Reviewer's report

Title: The use of different reference foods in determining the glycemic index of starchy and non-starchy test foods

Version: 3  Date: 11 April 2014

Reviewer: Sangeetha Shyam

Reviewer’s report:

In this manuscript, the authors create an argument for using rice as a reference food for GI testing. In this experiment they show that such an effort will decrease the variability in GI values caused by differences in the ethnicity and age of the subjects. An improvement in consistency of the GI categorization across subjects differing by ethnicity or age they opine will make the GI values so derived more “generalizable”. I commend the authors for conducting this interesting experiment. The findings from this paper may have important implications for GI labeling. The manuscript is well written and the presentation is clear and succinct. Findings from this research will particularly be of interest to GI researchers working with multi-ethnic groups.

1. Is the question posed by the authors new and well defined? Yes
2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work? Yes
3. Are the data sound and well controlled? Yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes, but a few minor edits are necessary
6. Do the title and abstract accurately convey what has been found? Yes. Abstract may need minor edits
7. Is the writing acceptable? Yes

A. Major Compulsory Revisions

1. Though mention is made of GI testing of LoGicane in the methodology (in abstract and methodology section of the full-text) and discussion sections (line 158) of the manuscript, the results is not presented. This has to be included in the abstract and in the results sections.

2. Discussion:
   i. The authors opine that possible genetic variation in the amylase family may explain (in part) the ethnic variations in GI values determined using glucose as a reference. How do the authors explain the difference seen among the older and younger participants?
ii. BMI is significantly higher among the European and older participants in this study. The manuscript also mentions that FPG was significantly higher among the older group of subjects. Therefore is it likely that a difference in insulin resistance / sensitivity could influence the GI variations documented in this study? There is evidence for interaction between response to dietary GI and insulin resistance. Would the authors like to comment on this?

iii. Line 150- The manuscript discusses the inconsistencies in GI categorization among the subjects tested. This suggests scope for improvement in the testing methodology, categorization and labeling. In lines 204 and 215, the authors point out that the ranking of the GI values of foods remains the same across the groups, irrespective of whether the GI determination was carried out with glucose or rice as the reference food. Hence can it be construed that while the findings from this study show that the choice of reference affects GI categorization of foods, it does not affect the dietary advice? For instance, Basmati rice causes lower spikes in blood glucose in both Europeans and in Chinese, so therefore would be a better option to control glycaemia in both groups?

iv. Line 207-“For starchy foods……” This needs to be interpreted with caution since there are limitations to extrapolating the results from this study. The authors agree that the small number of foods tested poses limitations to generalization. Similarly only two ethnic populations resident in the study location have been studied. That would be a limitation as well.

v. Interestingly the GI value of sucrose is higher among Europeans when using rice as a reference (unlike any other food tested), though the differences between groups are not statistically significant. Would the authors want to comment on this?

B. Minor Essential Revisions None

C. Discretionary Revisions

i. Will the use of a specific variety of rice as a reference make international GI value comparisons problematic? The authors also imply the futility of using conversion factors for this purpose in their discussion. Any suggestions on this front?

ii. Given that postprandial glycaemic excursions are more pronounced among certain ethnic groups (Chinese in this case), as compared to the Europeans, would the GI concept itself be more pertinent to the Chinese population?

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests