

Hacking Deep Sleep

August 27, 2020

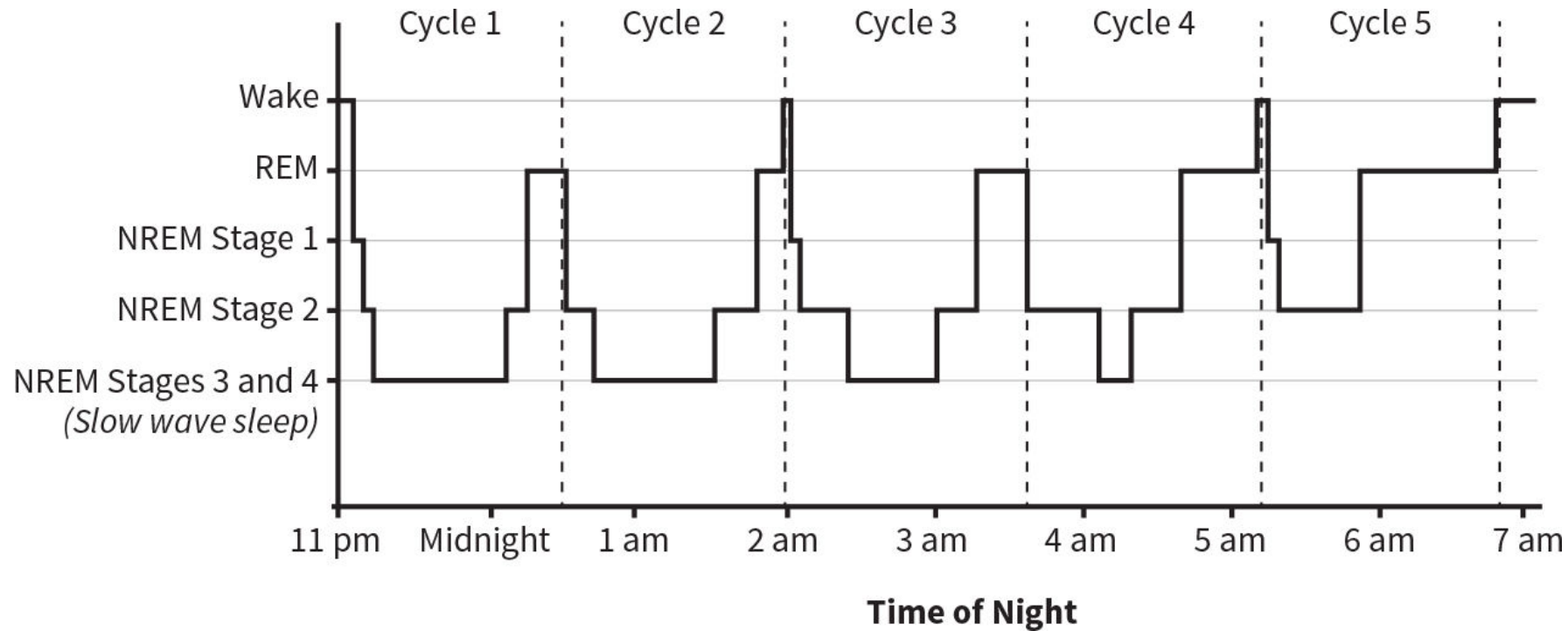
Seattle Quantified Self Show + Tell #44



@sprague



Can I lengthen my deep sleep?



From *Why We Sleep*
by Matthew Walker
(Scribner 2017)

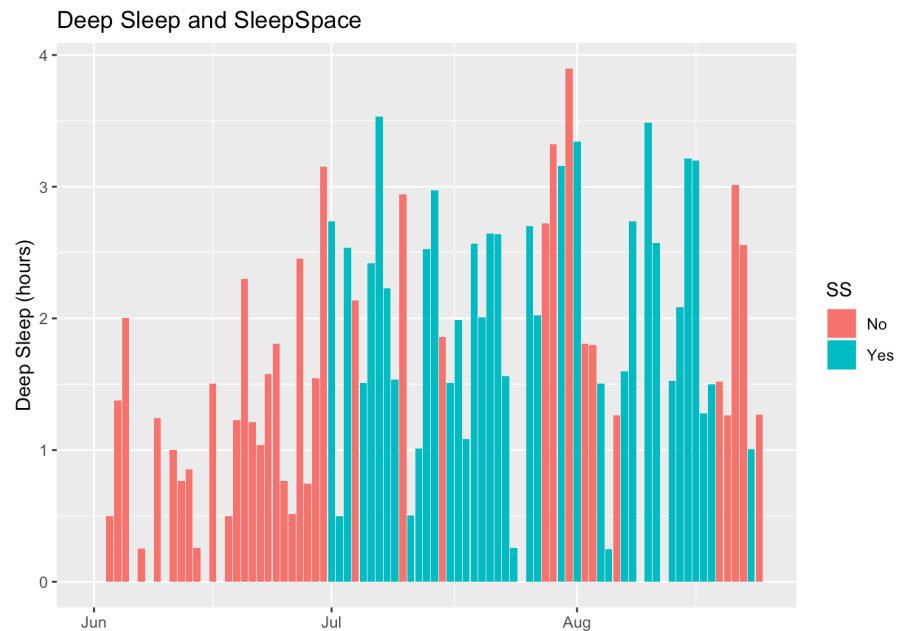
NREM Stage 3 and 4 (N3, N4) Most restorative sleep.

