Reviewer’s report

Title: Association of physical activity with lung function in lung-healthy German adults: Results from the KORA FF4 study

Version: 0 Date: 30 Jun 2017

Reviewer: Dorthe Stensvold

Reviewer's report:

The article adds novel knowledge about the association between lung function and physical activity in apparently healthy adults. The aim is clear, and it is a well-designed and well written study.

Minor revision:

Abstract:

What is KORA FF4? Write out.

Change to (>47 or >50 minutes/day for females and males, respectively)

Change to (<17 or <21 minutes/day for females and males, respectively)

The author write: "These associations were driven by ever/current smokers." It is a strong statement that it was driven, the study was not design to evaluate cause/effect. Better to state that the association was stronger, or only apparent among smokers.

The author state: Engaging in MVPA for 10 consecutive 53 minutes was only associated with higher PImax 0.57 kPa.

Was this the difference, or was it the absolute value, does not say anything unless you give the value it is compared to…

Background

Line 87-89: This paragraph should be placed at the very end of the background: "Considering the limited evidence on the association between PA and lung function in lung-healthy populations, our aim was to investigate the association of accelerometer-based PA with lung function in German adults without chronic lung diseases"
Line 90-92: The following section should be placed in the method section: "The outcome measures of lung function were spirometric parameters, and also maximal inspiratory mouth pressure (Plmax) for inspiratory muscle strength and for pulmonary gas exchange the lung diffusion capacity for carbon monoxide"

Methods:

Change line 105 to: The present analysis was based on a follow-up study of the KORA S4 (KORA: Cooperative Health Research in the Region of Augsburg) cohort comprising 4261 adults (percentage women?) examined in 1999 - 2001.

Line 113: What does self-reported physician diagnoses mean?

Line 117: Ref for the questionnaire?

Line 130: How many females? Percentage?

Results:

The author find that the association is clear among ever/current smokers. Present some characteristic between the ever/current smokers and never smokers. Were there any differences in the lung-function parameter? Could that explain your findings?

Line 218: Don't start a sentence with a number, my suggestion is to write; In total, 66%... and so on.

Line 231: This sentence need to be written out, and more clear. The results for FEV was the same as for?

Line 239: The author write: "…. least 10-minute bouts were negatively associated with those indices" is the author referring to the parameter some lines above? Clearify.

Discussion:

Line 262: Maybe write favorable spirometric parameters.

Line 275: It sounds like this was your finding. Better to say, has previously been shown…

Line 290: It sounds like this was your finding. Better to say, has previously been shown…
Line 302: Are the author comparing with smokers with low PA or no smokers with low PA, this is not clear…

Conclusion:

Line 336: Drop "Rarely investigated".

Line 337: …positive association with favorable lung function.

Table 1:
Write mean (SD), or N (%), or median should be written behind each variable, instead off after each headline.

All the marking with *, a, b and c is a bit confusing. You have already state the analysis performed for the different variables in the method section, no need to add it in the table. It is enough to mark * after the variables that are different between men and women.

Make the abbreviation come in a chronological order. TLCO/A before MVPA.

Table 2:
Drop to write the analysis used in the title. It is all written in the methods. In general, cut down on the paragraph under the tables, write only the most necessary things (abbreviations, p-values).

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:
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