Reviewer's report

Title: A Cardiorespiratory Fitness, Body Mass Index, and Cancer Mortality: A Cohort Study of Japanese Men

Version: 2 Date: 24 June 2014

Reviewer: Keisuke Kuwahara

Reviewer's report:

Synopsis. The authors conducted a cohort study of Japanese male workers to address whether higher fitness is associated with a lower risk of cancer mortality in men with a higher BMI. As a result, the authors found an inverse association of cardiorespiratory fitness with risk of cancer mortality in smokers (current and past) but not in never-smokers. The authors also found that an inverse association of fitness with risk of cancer mortality was not modified by weight status. This paper provides important information for cancer prevention in an Asian population. However, this study is limited by small number of deaths due to cancer, leading to wide confidence intervals. I have several minor comments as below.

- Major Compulsory Revisions
  - Introduction
    1) 3rd paragraph, there is some duplication in meaning between the sentences “we intend to extend our previous study, which investigated CRF and cancer mortality” and “, extending our previous investigation of CRF in relation to cancer mortality (ref)”. Please, reconsider.

  - Methods
    2) Section for Participants, when the interview to confirm the presence of disease including asthma and so on was done? Please specify where appropriate for clarity.

    3) Please simply describe how the authors calculate man-years in the Data analysis section.

    5) It would be informative to describe the coverage rate of the retired men by the members list kept by the Tokyo Gas Retiree Office in the Mortality surveillance section. Most of the retired men were registered in the list?

- Results

  6) 2nd and 3rd paragraphs, please show hazard ratios and 95% confidence intervals for major results.

- Table 2

  7) The sum of never-smokers and smokers (defined as past and current) is 7,704. This number is less than total number of workers remained for main
analysis (n = 8,760). Could you kindly explain?

- Figure 1
8) Please describe total number of participants as well as number of cases in each of the combined categories of BMI and fitness where appropriate.

- Minor Essential Revisions
- Abstract
9) Please check whether the use of abbreviations for CRF and BMI are correct.

- Methods
10) “self-administered questionnaire was administered”
This can be rephrased to avoid redundancy.

- References
11) Please check the followings at least for correctness.
Ref 11. THomas -> Thomas?
Ref 17. P Peel -> Peel?

- Discretionary Revisions
- Abstract
12) Conclusion section, the authors may stress the conclusion derived from joint analysis; the present conclusion appears to be derived from single association of CRF with cancer mortality.

- Discussion
13) Limitations section, the present study was conducted among workers, who are generally healthy. Therefore, caution may be required to generalize present results to general population or non-working population.

- Key Words
14) It might be better to add “cancer mortality” to keywords (rather than smoking) to describe this study.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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.