Reviewer's report

Title: Acute effect of meal glycemic index and glycemic load on blood glucose and insulin responses in humans

Version: 1 Date: 15 May 2006

Reviewer: Richard D Mattes

Reviewer's report:

Major Compulsory Revisions

Page 5, line 2 “why was the study limited to obese females? Given this, all conclusions must be qualified to apply only to this group.

Table 1 “Please add fiber values to Table 1.

Page 7 “The rationale for computing only the positive AUC for glucose and insulin is not universally accepted. Please present the data using the total AUC for glucose and insulin as well. A very sound case can be made that this is the more relevant metabolic response.

Page 9 “The values and significance for the Friedman test for Figure 1 should be presented. Given the large number of post-hoc tests conducted, a protected p should be used.

Figure 1 “Was there any treatment effect between hours 2 and 5. It appears not. So, the 5 hour difference really only reflects the carry-over from the initial 2 hour response. Further, ignoring any negative values artificially raises the 5 hr values.

Page 11, lines 1 and 2 - This statement is not correct. There was no significant effect of GI in the small meals.

Page 11, lines 9 and 10 “No data supporting this claim are presented. Indeed, the correlation, while significant, was only moderate. GL accounted for only about 34-36% of the variance in glucose and insulin responses.

The authors repeatedly state there was a 2-fold response difference when the 5 hour data revealed only a 1.6 fold difference. This is 20% less. Lack of precision in the data interpretation and discussion detracts from the credibility of the report.

Page 12 “The authors cite one study indicating the nutrient mix of meals has limited effect on the glycemic response. However, the literature contains many reports to the contrary. A more representative account of the literature would strengthen the discussion. It should also be noted that the conditions of this trial were highly constrained. Individuals were not free-feeding (e.g., did not determine their own meal size or eating rate). Both of these factors could negate the findings and should be considered.

Minor Essential Revisions

Page 1, Line 14 “Please re-word. Meal size was presumably provided based on energy need determined by metabolic rate. This holds for page 6 as well.

The abstract should contain statistics, not general summary statements so readers can determine the significance of the findings. To say the effect was 2-fold implies a larger and more robust finding than was obtained. In fact, the difference was not statistically significant for the small meal size comparison and the difference was 1.6 fold at 5 hours.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

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