Physical activity and the risk of postmenopausal breast cancer - the Norwegian Women and Cancer Study

This study examines the role of physical activity (PA) in different periods of life on postmenopausal breast cancer. Breast cancer was specified by ER and PR status. This is an interesting topic, however, a large body of observational evidence already exists. Less evidence is available about the timing of PA and breast cancer risk. It is hypothesized that the breast is most vulnerable to carcinogens during the period between menarche and first child birth. Therefore, it is import to study effects of PA during early life periods.

General comments
1. This study also investigated PA in early life. However, recall bias is a large concern here even as the very concise physical activity questionnaire.
2. The authors investigated a very large amount of associations and correctly corrected for multiple testing. The large amount of study questions did also decrease the clarity of the paper. The paper should become more readable when the authors clearly specify the primary study question/purpose. Is the primary study goal for example the effect of PA at very young ages on breast cancer risk?
3. The introduction should be written more clearly towards the primary study goal
4. Since information on potential confounding factors was only collected at enrollment (for example alcohol use), residual confounding could have affected the results.
5. Limitation of this study is the low number of women with very low PA levels at young ages (and subsequently the low number of cases in this group)
6. The conclusion should be rephrased (not clear).

Minor issues:
1. Background. Studies on the association between PA..............mainly based on recreational or leisure PA [8,16-20]. This sentence is very long and not clear.
3. Discussion. Page 10. On the contrary, other investigations........with
increasing PA [10]. The authors should rephrase this sentence since it is based on a single study.

4. Discussion. Page 11. There is limited support…..sustained PA over a woman’s lifetime [4,17, 51]. The authors should rephrase this very long unclear sentence.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.