Reviewer's report

Title: A case-control study of physical activity patterns and risk of non-fatal myocardial infarction

Version: 2 Date: 9 October 2012

Reviewer: Kristi L Storti

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There is some concern regarding the standardized questionnaire used to assess physical activity. While the authors indicate that the questionnaire was validated via the Harvard Step test, plasma lipids, and obesity; when the previous articles cited were pulled, this validity information was not included and many of the findings were based upon fitness not physical activity. Therefore, more information is needed on the 18 questions used to assess physical activity and the actual validity estimates.

In the results, page 10, the authors indicate that total energy expenditure was 32.3 METs/day for cases and 33.2 METs/day for controls, but do not indicate previously how this was calculated. In Table 2, the sum is listed as energy expenditure which is contradictory. Furthermore, total energy expenditure cannot be calculated by questionnaire alone as it consists of resting metabolic rate, the thermic effect of food, and activity related energy expenditure. An estimate of "activity" related energy expenditure or total activity related energy expenditure can be calculated but not total energy expenditure. This information needs to be changed accordingly in the text.

With regard to the physical activity variables, were these assessed for normality as the data presented in Table 2 are means (SD). Physical activity data is usually skewed and presented as median (IQR).

With regard to walking and light activity, respondents to physical activity recall questions may tend to overestimate walking and underestimate sedentary behavior.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests