Reviewer’s report

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

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Reviewer: Kenneth J Mukamal

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This highly focused manuscript presents a null association between nut intake and risk of AF in male physicians. The manuscript is reasonably well-written and appropriately brief. As with any null association, its interest lies in the strength of the underlying hypothesis - which was quite plausible here - and the precision of the estimates - which was also strong.

Major Compulsory Revisions

None

Minor Essential Revisions

1. In the U.S., and particularly in the 1980s, nut intake was not necessarily low in sodium - most were salted.
2. The information on nut exposure does not describe peanut butter, a relatively large source across the U.S. (but perhaps not in physicians). If it was not separately queried, this should be clarified.
3. Power is limited at the levels of consumption that would be most likely to influence risk. It appears that risk might even be statistically increased among all consumers of nuts weekly or more. As a post hoc analysis, this would be an interesting analysis for hypothesis generation in other data sets.
4. The discussion, especially of effects of nuts, uses strong causal language. That requires revision.
5. The outcome measure is described with multiple types of AF, but these are not used. Was the null association similar for all, and what was the breakdown of total AF by type?

Discretionary Revisions

1. It appears that AF is only ascertained by questionnaire, which requires individuals to survive from AF to the next questionnaire. Especially for AF related to congestive heart failure, that may be an important limitation. Is it possible that nuts trend toward higher risk because they improve survival among those with AF?
2. I am a little surprised that these authors did not include other dietary covariates. Assuming that nut consumption tends to be associated with other
'healthy' foods - in this cohort, breakfast cereal might fall in that category - might there be negative confounding by other elements of healthy diet that mask a true positive association?

**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 declare that I have no competing interests'