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## Factors related to telomere length

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We appreciate the comments by Tasdemir and Oz on our recent paper in *Brain, Behavior & Immunity* (Prather et al., 2015). The question of what is “causing bad sleep” is certainly an important one, and the authors list some of the key culprits (e.g., excess alcohol consumption, caffeine at night, and menopausal symptoms). However, their question is distinctly different from the question addressed in our paper (i.e., what is the relationship between global sleep quality and immune cell telomere length?). Immune cell telomere length was our outcome of interest, while PSQI global sleep quality served as our predictor. Like any careful researcher, before determining whether global sleep quality served as a unique predictor of immune cell telomere length, we first wanted to statistically control for other variables well-known to account for variance in telomere length (i.e., age, race, BMI, sleep apnea risk, and perceived stress). Decisions about covariate adjustment were based on the well-established existing literature. In contrast, the factors proposed by Tasdemir and Oz, while they may influence one’s global sleep quality, have not been consistently or ever associated with telomere length. One exception is tobacco use, which is inconsistently related (Mirabello et al., 2009; Weischer et al., 2014). However, only one participant in our sample reported current tobacco use, which is why it was not included as a covariate in our adjusted models. Therefore, we want to make it clear that the absence of the proposed variables was not an “error in typing the paper.” Interestingly, when we go back to the data, none of the factors raised by Tasdemir and Oz were statistically significantly related to PSQI global sleep quality or age-adjusted immune cell telomere length. All that said, we agree that understanding the contributors to poor sleep, which in turn may affect markers of immune cell aging, is critical as it will illuminate opportunities for targeted interventions.

Documenting a link between poor global sleep quality and accelerated immune cell aging is an important first step.

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