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# Comment on "Nuances between sedentary behavior and physical inactivity: cardiometabolic effects and cardiovascular risk"

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Dear Editor,

We were happy to read the ingenious article by Melo et al.[1] entitled "Nuances between sedentary behavior and physical inactivity: cardiometabolic effects and cardiovascular risk," in which they illustrated some nuances between the cardiometabolic effects and the cardiovascular risk of physical inactivity and sedentary behavior. The article provides a valuable insight into different mechanisms of action between physical inactivity and sedentary behavior in cardiometabolic effects and cardiovascular risk. However, from our point of view, there are some problems that need further discussion.

The major problem of this article is that the authors take the metabolic equivalent of task (MET) as the main indicator to distinguish between sedentary behavior and physical inactivity. The authors define the MET value £1.5 as the sedentary behavior and make detailed description when the MET value >1.5. The authors point out that while sedentary, physical activities such as watching TV or using a computer can also be performed. In fact, it is not rigorous to use MET alone as an indicator to distinguish between sedentary behavior and physical inactivity because the main oxygen-consuming organ of human is brain[2]. When brain activity is intensified or tense, oxygen consumption will rise sharply, and it will also bring about increase in MET value. The accurate definition of physical inactivity in this article could be that the body is in a static state, stops all mental activities, and uses a sitting or lying position to keep the body operating at a low oxygen consumption level.

Taking it a step further, the authors' description of physical inactivity is not detailed enough. It is unscientific to distinguish between physical inactivity and physical activity only by the weekly exercise time, as exercise intensity should also be taken into account. For the evaluation of exercise intensity, we recommend the use of heart rate[3,4] when it reaches 120–180 beats per minute. And the frequency of exercise should be guaranteed to be three times a week, where each lasting for 30 min can be considered physical activity. Of course, these indicators need to be further explored by the authors to apply to people of different ages and genders.

Another problem is that the authors use a secondary analysis, but they fail to give the evaluation indicators, i.e., inclusion and exclusion criteria of the references. We suggest that the authors improve the relevant work for readers' reference.

There is another problem worthy of further discussion in this article. Although the authors stratify the age of the subjects as 5–17, 18–64, and 65 years or older, the span of age stratification between 18 and 64 is too large, which may lead to residual confounding. Because human body functions would be weakened with age[5], accompanied by the increasing influence of inflammatory factors, this brings challenges to distinguish the effects of age factors and sedentary behaviors and lack of physical activity on the body. Therefore, we recommend that the authors change and further refine the age of the subjects in order to obtain more accurate and convincing conclusion.

## AUTHORS' CONTRIBUTIONS

**YZ:** Conceptualization, Data curation, Formal Analysis, Methodology, Project administration. **MM, LH:** Conceptualization, Writing – review & editing.

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