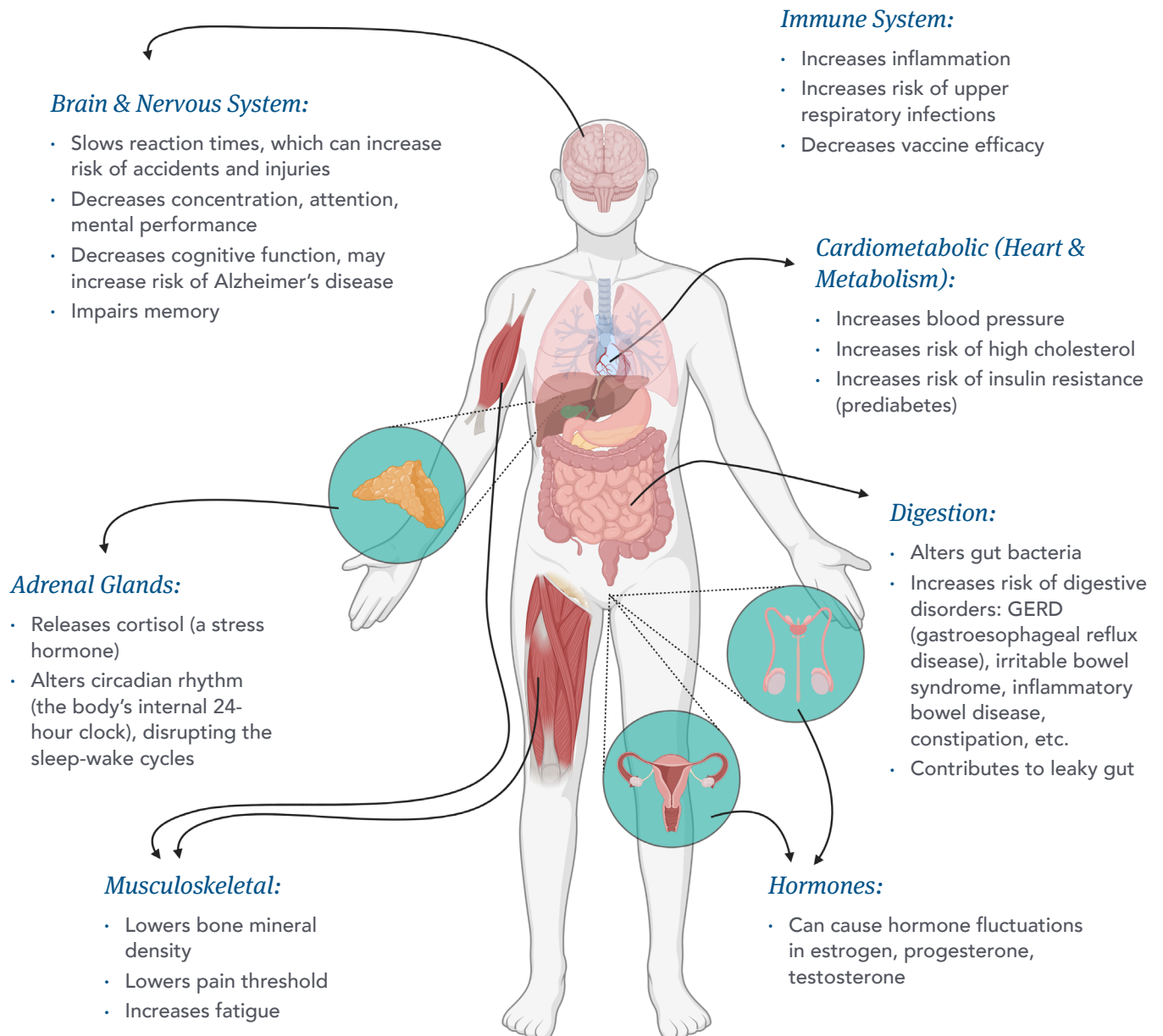


# Effects of Poor Sleep

Sleep is important for maintaining health. For optimal physical, mental, and emotional wellbeing, the **amount** and **quality** of sleep matter. It is recommended that adults get 7-9 hours of sleep a night. However, good quality sleep during those hours is also important, which means falling asleep within 30 minutes of going to bed, minimal waking during the night, and if waking occurs, falling back to sleep within 20 minutes. Poor sleep can have multiple health effects throughout the body.



### *Signs and Symptoms of Poor Sleep*

Mental, emotional, and physical changes can occur when not getting the amount or quality of sleep that the body needs. Poor sleep may also put you at increased risk for chronic health concerns like heart disease, type 2 diabetes, obesity, mental health disorders, and others.

