Author’s response to reviews

Title: Normal/high-fat milk consumption is associated with higher lean body and muscle mass in Japanese women aged between 40 and 60 years: a cross-sectional study

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Author’s response to reviews:

Response to the Editor and the Reviewers

We truly appreciate valuable suggestions and comments made by the editor and the reviewers. Below are our point by point responses.

First of all, according to the editor’s and the first reviewer’s previous comments, we changed the stratification of the study participants to “non-consumers”, “exclusive low-fat milk consumers”, and “exclusive normal/high-fat milk consumers”. The text was revised accordingly, and the old Tables 2 and 3 were merged into a new Table 2.

Editor Comments:

>As the study was a cross-sectional with a small sample size and univariate analysis, it is not appropriate to conclude any association with outcomes. Please rename the manuscript title.

We truly agree with the editor that the cross-sectional design of our current study prevented a determination of the causal relationship between milk consumption and the body composition of the participants, so we could not use a title like “Normal/high-fat milk consumption increased the lean body and muscle mass in Japanese women”. However, the word “association” does not include any causality, only implying that there is some link between two factors. Therefore, we suppose we may not need to change our manuscript title.
Background: Please add available literature of studies about association of milk consumption and body composition and other factors related to body lean mass.

According to the editor’s suggestion, the sentence below was added to the Background section.

“Recently, high dose of milk product intake after exercise was reported to increase thigh muscle strength possibly through NFKB1 and NFKB2 gene methylation in elderly women [20]. However, little is known about the association between daily milk consumption and the body composition in middle-aged women.”

Dietary habits - please define what high fat and low fat milk consumption was. How were they measured?

It was detailed in the “Dietary habits” in the “Methods section”.

Results - As raised previously by the first reviewer, there is still major issues with definition of high/normal and low fat milk consumers or non-consumers. It seems most of women in the category of low fat milk non-consumers were high fat milk consumers. You need to make categories of low fat consumers, high fat consumers and non-consumers; or categories of any milk consumers versus non-consumers and sub-categories of low or high fat milk consumers under consumers, and then conduct the analysis based on these. If some/most of low fat non-consumers were high fat consumers, analysis and findings in the table 3 are invalid.

As mentioned above, we changed the stratification of the study participants to “non-consumers”, “exclusive low-fat milk consumers”, and “exclusive normal/high-fat milk consumers”. The text was revised accordingly, and the old Tables 2 and 3 were merged into a new Table 2.

Page 12, line 3, please define what the exclusive high fat milk consumers is.

Please refer to the “Dietary habits” in the “Methods section”.

Reviewer reports:

Amy Hector (Reviewer 1): The authors have addressed many of the reviewers' comments adequately.

The definition of the low and normal/high fat milk consumers vs exclusive low and normal/high fat milk consumers, and non-consumers should be made even clearer throughout the manuscript.

It was detailed in the “Dietary habits” in the “Methods section”.

"Brief-type self-administered diet history questionnaire (BDH-Q) inquired about the intake of a food item on a 7-point scale. Concerning normal/high- and low-fat milk, the scale is not about the volume, but about the frequency of intake: twice a day or more (7); once a day (6); 4 to 6
According to the participants’ responses, they were classified as "consumers" if they scored 4 or more, and as "non-consumers" if they scored 3 or less. The Methods section was reorganized to add this information.

>What was the average score for the normal/high, low, non-consumers and exclusive consumers?

The sentence below was added to the Results section.

“The average BDH-Q scores for low-fat and normal/high-fat milk consumption in each group were: 1.3±0.7, 5.6±1.0, 1.0±0.2 and 1.9±0.8, 1.2±0.6, 5.9±0.7, respectively (mean±SD).”

>Table 1 - This could be a supplemental table and could be improved by providing the data for each group.

As the old Tables 2 and 3 were merged into a new Table 2, we suppose the paper could accommodate the Table 1, which is helpful for the readers to understand what the BDH-Q is.

>Zuzanna Goluch-Koniuszy, PhD., D.Sc., Eng. (Reviewer 2): I accept the revised and supplemented version of the work.