Reviewer's report

Title: Trajectories of physical activity, from young adulthood to older adulthood, and pancreatic cancer risk; a population-based case-control study in Ontario, Canada

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Reviewer: Dominique Michaud

Reviewer's report:

There is great interest in whether physical activity at different points during a lifetime is associated with pancreatic cancer risk and few studies have data to address this. Data from studies on adulthood physical activity and pancreatic cancer are inconsistent; measurement error in assessment of physical activity may have contributed to the null findings. Unfortunately, despite having collected data on physical activity at different decades in the cases and controls, the measurement of physical activity is extremely crude in this study (there were no questions on what type of exercise the participants engaged in, just two questions on "moderate" and "vigorous" activity). The findings for the trajectories are null and most odds ratios have very wide confidence intervals - it is unclear if this means there are no associations, or if the PA measures have too much measurement error to detect any associations. So while the study is novel, it uses poor methodology and is inconclusive. The discussion addresses potential recall bias, but not random measurement error from an oversimplified PA assessment - this should be discussed.

Authors should include results from a study which reported associations with adolescent and adult physical activity in relation to pancreatic cancer (cohort from Shanghai) published in Cancer Epidemiol Biomarkers Prev. 2018 Apr; 27(4): 479-487.

Table 4 includes categories for engaging in moderate activities with the lowest and referent level being at "never/rarely" with very small numbers of case/controls. The next category up "a few times a month" still represents a very low activity level but has more cases and controls. Given the estimates (and confidence intervals) for the moderate exercise analysis are very unstable due to the small numbers in the referent, it would make sense to collapse the two bottom categories. Also, it doesn't seem plausible that exercising "a few times a month" would result in an OR of 0.27 in men - stronger inverse associations than those exercising more. It is also misleading to report the OR of 0.56 from table 4 in the abstract, given the implausible results from this table - I think this is more likely to be a chance finding.
Was smoking duration or dose available and if so could these also be included in the multivariate models?

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
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