Reviewer's report

Title: Nut Consumption and Risk of Atrial Fibrillation in the Physicians' Health Study

Version: 1 Date: 7 December 2011

Reviewer: Maira Bes-Rastrollo

Reviewer's report:

This is an interesting paper dealing with the relationship between nut consumption and risk of atrial fibrillation in the Physicians’ Health Study.

Strong points of the article are the relevance of this topic and the inexistence of literature about this issue so far. However, several issues deserve further attention and need to be addressed before being accepted for publication.

Major compulsory revisions:

1) Authors should include a flow-chart of participants specifying the number of participants excluded and their reasons (i.e. prevalent atrial fibrillation, extreme caloric intake, missing values, etc), as well as the retention rate of the study. In the methods section, the authors mentioned 22,071 participants; however the analyses were based on 21,054 participants.

2) Those participants that during follow-up developed some chronic disease such as any CVD, cancer or diabetes may change their diet and consequently their nut consumption during follow-up. Therefore, authors should conduct sensitivity analyses excluding those participants and evaluating their results.

3) In the methods section, the authors should present the validation results for the nut consumption.

4) The median time of follow-up of the prospective cohort should be included in the manuscript.

5) In the methods section, the authors should mention the questionnaire used to assess physical activity. Did they use a validated questionnaire? Did they obtain metabolic equivalents? This point should be taken into account as a potential limitation for residual confounding.

6) We should take into account the use of a prospective cohort study derived from a randomized controlled trial. Therefore, authors should include in Table 1, the percentage of participants according to the categories of nut consumption allocated to the intervention. Similarly, authors should present additional results adjusting for the intervention and secondary analyses stratifying for the intervention.

7) Authors should present secondary analyses stratifying for age.

8) According to the results for the highest category of nut consumption, it might be an inverse association of little magnitude between nut consumption and the
risk of atrial fibrillation; however it did not reach statistical significance. The proportion of participants with high consumption of nuts was very low, only 2.6% of the cohort consumed 7 or more times per week nuts. As a consequence of it, we could ask: Did they have enough statistical power? Please, comment this point in the new version of the manuscript.

9) It should be interesting to adjust also for family history of hypertension, hypercholesterolemia and diabetes.

10) The authors should also adjust for other dietary characteristics of participants.

11) The discussion should include possible biological mechanisms, as well as other potential study limitations.

Minor essential revisions:

1) In the results about secondary analyses stratifying for BMI, the authors should include the p for trend values.

2) In table 1, authors should define exercise.

3) Please, check all the references, always there are two more characters in the first authors and in reference 6, the name of the first author is missing.

Level of interest: An article of outstanding merit and interest in its field

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