Reviewer’s report

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

Version: 1 Date: 22 Nov 2017

Reviewer: Janos Porszasz

Reviewer's report:

I thank for the authors' thorough responses and additional work. I think, they have answered all my questions with adequate views. I have only one point for further argument, but this does not need any further work or response. However, I would like to express my opinion about the usability of MEF25-75 below:

I would further argue against the usefulness of MEF25-75 on the contrary of the cited references by authors. It has been shown that the coefficient of variation of MEF25-75 is large. Further, the LLN of MEF25-75 is rapidly declining with age (LLN=64% of predicted at age 20, ~42% at age 60, ~35% at age 70 and only ~12 at age 80). None of the FEV1 or FEV1/FVC LLN is declining similarly. Furthermore, the FET is affecting it such that values taken from blows with different FETs are not comparable, because FVC depends on FET in obstructive disorder. Given that MEF25-72 is the tangent of the volume vs. time curve (between 25% and 75% of VC), in normal subjects, when the volume is rapidly increasing, the slope of the tangent between 25% and 75% of VC falls mainly within the 1st second (i.e. FEV1) of the forced blow (large airways); while in moderate or severe obstruction, when there is a remarkable decrease in flow rate, the time between 25% and 75% of VC falls rather to several seconds. Therefore in this patient population, the value of MEF25-75 is reflective of a different generation of airways (i.e. small airways) than in normal persons. Such a variable that describes the features of different airway generations in different patient population cannot reliably used to describe the behavior of any specific airway generation.

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

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I am able to assess the statistics

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