Author's response to reviews

Title: The validity of the non-exercise activity thermogenesis questionnaire evaluated by objectively measured daily physical activity by the triaxial accelerometer

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Version: 3 Date: 5 June 2014

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The List of Modification
Reviewer: Dr. Hiroshi Yoshida

1) According to the comment “The difference between locomotive NEAT score and non-locomotive NEAT score for explanatory effects to PAL should be described in Methods.”

We newly made Table 2 entitled “Locomotive and non-locomotive activities, and predicted METs by each activity in our NEAT questionnaire”.

And we added the following sentence in the section of “Methods”, by newly citing reference 12.

Table 2 showed questionnaire items about locomotive and non-locomotive activities, and also predicted METs by each activity in our NEAT questionnaire [7, 12].

2) According to the comment “The present investigation results to clarify sex-difference, the unsolved issue about the NEAT questionnaire in previous study, should be shown in Results, and that may make the discussion more insightful.”

We newly made Table 3 entitled “Correlations of NEAT score with physiological and biochemical parameters in all subjects, men and women”.

And we added the following sentences in the section of “Results”.

Our previous study showed that the NEAT score was significantly and inversely associated with serum insulin levels, suggesting a beneficial association of NEAT with insulin sensitivity in all subjects [7] (Table 3). The NEAT score was inversely associated with waist circumference, and also was positively associated with HDL-C level in women [7] (Table 3). However, a beneficial association of NEAT with waist circumference and HDL-C was not observed in men.
Reviewer: Dr. Yuji Hirowatari

1) According to the comment “Authors have to add the estimation data of men and women, and compare between those of men and women, because women generally do more housework than men do.”

We newly made Table 3 entitled “Correlations of NEAT score with physiological and biochemical parameters in all subjects, men and women”.

And we added the following sentences in the section of “Results”.

Our previous study showed that the NEAT score was significantly and inversely associated with serum insulin levels, suggesting a beneficial association of NEAT with insulin sensitivity in all subjects [7] (Table 3). The NEAT score was inversely associated with waist circumference, and also was positively associated with HDL-C level in women [7] (Table 3). However, a beneficial association of NEAT with waist circumference and HDL-C was not observed in men.

There were no differences in PAL and locomotive NEAT score between men (1.59 ± 0.15 and 20.4 ± 3.9, respectively) and women (1.64 ± 0.22 and 18.6 ± 3.9, respectively). However, the whole NEAT score and non-locomotive NEAT score were significantly higher in women (66.9 ± 12.7 and 48.3 ± 9.2, respectively; P = 0.026) compared with those in men (59.0 ± 8.6 and 38.6 ± 7.4, respectively; P < 0.001).

2) According to the comment “Authors have to describe comparison between the NEAT score and the other methods by using questionnaires.”

We added the following sentence in the section of “Discussion”.

To our knowledge, our NEAT questionnaire is the first to evaluate NEAT including locomotive and non-locomotive activities in clinical practices.

3) According to the Minor comment 1.

We changed the title from “Introduction” to “Background”.

4) According to the Minor comment 2.

We added the part of “Conclusion” in the manuscript.

5) According to the Minor comment 3.

We checked the instructions for authors of BMC Sports Science, Medicine & Rehabilitation.

6) Statistical review

We asked the statistician to check our data, which was approved by him.