

Reviewer's report

Title: Effect of commercial weight loss diets on macronutrient composition and micronutrient adequacy in free living adults participating in a randomised controlled weight loss trial

Version: 1 **Date:** 21 December 2007

Reviewer: Carol Johnston

Reviewer's report:

This research examined whether adherence to popular weight loss diets adversely impacted micronutrient intakes in a free living population. [The authors have published separately on the efficacy of these different diets and concluded that they were equally effective (however, weight loss was significantly greater on the Atkins diet after the initial 4 weeks).] The paper is well written and provides data that will interest the scientific community as well as nutrition health professionals.

Major Revisions:

1. Abstract, lines 15-16: Please delete the sentence "Weight loss on all the diets is significantly greater than on the control diet" since data to support this statement are not provided in the present report.
2. Since dieters were not excluded from the sample (exclusion criteria p. 5), the methods used to validate energy intake (p. 6) may not be valid. Can the authors comment on this?
3. Statistical analysis (page 7): Here it states that the data are reported as mean \pm SE but on page 9 the data are reported with the SD. Please be consistent throughout the text and tables. Student t-tests are not appropriate given the study design rather a repeated measures ANOVA with time and interaction as factors is appropriate.
4. Is a "usable" diet record interchangeable with a "plausible" record (page 8)? Is the use of "all available data" including only "usable" data (page 9)? It is difficult to follow the sample numbers as presented. Please re-write for clarity.
5. Figure 1. The average baseline data represent 223 individuals yet the 8 wk data represents 143 individuals (all groups combined). This seems an unfair comparison. I recommend comparing each diet group with their specific baseline data (and only use baseline data for completers). Add the control group data to the figure and include the statistical interpretation of the data in the legend.
6. I did not receive Table 3 with my materials. How do the RNIs compare to the US DRIs?
7. Discussion: (page 14) The comment that low CHO diets do not lead to increased meat and saturated fat intakes may not necessarily be true "the

authors should compare the findings of their trial with other trials in the literature that specifically addressed meat and saturated fat consumption on the Atkins diet.

8. (Page 15) The authors should acknowledge that 7-d diet records may not accurately reflect micronutrient intakes (e.g., longer periods of diet reporting are necessary to accurately reflect micronutrient intakes).

9. (Page 16) Did the authors specifically examine potassium deficiency signs in their subjects as stated? Please clarify how it was determined that the population did not show signs of a potassium deficiency. The statement that the study can "reassure" health care providers that these four diets are "safe" seems exaggerated since the standard markers of toxicology were not examined.

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

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.