Most people know when they are not getting enough sleep, but it can be harder to know if you are getting quality sleep. Some signs and symptoms of poor sleep may be:

- Snoring, tossing and turning, frequent waking at night
- Daytime sleepiness
- Mood changes, irritability, depression
- Increased appetite, weight gain
- Eyes are puffy or have dark circles
- Getting sick more frequently

### *Contributors to Poor Sleep*

Many factors can contribute to poor quality or not enough sleep. While not always possible, try to limit or avoid the things that can negatively impact your sleep. Some examples are:

- **Age:** over 65, tend to have more trouble sleeping
- **Medical conditions:** depression, anxiety, pain, urinary conditions, etc.
- **Sleep disorders:** insomnia, obstructive sleep apnea, restless leg syndrome, etc.
- **Medications:** some medications can cause changes in sleep; ask your doctor about the medications you take and if they may be impacting your sleep
- **Irregular bedtimes:** changes to schedules, shift work, napping, etc.
- **Temporary situations:** stressors, different sleep environments, jet lag, a new baby, etc.
- **External stimuli:** electronic devices, temperature (too warm or cold), noises, lights, pets, sleep partners, etc.

### *Tips for Improving Sleep*

Having good sleep habits, also called sleep hygiene, can help improve sleep. There is often more than one factor impacting sleep, which means multiple changes may be needed. Consider some or all of these strategies:

- **Consistency:** Have a set bedtime and wake time every day, including weekends. Ensure bed and wake times allow for 7-9 hours of sleep.
- **Create a good sleep atmosphere:** The room should be dark, quiet, free from stimulation, and a cool comfortable temperature. Invest in a comfortable mattress and bedding, including pillows and sheets. Try to remove sources of noise or lessen them with a fan or white noise machine.
- **Have an electronics-free sleep space:** Remove all electronics from the bedroom, including TVs, computers, phones, and other smart devices.
- **Avoid sleep disruptors before bedtime:** Large meals, alcohol, caffeine, or too much fluid intake close to bedtime can delay or impact sleep. Limit bright lights and turn off electronic devices at least 30 minutes before bed.
- **Establish a relaxing wind-down routine:** Reading, warm baths, gentle stretching, meditation, or dimming lights can all help get the body ready for sleep.
- **Get exercise during the day:** Exercise can help with daytime sleepiness and with falling asleep faster at night.
- **Consult a sleep specialist, if needed:** At-home sleep studies are commonly used to help diagnose sleep apnea.
- **Talk with your functional medicine provider:** Functional medicine providers may be able to help recognize and address factors contributing to poor sleep. Supplements or medications may also be helpful for re-establishing healthy sleep patterns.

