Reviewer's report

Title: Effects of Pistachios on Body Weight and Risk Factors of Metabolic Syndrome

Version: 3 Date: 10 January 2012

Reviewer: Frank f Greenway

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Major Compulsory Revisions

This article is designed as a parallel arm trial. The appropriate analysis is to compare the arms. An analysis that compares each arm to baseline is appropriate for an uncontrolled trial. It seems apparent that the authors know this when one reads the statistical section of the manuscript. Although it may be okay to give the comparison to baseline as a secondary analysis, it should be made clear that it is indeed a secondary analysis and that the primary analysis is stated first. In addition, statistical significance is by convention <0.05 and a trend is <0.1. Although I commented on this in my first review, it must not have been clear, and I will try to be more specific.

1. Abstract: The abstract takes on greater importance, since many readers will not read further. Neither the 2 hour blood sugar nor the triglycerides were significantly different by the primary analysis, but the authors give the impression that they were by reporting the secondary analysis compared to baseline. In addition, the RSG group is not statistically significant, even with the secondary analysis, but the abstract reads as if it is.

2. In the results section under blood pressure: The blood pressure did not show trends as stated in the results. The p values were between 0.1 and 0.2. In the last line of that paragraph, I believe that "intra" group should be "inter" group

3. In the blood glucose and insulin section of the results: You state the primary analysis being non-significant with fasting blood sugar before going on to the secondary analysis comparing changes in each arm to baseline. You should do so with the 2 hour post load glucose too. The primary analysis should preceed the secondary.

4. In the last line of the 3rd paragraph of the discussion: There should be a "non-significant" after "consumption lead to a" and before "decrease of diastolic blood pressure"

5. On the last page of the discussion in the first full sentence: You state that the 2 hour post load glucose was significantly lower when the primary analysis was not significant.

6. At the end of the last sentence of the first full paragraph on the last page of the discussion you state that the triglycerides were lower when the primary analysis was not significant.
Comment:
I think it is interesting that pistashios did not cause a change in weight despite their fat content. Since that was the primary objective of the manuscript, I do not understand the desire to stretch the data regarding cardiovascular risk factors using an inappropriate secondary analysis. This paper should be presented in terms of the primary analysis. These secondary analysis comparing to baseline, if used at all, should be made very clear that it is a secondary analysis and not used to make statements about statistical significance of the trial that has a parallel arm design.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**
I am a financially compensated advisor to business that develop pharmaceutical, devices, medical foods and dietary supplements for the treatment of obesity. I have no conflict in regards to nuts in general or pistashios in particular.