Reviewer’s report

Title: Dietary fat intake and quality of life: the SUN project

Version: 2 Date: 9 September 2011

Reviewer: Harvey Murff

Reviewer’s report:

Major Compulsory Revisions:
The authors note that the ratio of n-3 to n-6 polyunsaturated fatty acids was calculated. Although not specifically noted in the paper, this would imply that dietary intake of specific fatty acids was calculated and then summed to make a composite exposure variable rather than the composite variable (i.e. total PUFA) being directly estimated from the food frequency questionnaire. There are well described differences in the physiological effects of n-6 PUFAs, such as linoleic acid and arachidonic acid, versus n-3 PUFAs, such as eicosapentanoic acid. In addition, prior observational studies and clinical trials have suggested that the marine-derived n-3 PUFAs (eicosapentanoic acid and docosahexanoic acid) may improve depressive symptoms. As such it would be important to analyze n-3 PUFA and n-6 PUFAs separately.

Minor Essential Revisions
No suggestions.

Discretionary Revisions
Although the food frequency questionnaire has been validated against dietary recall there does not appear to be any validation against a biomarker. This is particularly important with respects to n-3 PUFA. Levels of marine-derived PUFA vary by fish species, season of catch, and location of catch. So although a participant might be able to report consuming fish and this may correlate to immediate dietary recall it does not inform one regarding their exposure to EPD or DHA. I do not think this is a critical revision however it might merit inclusion as a study limitation, particularly if the authors are able to present their work with more detail regarding the subtype of PUFA

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