- Associated with brain maturation
- Degrades as we age (drops 60% by age 50)

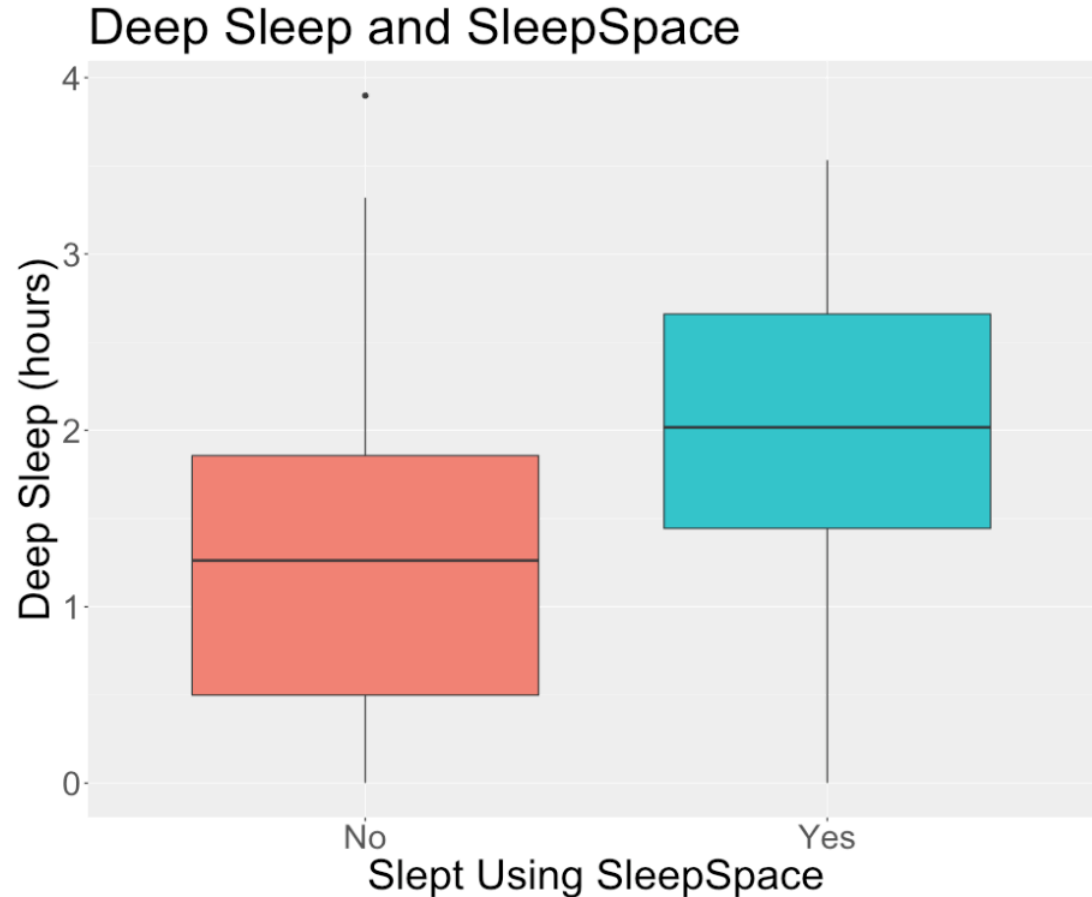


How I did it

- Track my sleep with Apple Watch and AutoSleep
- Sleep with and without the SleepSpace app for 90+ days
- Compare results



Overall My Deep Sleep Improved



SleepSpace	Nights	Deep Sleep (Minutes)	SD
FALSE	45	79.9	62.1
TRUE	40	116.2	60.0

Welch Two Sample t-test

t = 3, df = 82, p-value = 0.008

95 percent confidence interval:

