Reviewer’s report

Title: A Prospective Study of Dietary Selenium Intake and Risk of Type 2 Diabetes

Version: 1 Date: 14 June 2010

Reviewer: Lisa Rafalson

Reviewer’s report:

Assessment of work:
1. The question posed is clearly articulated and focused.
2. The methods appear appropriate to answer the research question.
3. The ORDET study is a large scale prospective epidemiologic study that includes over 10,000 Italian women from Varese, Italy and whose main outcome is breast cancer. The data is sound.
4. The manuscript adheres to relevant standards for reporting and data deposition.
5. The discussion presents a concise review of the literature, including studies that both support and contradict the present findings.
6. The limitations of the study are stated and the implications for interpretation are discussed.
7. The authors draw from a large body of epidemiologic research. Their work is one of few studies that have examined the association between dietary selenium intake and incident type 2 diabetes in European women.
8. The abstract and title accurately convey the essence of the manuscript.
9. The manuscript is very well written. It’s comprehensive and cohesive yet concise.

Major compulsory revisions
None

Minor essential revisions

1. In the statistical methods section the authors state that the Odds ratio is used to estimate the association between the highest and lowest selenium intake quintile on diabetes risk. However, Table 4 is titled “Relative Risk” and throughout the results the estimates are referred to as odds ratios.

2. Also in the statistical methods section the authors describe the test for trend used. Was this test used in the analyses for Tables 3 and 4? Can the authors clarify in the statistics section how test for trend test was performed?

3. The cumulative incidence of diabetes was 253/7182= 3.52% which seems low
for such a lengthy follow up and in comparison with other studies that include mostly whites as well as those that were conducted among Italians in Turin and Bruneck (Bonora, E. et al and Bruno G et al., respectively). The authors comment that this is likely an underestimate of the disease frequency despite the linkage to hospital and prescription databases. Do the authors know how complete these databases are?

Discretionary revisions

1. In the last paragraph of the results section the authors report that the odds ratio associated with a 50ug/d increase in selenium intake is 3.51. 50ug/d seems like a large increment. What was the rationale for this amount when the mean (sd) of selenium intake was 60.9 (1.11) and 56.8(0.212) for cases and non-cases, respectively.

2. In the Methods section under Study population the authors describe the recruitment of study participants. How representative are the participants of the general population?

3. The response rate of 79% is excellent. Were there any significant differences between those who agreed and refused to participate?

4. In the Discussion section the authors cite the InterAct Study and say that it’s a collaboration of nine European countries with 500,000 subjects. They give the URL-the number of EU collaborators on the site seems to vary from eight to 10 and the number of participants they show is 350,000

**Level of interest:** An article of importance 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