Reviewer's report

Title: Polyunsaturated fatty acid intake and prevalence of eczema and rhinoconjunctivitis in Japanese children: The Ryukyus Child Health Study

Version: 2 Date: 18 April 2011

Reviewer: Fariba Koohdani

Reviewer's report:

The manuscript provides useful data from a large samples for the relationship of PUFA intake and prevalence of eczema and rhinoconjunctivitis when the daily n-3 PUFA intake is not low. However there are some flaws which require to be taken into account.

Major Compulsory Revisions

Methods:
The authors have mentioned the self-administered questionnaires were completed by the junior high school students themselves and/or their parents. It should be clarified that selection bias could not be happened by different groups of replier.

It should be explained whether the self-reported body weight and height were validated or not. If they were not validated it can be weaknesses of the study.

Minor Compulsory Revisions

Background:
It is suggested to add some explanation about the prevalence and importance of eczema and rhinoconjunctivitis in the world and in the area of the study.

Methods:
Finally only 61.2% of the eligible subjects were included in the current analysis. The possibility of selection bias has been inevitable. Especially according to the discussion (page11 lines2-6) those who were included and those who were excluded (14.4% of excluded subjects or the children whose questionnaires contained missing or illogical data on the variables under study) were different in some variables. It can be very important limitation of the study.

Also main variables such as prevalence of eczema and n-3 & n-6 PUFA intake should be compare between those who were included and those who were excluded.

Discussion:
Reasonable and probable cause of different results between "the relationship of
PUFA intake & eczema" and "the relationship of PUFA intake & rhinoconjunctivitis" should be explained.

Discretionary Revisions
Discussion:
For conforming to the point that mentioned in the page 10 lines 3-5, it is suggested to add the comparison of the prevalence of eczema & rhinoconjunctivitis in the area with less n-3 PUFA intake and the area of the present study.

Page 10 line 22-23: Opposite of the author’s opinion it seems people with problem (eczema and rhinoconjunctivitis) might be more aware of possible ill effects of diet.

Conclusion:
It is suggested to add that explanation that the result of the study just might be replicated in communities with high n-3 PUFA intake.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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.