Reviewer’s report

Title: Fatty fish intake and attention performance in 14-15 year old adolescents: FINS-TEENS - a randomized controlled trial

Version: 0 Date: 07 Aug 2017

Reviewer: Paulina Correa-Burrows

Reviewer's report:

This paper describes a RCT aiming to investigate whether consumption of fatty fish 3 times/WE during 12 WE could improve attention performance in Norwegian adolescents ages 14-15 compared to similar meals with meat or omega-3 supplements. So far, no other RCTs have approached the relation between fatty fish intake and cognition in the adolescent population, which is a major strength of this research. The research question is well crafted and contains all the major elements to properly assess the quality of both the intervention and its findings (population, intervention, comparisons, and outcomes). Background diet was consider in the analysis, which should be consider another major strength of this study since many RCT's assessing nutritional supplementations do not include this important confounder. The statistical analysis is well described, step-by-step, and the approached used by the authors is correct. The paper is well written, no language editing is needed, and it was easy to read it, so the findings should be easily communicated to a non-academic audience, let's say, parents, teacher/educators, and health policymakers. I have a few minor suggestions which are mostly intended to add to the paper.

1. Overall in the text, please, replace gender with sex, since gender is not a biological category.

2. Introduction: It really surprised me that Norwegian adolescents have a low intake of fish, and so I'd like to see more details on this. Perhaps stats from a population health or food consumption survey and/or comparison with other European countries.

3. Methods: Authors may want to merge the subjects and randomization subsection with the sample size subsection.

4. Methods: because the sample is made of male and females participants, BMI for age and sex (BMI z-score) should be reported instead of raw BMI. And just for description purposes, I'd like to see the prevalence of participants having and unhealthy weight (overweight/obesity).

5. Discussion: I'd like the authors could dig deeper into the topic of bioavailability of fish omega-3 LCPUFAs vs. supplement omega-3 LCPUFAs. Because the fish group have a relatively low compliance compared to meat and supplement groups, and in spite of that, they had better cognitive performance it may be that bioavailability is the missing piece of this equation.
6. Discussion: Be more specific about the implications of your results for research, practice and policymaking. In fact, you may want to include a subsection.

7. Because the amount of fish/meat eaten was estimated by eye rather than using an objective measure such as weighing out food portions, state this as a limitation.

**Level of interest**
Please indicate how interesting you found the manuscript:

An article of importance in its field

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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None to declare.

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