Author’s response to reviews

Title: Physical activity types and risk of dementia in community-dwelling older people: the Three-City cohort.

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Title: Physical activity type and risk of dementia in community-dwelling older people: the Three-City cohort
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Dear Dr Oliver Cocks,

Thank you for reviewing our manuscript. As requested we modified the tables and the figure. We provide a specific answer below. The modification is underlined in yellow in the revised version. We hope that you will consider our revised manuscript for publication in BMC Geriatrics.
Yours sincerely,

Dr Isabelle Carrière

Editor Comments:

The distribution of the sports sub-scale is highly skewed, with 40% scoring 0, and I wonder how reliable the cubic spline fit is given the small numbers with higher scores?
Response:
We used restricted cubic splines that avoid overfitting for extreme values. Furthermore, our sample includes 1550 participants and for the leisure and sport activity sub-score we have 904 participants with a score above zero and 262 values $\geq 10$. This is sufficient to estimate with accuracy a spline curve and its confidence interval. We tested different knots and the spline with the lowest Akaike information criterion was chosen. However as mentioned in the limits the relatively low number of participants with high leisure and sport activity may preclude detecting a significant effect.

I would also suggest adding the referent categories to the tables and the percentile boundaries for the groups to the figures to make them more interpretable.
Response:
Thank you for these suggestions. We have added the reference category in the tables (Tables 2 and 3). We also changed the figure by distinguishing the three physical activity classes (low, moderate and high) with different colors on the histogram.