593 3756

sample estimates:

mean of x mean of y

6970 4796

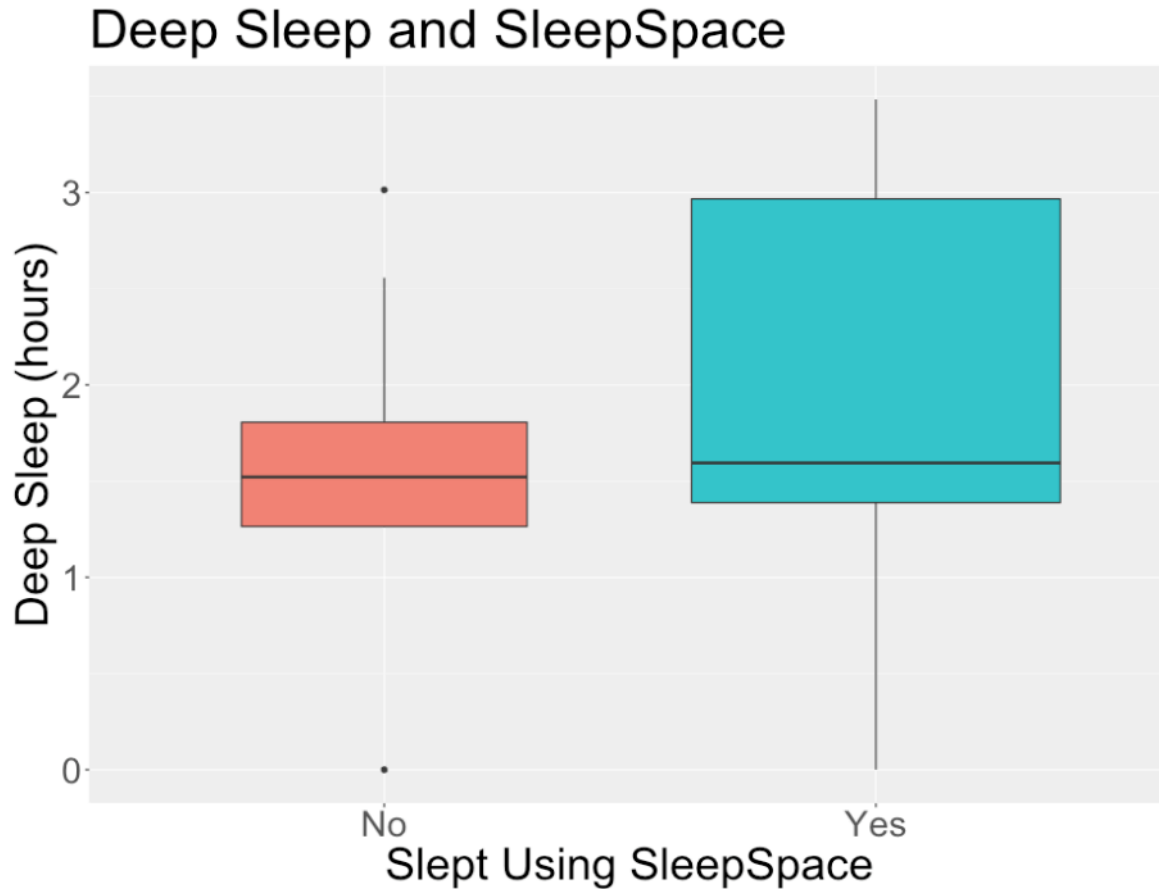


But...

- I was traveling/vacationing a lot during this period
- My wife doesn't like the disturbance, so SleepSpace nights are (usually) alone.
- Volume of the SleepSpace delta wave may be inconsistent.
- Zillions of other factors (diet, bedtime, state of mind, etc.)



Too early to say?



SleepSpace	Nights	Deep Sleep (Minutes)	SD
FALSE	9	96.6	51.5
TRUE	15	117.1	66.6

Welch Two Sample t-test

t = 0.84498, df = 20.372, p-value = 0.4079

95 percent confidence interval:

-1805.925 4270.058

sample estimates:

mean of x mean of y

7028.733 5796.667



Conclusions: What I learned

- SleepSpace app might work (or it might not)
- Sleep length and quality is a multifactor problem



References

- R Source code and description
<https://richardsprague.com/post/2020/08/12/lengthening-my-deep-sleep-with-sleepspace/>
- Schade, M. M., Mathew, G. M., Roberts, D. M., Gartenberg, D., & Buxton, O. M. (2020). Enhancing Slow Oscillations and Increasing N3 Sleep Proportion with Supervised, Non-Phase-Locked Pink Noise and Other Non-Standard Auditory Stimulation During NREM Sleep. *Nature and science of sleep*, 12, 411–429. <https://doi.org/10.2147/NSS.S243204>
- <https://sleepspace.com/> to download the SleepSpace App (\$5/month)
- <http://autosleep.tantsissa.com/> for AutoSleep App (\$4)

