Published in final edited form as:

J Am Geriatr Soc. 2011 May ; 59(5): 957–958. doi:10.1111/j.1532-5415.2011.03396.x.

Long Sleep a Greater Mortality Risk Than Short Sleep in Older Adults

Shawn D. Youngstedt, PhD^{1,2} and Girardin Jean-Louis, PhD^{3,4}

¹Associate Professor, Department of Exercise Science, University of South Carolina

²Research and Development, WJB Dorn VA Medical Center, Columbia, SC

³Associate Professor, Brooklyn Health Disparities Center, Department of Medicine, SUNY Downstate Medical Center, NY

⁴Sleep Disorders Center, Department of Medicine, SUNY Downstate Medical Center, NY

To the Editor

We commend Mesas et al. for their excellent paper (*JAGS* 58: 1870-1877, 2010),¹ “Sleep Duration and Mortality According to Health Status in Older Adults”. While the sleep field and the popular literature has focused a great deal of attention on the risks of short sleep, the Mesas et al. study is consistent with many other epidemiologic studies which indicate that the mortality and morbidity risks are even greater for long sleep.^{2,3,4} Moreover, as observed before,² Mesas et al. found a greater prevalence of long vs. short sleep. Indeed, the average respondent reported a sleep duration of 8 hr, which was associated with significant mortality, suggesting a greater public health relevance of long sleep vs. short sleep. Other strengths of the report are an inclusion of a representative sample, consideration of combined nocturnal sleeping and daytime napping, and an extensive in-home interview with participants, which allowed more definitive assessment of reported sleep duration and other factors (e.g., current medication use) than is typical in similar studies.

Notwithstanding rapidly accumulating evidence from perhaps 100 studies showing associations of long sleep with mortality/morbidity, discussion of similar studies has typically focused on the mortality/morbidity risks of short sleep, while dismissing the association of long sleep as some sort of artifact.^{5,6} For example, it has been argued that the associations of long sleep with mortality/morbidity are likely to be explained by the opposite direction of putative causality, i.e., morbidity causing long sleep. Contrary to this argument are findings that the associations of long sleep with mortality/morbidity are just as apparent following control for multiple morbidities.² The Mesas et al. study goes one step further in showing that the association with mortality is observed even in samples restricted to apparently healthy individuals at initial assessment. Moreover, our recent research with long sleepers^{7,8} found equal tolerance of chronic sleep restriction in apparently healthy individuals and those with existing morbidities, for whom more adverse effects would be

expected if morbidity were truly the cause of their long sleep. Rather, the participants almost unanimously reported a long history of long sleep, which presumably preceded their morbidity.

Critics of the association of long sleep with mortality have also raised the issue that data are limited to self-reported sleep duration. However, recent studies have shown similar associations of objectively recorded sleep duration with mortality and morbidity.^{9,10}

We agree with Mesas et al. that the risks of long sleep might be related to time-in-bed and poor sleep quality. Studies which have distinguished between time-in-bed and sleep duration have found similar risks associated with these variables.^{9,10}

The authors caution that “21.3% of persons aged 60 and older in Spain sleep at least 10 hours per day”. Moreover, nearly 2/3 of the sample reported 8 hr of sleep, and 8 hr was associated with significant mortality. However, against the current zeitgeist that we are a sleep-deprived society, this point is far from the message that older adults commonly receive.¹¹ The message they hear is that 8 hr of sleep is necessary for health and that they ought to be able to sleep that long.¹¹

This fear might partly explain why older adults often spend more time-in-bed, but sleep less than young adults.^{12,13} We know that excessive time-in-bed can lead to even more sleep fragmentation, which has been associated with morbidity both in epidemiologic studies¹⁴ as well as studies involving experimental induction of the fragmentation.¹⁵

The argument that the long sleep (or long time-in-bed) could not possibly be harmful is becoming more difficult to justify. The Mesas et al. result point to a need for more randomized controlled trials of sleep restriction or extension in older adults.

Acknowledgments

Paper Supported by VA Merit Award (SDY), R01MD004113 (GJL) and R25HL105444 (GDL).

References

1. Mesas A, Lopez-Garcia E, Leon-Munoz LM, et al. Sleep duration and mortality according to health status in older adults. *J Am Geriatr Soc.* 2010; 58:1870–1877. [PubMed: 20840460]
2. Kripke DF, Garfinkel L, Wingard DL, et al. Mortality associated with sleep duration and insomnia. *Arch Gen Psychiatr.* 2002; 59:131–136. [PubMed: 11825133]
3. Youngstedt SD, Kripke DF. Long sleep and mortality: rationale for sleep restriction. *Sleep Med Rev.* 2004; 8:159–174. [PubMed: 15144959]
4. Susuki E, Yorifuji T, Ueshima K, et al. Sleep duration, sleep quality, and cardiovascular disease mortality among the elderly: A population-based cohort study. *Prev Med.* 2009; 49:135–141. [PubMed: 19573557]
5. Stamatakis KA, Punjabi NM. Long sleep duration: a risk to health or a marker of risk? *Sleep Med Rev.* 2007; 11:337–339. [PubMed: 17854737]
6. Knutson KL, Turek FW. The U-shaped association between sleep and health: the 2 peaks do not mean the same thing. *Sleep.* 2007; 29:878–879. [PubMed: 16895253]
7. Zielinski MR, Kline CE, Kripke DF, et al. No effect of 8-week time-in-bed restriction on glucose tolerance in older long sleepers. *J Sleep Res.* 2008; 17:412–419. [PubMed: 18691360]

8. Youngstedt SD, Kline CE, Zielinski MR, et al. Tolerance of chronic 90-minute time-in-bed restriction in older long sleepers. *Sleep*. 2009; 32:1467–1479. [PubMed: 19928386]
9. van den Berg JF, Miedema HM, Tulen JH, et al. Long sleep duration is associated with serum cholesterol in the elderly: the Rotterdam Study. *Psychosom Med*. 2008; 70:1005–1011. [PubMed: 18842743]
10. Kripke DF, Langer RD, Elliott JA, et al. Mortality related to actigraphic long and short sleep. *Sleep Med*. 2011; 12:28–33. [PubMed: 20870457]
11. www.sleepfoundation.org/articles/sleep-topics (accessed 12-22-10).
12. Carskadon MA, Brown ED, Dement WC. Sleep fragmentation in the elderly: relationship to daytime sleep tendency. *Neurobiol Aging*. 1982; 3:321–327. [PubMed: 7170049]
13. Hoch CC, Reynolds CFI, Buysse DJ, et al. Protecting sleep quality in later life: a pilot study of bed restriction and sleep hygiene. *J Gerontol*. 2001; 56B:P52–P59.
14. Horner RL. Autonomic consequences of arousal from sleep: mechanisms and implications. *Sleep*. 1996; 19:S193–S195. [PubMed: 9085508]
15. Stepanski EJ. The effect of sleep fragmentation on daytime function. *Sleep*. 2002; 25:268–276. [PubMed: 12003157]