Reviewer's report

Title: Dietary intakes and food sources of fatty acids in diets of Guatemalan schoolchildren: A cross-sectional study

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Reviewer: Pierre Astorg

Reviewer's report:

This manuscript by O. Bermudez et al. reports a descriptive study of the intake levels and food sources of fat and fatty acids in a sample of Guatemalan children. The methodology used seems appropriate, and the results are given in details in tables. However, the manuscript has to be improved on many points.

Major compulsory revisions:

1. The manuscript’s clarity, exactitude, order and concision need to be improved, as well as the English. Some non-extensive indications are given below in this purpose.

2. The methodology should be described more precisely, since the quality of the study relies on it. The age of the children must be given. Was SES of children individually assessed by a questionnaire? In any case, the criteria leading to the definition of high SES (for private school) and low SES (public school) must be described, since SES is one of the factors studied. Similarly, the method used for dietary assessment has to be described thoroughly. Apparently, it consists of a single 24h dietary record using pictures made by the children. Was it repeated over the 6-week period? Were the children guided by a list of items, or pre-existing pictures? The term “prospective” can be misleading, it suggests that several records have been done at different times.

3. Individual fatty acid intakes as energy % should be reported in table 2 (the same list as in table 1). Following FAO/WHO recommendations, table 3 should also give the proportion of children with PUFA<6 % E and with total n-6 PUFA < 5 % E. The Results paragraph should help the reading of the detailed tables by stressing the most important results, not repeating too systematically the tabulated values. The differences between children with high or low SES are not so great, though sometimes significant. The most striking results of this study are the very low intakes of ALA, EPA and DHA, due, for the last two, to the very low fish intake.

4. The discussion can be improved and has to be rewritten. It should focus on the goal of the study (fat and fatty acid intake) by comparing results with those from other studies, rather than include considerations on fatty acids and health. On the whole, the intakes of total fat and particularly of saturated fatty acids by Guatemalan children are much lower and closer to recommendations than those of children from Europe or North America, which seems to show that the westernization of the diet is only partial. In contrast, intakes of ALA and of
long-chain n-3 PUFA (EPA and DHA) are low. The fact girls from both groups do
not eat fish at all, whereas boys do eat some fish, is of interest and would
deserve some discussion. Besides, have the authors any information about the
fats and oils used in their sample (or in Guatemela), which could explain low ALA
intake? (see studies from Baylin & Campos in Costa Rica). In terms of nutritional
adequacy, it is clear that the main point to be ameliorated in Guatemalan children
is the low n-3 PUFA intakes (both ALA and long-chain PUFA), which suggests
recommendations for some changes in food habits (eating fish, and choosing
ALA-containing oils and fats).

5. The conclusion needs to be rewritten. It should summarize the study’s main
results and can suggest new research and public health recommendations.
There is no need to quote references.

6. The abstract must take revisions of the text into account.

Minor essential revisions:

Title: “Dietary intakes and food sources of fat and fatty acids in Guatemalan
schoolchildren”.

Abstract: there is an excessive use of abbreviations, and some are not defined.
Write total fat, not TF. Define SES.

Text:
1. line 34: “low levels” instead of “unacceptable levels”
2. lines 47-48: there is no consensus about the consequences of a high-fat diet
during childhood on risk of adulthood diseases, especially the onset of
overweight and obesity. What is sure, and can be mentioned to justify the interest
of this study, is that fat and fatty acid intakes during childhood can have
long-term health consequences.
3. line 51 (and line 62, and in the tables): ALA (#-linolenic acid) is 18:3n-3, not
18:3n-6 ! Canadian Inuits eat high amounts of long-chain n-3 PUFA, not of “n-3
LA”, which does not exist!
4. lines 66-67: delete
5. line 101 (and further in the text): single pictorial 24h dietary record
6. line 119: dietary lipids, cholesterol and main fatty acid classes; delete line
121.
7. lines 124-126: not clear
8. line 140 (and further in the text, and in the title of table 3): “…we defined
inadequate intakes of total fat, …”. The term “unhealthy intakes” is inappropriate,
use “inadequate intakes”.
9. line 143: a ratio of 8 or more…
10. line 148: “Main food sources…”: cancel.
11. line 153: refer to table 1.
12. line 159: delete.
13. line 171: refer to table 2.
14. line 246: delete.
15. lines 255-258: “recommendations... protective.” : delete.
16. line 277: delete.
17. tables 1, 2 and 3: see precedent remarks.
18. line 426: “Table 1. Mean daily intakes (g/day) of fat and fatty acids by Guatemalan schoolchildren, by gender and SES.”
19. line 426: “Table 1. Mean daily intakes (% of total energy intake) of fat and fatty acids by Guatemalan schoolchildren, by gender and SES.”
20. line 436: “Table 3. Proportion of schoolchildren with inadequate intakes of fats, by gender and SES.”

**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