## REFERENCES

1. Am I Getting Enough Sleep? National Sleep Foundation. Published November 9, 2020. Accessed December 8, 2021. <https://www.thensf.org/recommended-amount-of-sleep/>
2. CDC. Get Enough Sleep. Centers for Disease Control and Prevention. Published April 21, 2021. Accessed December 9, 2021. <https://www.cdc.gov/sleep/features/getting-enough-sleep.html>
3. What Is Sleep Quality? National Sleep Foundation. Published October 28, 2020. Accessed December 9, 2021. <https://www.thensf.org/what-is-sleep-quality/>
4. Ganesan S, Magee M, Stone JE, et al. The impact of shift work on sleep, alertness and performance in healthcare workers. *Sci Rep*. 2019;9:4635. doi:10.1038/s41598-019-40914-x.
5. McHill AW, Hull JT, Wang W, et al. Chronic sleep curtailment, even without extended (>16-h) wakefulness, degrades human vigilance performance. *Proc Natl Acad Sci USA*. 2018;115(23):6070-6075. doi:10.1073/pnas.1706694115.
6. Yu JT, Xu W, Tan CC, et al. Evidence-based prevention of Alzheimer's disease: systematic review and meta-analysis of 243 observational prospective studies and 153 randomised controlled trials. *J Neurol Neurosurg Psychiatry*. 2020;91(11):1201-1209. doi:10.1136/jnnp-2019-321913.
7. Lo JC, Chong PLH, Ganesan S, et al. Sleep deprivation increases formation of false memory. *J Sleep Res*. 2016;25(6):673-682. doi:10.1111/jsr.12436.
8. Haack M, Sanchez E, Mullington JM. Elevated inflammatory markers in response to prolonged sleep restriction are associated with increased pain experience in healthy volunteers. *Sleep*. 2007;30(9):1145-1152.
9. Irwin MR, Opp MR. Sleep health: reciprocal regulation of sleep and innate immunity. *Neuropsychopharmacology*. 2017;42(1):129-155. doi:10.1038/npp.2016.148.
10. Prather AA, Hall M, Fury JM, et al. Sleep and antibody response to hepatitis B vaccination. *Sleep*. 2012;35(8):1063-1069. doi:10.5665/sleep.1990.
11. Prather AA, Janicki-Deverts D, Hall MH, Cohen S. Behaviorally assessed sleep and susceptibility to the common cold. *Sleep*. 2015;38(9):1353-1359. doi:10.5665/sleep.4968.
12. Fobian AD, Elliott L, Louie T. A systematic review of sleep, hypertension, and cardiovascular risk in children and adolescents. *Curr Hypertens Rep*. 2018;20(5):42. doi:10.1007/s11906-018-0841-7.
13. Nadeem R, Singh M, Nida M, et al. Effect of obstructive sleep apnea hypopnea syndrome on lipid profile: a meta-regression analysis. *J Clin Sleep Med*. 2014;10(5):475-489. Published 2014 May 15. doi:10.5664/jcsm.3690.
14. Rao MN, Neylan TC, Grunfeld C, et al. Subchronic sleep restriction causes tissue-specific insulin resistance. *J Clin Endocrinol Metab*. 2015;100(4):1664-1671. doi:10.1210/jc.2014-3911.
15. Spiegel K, Leproult R, Van Cauter E. Impact of sleep debt on metabolic and endocrine function. *Lancet Lond Engl*. 1999;354(9188):1435-1439. doi:10.1016/S0140-6736(99)01376-8.
16. Wright KP, Drake AL, Frey DJ, et al. Influence of sleep deprivation and circadian misalignment on cortisol, inflammatory markers, and cytokine balance. *Brain Behav Immun*. 2015;47:24-34. doi:10.1016/j.bbi.2015.01.004.
17. Benedict C, Vogel H, Jonas W, et al. Gut microbiota and glucometabolic alterations in response to recurrent partial sleep deprivation in normal-weight young individuals. *Mol Metab*. 2016;5(12):1175-1186. doi:10.1016/j.molmet.2016.10.003.
18. Vernia F, Di Ruscio M, Ciccone A, et al. Sleep disorders related to nutrition and digestive diseases: a neglected clinical condition. *Int J Med Sci*. 2021;18(3):593-603. doi:10.7150/ijms.45512.
19. Swanson GR, Burgess HJ. Sleep and circadian hygiene and inflammatory bowel disease. *Gastroenterol Clin North Am*. 2017;46(4):881-893. doi:10.1016/j.gtc.2017.08.014.
20. Ochs-Balcom HM, Hovey KM, Andrews C, et al. Short sleep is associated with low bone mineral density and osteoporosis in the Women's Health Initiative. *J Bone Miner Res*. 2020;35(2):261-268. doi:10.1002/jbmr.3879.
21. Krause AJ, Prather AA, Wager TD, et al. The pain of sleep loss: a brain characterization in humans. *J Neurosci*. 2019;39(12):2291-2300. doi:10.1523/JNEUROSCI.2408-18.2018.
22. Michels KA, Mendola P, Schliep KC, et al. The influences of sleep duration, chronotype, and nightwork on the ovarian cycle. *Chronobiol Int*. 2020;37(2):260-271. doi:10.1080/07420528.2019.1694938.
23. External Factors that Influence Sleep | Healthy Sleep. Accessed December 17, 2021. <https://healthysleep.med.harvard.edu/healthy/science/how/external-factors>
24. Fadzil A. Factors affecting the quality of sleep in children. *Children*. 2021;8(2):122. doi:10.3390/children8020122.
25. CDC - Sleep Hygiene Tips - Sleep and Sleep Disorders. Published February 13, 2019. Accessed December 8, 2021. [https://www.cdc.gov/sleep/about\\_sleep/sleep\\_hygiene.html](https://www.cdc.gov/sleep/about_sleep/sleep_hygiene.html)
26. Four Tips for a Better Night's Sleep. National Sleep Foundation. Published May 13, 2021. Accessed December 8, 2021. <https://www.thensf.org/four-tips-to-improve-sleep-quality/>
27. Troy D. Healthy Sleep Habits. Sleep Education. Accessed December 8, 2021. <https://sleepeducation.org/healthy-sleep/healthy-sleep-habits/>