Reviewer's report

Title: C-reactive protein mediates the association between leisure-time physical activity and lung function in middle-aged and older adults

Version: 0 Date: 17 Sep 2019

Reviewer: Michael Dale

Reviewer's report:

This is an interesting and well written paper, which is generally clear and concise. the authors are to be commended. I have a number of relatively minor comments and queries, as follows:

1. Line 26 - change 'were' to 'are' - biological mechanisms 'are' unclear.

2. Line 78-79 - change to read 'Regular PA produces anti-inflammatory ...

3. Line 79 - change to read 'suppress serum levels of C-reactive ...'

4. Line 88-89 - change to read '... between PA and lung function. The extent to which inflammation mediates this association is unclear. '

5. Line 111. i assume that the ONLY 2 tests are FVC and FEV1? If so, 'including' FVC and FEV1 is misleading as it implies that there were others. A minor re-write may be required here.

6. Section on LTPA. I understand that this particular categorisation (of PA to high/moderate/low) appears to have been used serially back to ~2007. However, this categorisation does not substantively address issues of volume (i.e the overall amount of PA that is reported). Thus, independent of reporting bias, this classification could introduce error regarding PA levels (i.e. some individuals may perform a large volume of low intensity activity an be classified 'less' active than someone who performs 2 very short bouts of moderate level activity). The authors might like to address this as a limitation.

7. Line 262. I think that the statement 'Based on this epidemiological data, we proved the role of inflammation as a mediator ...' is too strong a comment / conclusion to draw. 'Prove' is an awfully strong term to be throwing around.

8. Line 288. Please re-write - 'This study profound a far-reaching public health ...' is very poor English.

9. Line 325. Can the authors provide a specific Ethics approval reference # for the approval for ELSA?

10. Line 340 (reference 1) - this is a poor source - surely there is an authoritative source that underlies the contents of this web-page that could be cited?
11. Line 339 References: there is inconsistent capitalisation across reference titles

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?
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