Reviewer's report

Title: The effects of changing dairy intake on trans and saturated fatty acid levels-results from a randomized controlled study

Version: 1 Date: 25 January 2014

Reviewer: Rachel Brown

Reviewer's report:

This study reports the results from a randomised parallel study involving 180 healthy volunteers, which investigated the effects of increasing, decreasing or making no change to dairy intake on plasma fatty acids.

Major compulsory revisions:
The manuscript would benefit from some introductory discussion regarding the importance of measuring plasma fatty acids and how these are these related to health outcomes? This would set the scene nicely for the study.

Although the authors state the methods are reported elsewhere it would be useful to have more information for this manuscript. For example the collection, processing and storage of samples for fatty acid analysis is important. It would be useful to have a description of the methods used. It would be useful to have a little more information on participant characteristics e.g. age, sex etc.

Given this is a randomised trial, in the results section the authors should firstly report between group differences. As a secondary analysis within group differences can be reported.

The discussion could be strengthened. For example, only TFA are discussed in any detail. What about the other fatty acids present in dairy foods? How do these changes compare to previous studies? What do the results mean? What additional information do the results provide regarding dietary recommendations to reduce dairy fat intake?

Minor essential revisions:

Abstract
The 'C' in 'Changes' needs to be unbolded.

A full stop in the methods has an additional space.

Background
Referencing within the text is inconsistent. The full stop is sometimes before the reference and sometimes after. Also there is sometimes a space between the text and the reference and sometimes not. Please ensure the referencing is consistent and follows the instructions for the journal.
Page 3, paragraph 2: “real word” should read “real world”.

Page 3, paragraph 2: The last sentence needs a full stop.

Page 3, paragraph 3: “…considered makers of dairy intake” should read “…considered markers of dairy intake”.

Page 3, paragraph 3: It is stated that no randomized studies have assessed the effects of changing the usual diet on rTFA levels. Why is this important? What is the influence on health?

Page 3, paragraph 4: The first sentence states the aim of dietary advice to reduce intake of foods with saturated fats and TFA is to reduce plasma levels of ‘harmful’ fats that may increase CVD. Are ruminant TFA associated with CVD risk? Is there some discrimination needed between different types of TFA. Also the study evaluated dairy intake on plasma fatty acid levels? Some information on why it is important to examine this would be useful. This would help set the scene for this study.

Methods

Page 4: Why were 7 different brands of 3.3% fat milk analysed? It appears that participants were asked to increase or decrease all forms of dairy. What was the rationale for just analysing 3.3% fat milk.

Page 4, paragraph 1: Should fasting blood samples be described in a section headed “Milk samples”?

Page 4, paragraph 2: There appears to be an extra space before the first comma.

Page 4, paragraph 2: By how much were participants actually asked to change their dairy intake by? Some more detail on dietary advice received by participants would be useful.

Page 4, paragraph 2: Over what time period was the ffq validated? Why was a diet record not used to assess intake? Would this have provided a more accurate measure of dairy fat intake?

Page 4, paragraph 3: What was the rationale for measuring plasma phospholipids as opposed to other fractions? What was the CV for the analysis of fatty acids?

Page 5, Statistical analysis: Was the final analysis intention-to-treat or per protocol?

Results:

Given this is a randomised trial, it would be useful to firstly present differences between the 3 groups. Then as a secondary analysis, differences within groups can be presented.
Page 6, paragraph 1: Suggest when a number begins a sentence, write the number in full.

Page 6, paragraph 2: Change “…and for decreased dairy diet…” to “…and for decreased dairy diet…”

Page 6, paragraph 2: change “…those asked to increase and reduced dairy food…” to “those asked to increased and reduce dairy food…”

Page 6: It would be useful to provide information on the dairy fat content of the different treatments. The changes in serves provides some information on change in total dairy intake, but does not provide detail on change in dairy fat. For example some participants may change cheese intake which would result in a different change in dairy fat compared to those who increased yoghurt.

Page 6, paragraph 3: change “Effects of charging dairy food…” to “Effects of changing dairy food…”

Page 6, paragraph 3: Food diaries are mentioned here, but not in the methods section. Please provide more information on these.

Page 6, paragraph 3: It would be useful to report the overall p-value for comparing the difference in change between the three groups. This is the primary outcome, not differences within groups.

Although the changes in total saturated fatty acids were not statistically significant between the three groups, the changes were 13.1%, 2.4% and 3.5% for the increased dairy diet, the same dairy diet and the reduced dairy diet respectively. Do you think the study was sufficiently powered to see statistically significant differences? Are the differences in changes between the three groups clinically meaningful?

Page 6, paragraph 4: It seems odd that total rTFA reduced by 5.5% on the increased dairy diet, but increased by 10.1% on the decreased dairy diet. It would be useful to report the overall p-values for comparing the difference in the changes in fatty acids between the three groups.

Discussion
Page 7, paragraph 2: Are rTFA considered ‘harmful’ fats?

Page 7, paragraph 3: Suggest adding “statistically significantly” to the last sentence.

Page 8, paragraph 1: Suggest removing the full stop after “…within 2-3 weeks”

Page 8, paragraph 1: Remove one of the full stops at the end of the last sentence.

References
Reference 3 does not appear to have page numbers
Reference 5 does not appear to have a volume number
Reference 21 does not appear to have a volume number or page numbers

Tables and figures
Table 1: The decimal places used for the mean and standard deviation should be the same. Also, there is sometimes a space between the mean and standard deviation and sometimes there is no gap. Please be consistent.

Table 2: Change title from “Effects of changing dairy food intake for one moth…” to “Effects of changing dairy food intake for one month…”

Figure 2: Suggest rewording the text for this figure to “...However when correcting for multiplicity testing; only the change in pentadecanoic acid remained significantly different between the high and low dairy food diets”.

Figures 3 and 4 are not discussed.

Discretionary Revisions:
In the methods section it would be useful to describe the study as a parallel design.

Suggest all p-values are presented to 3 dp for consistency and clarity throughout the paper.

Page 3, paragraph 3: Suggest rewording “Ruminant TFA are only from the diet and derive…” to something like “Ruminant TFA are obtained only from dietary sources and derive…”

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