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Response to letter by Yang et al. regarding article “Accelerometer-Measured Physical Activity and Sedentary Behavior in Relation to All-Cause Mortality: The Women’s Health Study”

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We thank Yang et al for the comments they made regarding our published article¹ and agree with the points raised. First, regarding follow-up time – the article published was based on follow-up time accrued after accelerometer assessments in the Women’s Health Study and thus, follow-up time was short for this particular analysis (even though follow-up for the parent study^{2–4} is presently >20 years). Participants continue to be followed for various health outcomes and in the future, we will be able to provide more data from longer follow-up times on device-assessed physical activity and sedentary behavior in relation to all-cause mortality, as well as other diseases such as cardiovascular disease, cancer, and type 2 diabetes, which are major causes of mortality in US women.

Second, we agree that confounders are variables related to both exposure and outcome. We had initially submitted our article as a full length article, with details on the distributions of variables related to physical activity. However, the journal requested that the article be shortened to a research letter; hence, these details were removed. Regarding whether particular covariates are confounders or mediators, there are differences of opinion. One way to critically examine this question would be to show the results from models that do not and that do adjust for these covariates. Again, due to the brevity of the research letter, we were unable to show the different models in the published article. We expect to publish these additional details shortly in another venue.

Finally, we agree that more data are needed from studies with device-assessed measures of physical activity and sedentary behavior, in order to examine relations to a wide range of

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Disclosures

None

health outcomes. We fully concur with the recently released 2018 Physical Activity Guidelines Advisory Committee scientific report on future research needs:⁵ “The development of device-based measures of physical activity (pedometers, accelerometers, and other wearables) provides the scientific imperative to begin to explore the relations of all intensities and amounts of physical activity—light- to vigorous-intensity; small to large total amounts. These studies are beginning to appear. Unfortunately, there are not enough studies on the relation of light-intensity physical activity, total physical activity, or step counts per day to provide enough information for meta-analyses to be performed in these areas for the outcomes of interest here. Therefore, this is a major future research need in this area.”

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