

Reviewer's report

Title: Maternal fish and shellfish intake and pregnancy outcomes. A prospective cohort study in Brittany, France.

Version: 1 **Date:** 19 July 2007

Reviewer: Sjurdur F Olsen

Reviewer's report:

To the Editors: I am sorry, I simply do not have the time to comply with this structure, which I only noted now when I wanted to insert my text (inserted below); I do apologise for that. I hope my contribution can still be of some use to you and the authors. ---

General

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

My review starts here:

(Because this is in the midst of my holiday period, I will make this review relatively short. I imagine that editors and authors alike prefer that to getting a more detailed review at a later point in time when I am back from holiday.)

The two main findings presented in this longitudinal observational study are that 2) maternal consumption of fish is associated with prolonged duration of pregnancy, whereas 1) maternal consumption of shellfish is associated with reduced foetal growth. The authors interpret these findings as supportive of the hypotheses that 1) marine long chain n-3 fatty acids may prolong duration of pregnancy, and 2) that consuming seafood with a potentially high concentration of contaminants may reduce foetal growth, respectively.

This paper has several strengths

1. The authors provide, in the introduction and the discussion, a precise review of relevant results from earlier studies (trials and observational research) in this

field. This is a somewhat complicated task because some of the studies show no associations between the dietary exposures and the outcomes in question and others do, and those that do, may show associations in opposite directions; some studies only show associations with pregnancy duration and not with measures of foetal growth, and vice versa. However, the authors do an excellent job here and reference, as far as I can see, correctly in all instances.

2. With more than 2000 observations, the study it is among the larger studies in the field with a prospective detailed assessment of seafood in relation to pregnancy.

3. The study is done in a very special population with high exposure to shellfish, which provides a unique opportunity for making an analysis where the researchers can disentangle the separate association of seafood with pregnancy outcome from that of fish, and vice versa.

4. The paper is well written, the analytic strategy is generally sound, and the authors are careful in their interpretations.

Possible weaknesses

As pointed out by the authors themselves, they are unable to define a group with zero seafood intake, which may be one reason for the weaker associations observed with pregnancy duration, as compared to some earlier studies in the field.

Minor issues

Abstract: For a reader who only sees the abstract, it is difficult to interpret the measures of association given in there; e.g. specify what does highest and lowest shellfish consumption mean, and what does a fish meal refer to. And the sentence "No other association ..." is not understandable as written in the abstract.

Page 4, dietary assessment: The authors should state precisely when during pregnancy the women completed the questionnaire. The description of the classifications employed is not entirely clear to me and should be checked carefully again by the authors. E.g., for fish consumption the middle category (out of three categories) was "1-4 a month", whereas for shellfish it was "2-4 times a month"; is it correct that there was a difference here?

Page 10, line 6. "The trend towards ..." I may be wrong by I do not fully understand the meaning of this sentence. Can it be the authors have erroneously switched between the words "positive" and negative" here?

Table 5. It makes little sense to me to give a common estimate for the EPA and DHA (LC-PUFA n-3 FA) content in fish with such a variable content such as cod and salmon.

In conclusion I find that this is an important study, which is well conducted and

contributes important information from a unique setting, and which therefore deserves to be published well.

18 July 2007

Sjurdur F Olsen

Professor of Epidemiology, University of Aarhus <http://person.au.dk/da/sfo@soci>

Adjunct Professor of Nutrition, Harvard University

<http://www.hsph.harvard.edu/faculty/sjurdur-olsen/index.html>

Mobile +45 22289568

What next?: Accept after discretionary revisions

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.