor Essential Revisions
5 P.7 Line 158#”The weekly report for flatulence, stool change were examined and classified as 0#1#2 or 3 symptoms.”
In results, we did not see symptom changes, it was only stated sample percentage who had flatulence or stool change. Show GI questionnaire results, it was better.

Response: A graphic illustration of the percentages of participants reporting symptoms in summary form is shown in Figures 1 and 2.

6 Table 9. In table 1-8, n represented sample numbers, but n meant “of days report” in table 9. It might change another characters.

Response: We removed “days of report” from table 9 to reduce confusion.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests: I declare that I have no competing interests.

Reviewer's report
Title: Perceptions of flatulence from bean consumption among adults in 3 feeding studies

Version: 2 Date: 31 July 2011
Reviewer: Chih-Yen Chen

Reviewer's report:
Major Compulsory Revisions
1. <Introduction> line 20
Please clarify “lowering” or “increasing” insulin sensitivity?

Response: Sentence has been reworded to reflect an increase in insulin sensitivity
with decrease in serum insulin following consumption of low GI foods.

2. <Methods> line 105 and 107
Since you enrolled volunteers with a fasting insulin level more than 15 microU/ml, which might represent mild to moderate insulin resistance, did you show any data in your results (in your tables or figures) regarding insulin and ghrelin levels of your volunteers? Emerging evidence reveal the close relationships between insulin resistance, glucose homeostasis, and ghrelin (Chen et al, Pharmacol Rev 2009). This is an important question problem!

Response: The insulin and glucose results were presented in the primary studies. We did not measure ghrelin in the original studies. The current paper is about the flatulence perceptions so we did not repeat findings from the biomarker analysis.

3. <Results> line 175-179
Before or after the statement of Table 1, I suggest the authors to add figures for the 3 protocols of your 3 experimental designs. Otherwise, it is so difficult to catch out how you enrolled and treated your volunteers by our readers.

Response: If you would like, we can add a table like below for the cross-over studies. There is not much to show for the parallel arm trial because people are either assigned to one group or the other. In the randomized cross-over, each person serves as his/her own control. The treatments are given in random order. Some people received the control food first, others the pinto beans, etc. Treatment order could have been: ABC, BCA, CAB, BAC, ACB, CBA

Figure X: Diagram of randomization to treatment interventions for cross-over studies

Study 1 – Pinto/BEP
A= ½ cup pinto beans; B = ½ cup black-eyed peas; C = ½ cup carrots (control);

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
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<td>B Selected</td>
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<td>C</td>
<td>C Selected</td>
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</table>

Study 2 – Baked Beans (BB)
A= ½ cup vegetarian baked beans; B = ½ cup carrots (control);

<table>
<thead>
<tr>
<th>Phase 1</th>
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<tr>
<td>Food &amp; Dose</td>
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<td>A Selected</td>
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<td>B Selected</td>
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</tbody>
</table>
Minor Essential Revisions

4. <Discussion> line 284
Although this is a mail-in questionnaire, level higher than telephone review, however, its validity is still lower than visual analogue scale (VAS) study. Please state limitation in your discussion.

**Response:** Participants completed the questionnaire in person and/or had a printed copy of the questionnaire available. A trained nutritionist or nurse reviewed the form with the participant each week. For the cross-over studies, the participants completed the questionnaire via telephone every other week. The rest of the questionnaires were handed in or completed on site at the visits. Although the instrument is not specifically a visual analogue scale because it lacked a horizontal line, the numbers were arranged sequentially from low to high as shown below in the excerpt from the instrument. Participants were instructed to circle the number that best describes their experience.

From our questionnaire: “How would you rate the amount of change in stool consistency on a scale from 1-5 as compared to the previous week with 1 being little change and 5 being a lot of change?”

1  2  3  4  5

5. Please perform careful check for the format of references for NUTRITION JOURNAL.

**Response:** References have been fixed. Thank you for catching our formatting errors!

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:** I declare that I have no competing interests.

**Additional formatting request:**

- Please include a title page as page 1. The title page should include the title, authors, author affiliations and corresponding author details.

**Response:** A title page has been added as page 1.

- Please include the Abstract on page 2. The Abstract should be composed of the following four sections and should not be more than 350 words: Background, the
Response: The abstract has been added on page 2. We do not have trial registration numbers for these studies.

- Please include a list of abbreviations used in the manuscript and their meanings.

Response: A list of abbreviations has been added.

We would be grateful if you could address the comments in a revised manuscript and provide a cover letter giving a point-by-point response to the concerns.

Response: We have provided the point-by-point response here.

Please also highlight (with 'tracked changes'/coloured/underlines/highlighted text) all changes made when revising the manuscript to make it easier for the Editors to give you a prompt decision on your manuscript.

Please also ensure that your revised manuscript conforms to the journal style (http://www.nutritionj.com/info/instructions/). It is important that your files are correctly formatted.

We look forward to receiving your revised manuscript by 7 October 2011. If you imagine that it will take longer to prepare please give us some estimate of when we can expect it.

You should upload your cover letter and revised manuscript through http://www.nutritionj.com/manuscript/login/man.asp?txt_nav=man&txt_man_id=3497864045568236. You will find more detailed instructions at the base of this email.

Please don’t hesitate to contact me if you have any problems or questions regarding your manuscript.

With best wishes,

The Nutrition Journal Editorial Team

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