

How much of your time in bed are you actually asleep?

In general, most people have a pretty good idea about what time they get in bed and what time they get out of bed. Then maybe, they do the math and figure out the total number of hours they were in bed. If someone asks them how they slept last night, they may remember how many hours they were in bed and make a judgement from that number about how well they slept.

For example, last night I was in bed for 8 hours, 22 minutes. That's a fair bit of sleep, but was I asleep for that entire time?

I wasn't that tired when I got in bed, but my wife was, so I decided to go to bed with her. It took me 18 minutes to fall asleep. I spent another 18 minutes lying in bed awake, thinking about what I had to get done today, before getting out of bed and looking at the clock. At 2am our older dog had to go outside. She leisurely smelled everything in sight and finally relieved herself. I was up during that time to let her back in, and I didn't fall back to sleep right away. That cost me another 22 minutes. I had to use the bathroom once and my wife got up early causing the dogs to get up and vacate the bedroom. In addition, I had a couple of awakenings during the night. The trip to the bathroom and awakenings cost me about 30 more minutes of sleep. So, although I was in bed for almost 8 ½ hours, I was only asleep for about 7 hours. On a typical night, I spend about 45 to 60 minutes awake, when I would rather be asleep.

Overall, I had a fairly decent night's sleep. Although my Efficiency sub score was low, I had 1 hour and 55 minutes of Delta sleep, 1 hour and 40 minutes of REM, and I slept for about 7 hours. But I had to invest almost 8 ½ hours of my time to get about 7 hours of good sleep.

Lauderdale and co-authors¹ studied 669 participants with motion sensors. They were 38-50 years old. For the entire sample, mean time in bed was 7.5 hours and mean sleep duration was 6.1 hours. Sleep duration and quality, have significant consequences for health.

Silva and co-authors² studied 2,113 subjects. They found that the mean habitual sleep time (HABTST), morning estimated sleep time (AMTST), and PSG total sleep times (PSGTST) were 422 min, 379 min, and 363 min, respectively. Models adjusting for related demographic factors showed that HABTST and AMTST differ significantly from PSGTST by 61 and 18 minutes, respectively. In essence, these study participants estimate that they normally sleep an hour longer than they did during the night when they were tested with home polysomnography.

Fernandez-Mendoza and co-authors³ had 142 insomniacs and 724 controls undergo a polysomnographic evaluation in addition to psychological testing. Short sleepers, including insomniacs with short sleep time, reported more sleep than they objectively had, although some insomniacs with longer sleep times actually underestimate their sleep time. The additive effect of these two factors resulted in underestimation in sleep time, only in insomniacs with normal sleep duration.

These studies are consistent with my experience, and most people in the general population, even insomniacs with short sleep times. Typical sleepers and insomniacs with more normal sleep time, over-estimate the time they are actually asleep.

What should you take away from this discussion? To get the sleep you need, you need to plan on spending more time in bed than you think. If you want to sleep 7 to 7 ½ hours, plan to be in bed for 8 to 8 ½ hours. Please remember that regularly sleeping less than 6 hours per night leads to substantially higher risks of developing cancer, dementia, cardiovascular disease,

obesity and diabetes, so at a minimum, plan to be in bed for 7 hours or more.

References:

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3. Fernandez-Mendoza J., Calhoun S.L., Bixler E.O., Karataraki M., Liao D., Vela-Bueno A., Jose Ramos-Platon M., (...), Vgontzas A.N. Sleep misperception and chronic insomnia in the general population: Role of objective sleep duration and psychological profiles. (2011) *Psychosomatic Medicine*, 73 (1) , pp. 88-97.