Response to Poor Sleep With Normal Sleep Duration: A Preventive Effect on Incident Hypertension

We thank Dr Kawada1 for his comments on our recent article published in Hypertension2. Dr Kawada1 points out that in previous studies long sleep duration has been associated with cardiovascular risk, whereas in our study poor sleepers with normal sleep duration were somewhat protected from developing hypertension.2 However, these studies differ substantially both in terms of methods and definitions used. In our study, sleep duration was measured objectively, and all subjects were recorded with polysomnography for a fixed time period of 8 hours. The reference group in our study consisted of those individuals without sleep complaints who slept ≥6 hours. In contrast, the studies cited by Dr Kawada1 measured habitual sleep duration with self-reports, used individuals reporting 7 to 8 hours of sleep as the reference group, and defined those reporting <6 hours and ≥79 hours of sleep as short and long sleepers, respectively. In population-based samples, self-reports of habitual sleep duration moderately correlate with objectively measured sleep but are biased by systematic overreporting3; therefore, the findings of these studies cannot be directly compared. Nevertheless, we tested whether the squared and cubic terms of objective sleep duration, treated as a continuous variable, showed a significant association with incident hypertension. We did not find a significant deviation from a linear relationship and, hence, no evidence of a U-shaped relationship between sleep duration and incident hypertension, a finding that is consistent with a previous study using objective sleep measures.4 Based on these further analyses, we are not surprised that poor sleep with normal sleep duration is not associated with an increased risk of hypertension. Whether the combination of poor sleep and normal sleep duration protects from developing hypertension requires further study, including testing at multiple follow-ups.

Another interesting issue raised by Dr Kawada1 is whether poor sleepers with normal sleep duration may change in sleep status over time and eventually be at risk for cardiovascular morbidity. In a previous study, we showed that ≥17% of poor sleepers become chronic insomniacs and that objective short sleep duration is a predictor of the development of full-blown chronic insomnia among poor sleepers3; thus, it is unlikely that poor sleepers with normal sleep duration will become over time chronic insomniacs with short sleep duration. These findings further support that objective short sleep duration is a biological marker that predicts both the severity2 and the natural course of the disorder.5,6

We agree with Dr Kawada1 that the use of polysomnographic measures provides strong validity for the findings reported in our study and that future longitudinal studies using longer and multiple follow-ups should further examine the relationship among the natural history of insomnia, objective sleep duration, and cardiovascular risk.

Sources of Funding
This research is funded in part by the National Institutes of Health grants RO1 51931, RO1 40916, and RO1 64415.

Disclosures
None.

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Hypertension. 2013;61:e12; originally published online December 24, 2012; doi: 10.1161/HYPERTENSIONAHA.111.00444

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In the *Hypertension* article by Fernandez-Mendoza et al (Fernandez-Mendoza J, Vgontzas AN, Bixler EO, Liao D. Response to Poor Sleep With Normal Sleep Duration: A Preventive Effect on Incident Hypertension. *Hypertension*. 2013;61:e12), a correction was needed.

Not all of the authors were listed in this Letter to the Editor response. The complete author listing is as follows:

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This correction has been made to the current online version of the article, which is available at http://hyper.ahajournals.org/content/61/2/e12.full.