

Effects of Poor Sleep

Sleep is important for maintaining health. For optimal physical, mental, and emotional wellbeing, the **amount** and **quality** of sleep matters. It is recommended that adults get 7-9 hours of sleep a night.^{1,2} 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.³ Poor sleep can have multiple health effects throughout the body:

Brain & Nervous System:

- Slows reaction times, which can increase risk of accidents and injuries^{4,5}
- Decreases concentration, attention, mental performance⁶⁻⁸
- Decreases cognitive function, may increase risk of dementia and Alzheimer's disease^{9,10}
- Impairs memory^{6,11}
- Increases irritability, moodiness, frustration¹²

Inflammation & Immunity:

- Increases inflammation²⁰
- Increases risk of upper respiratory infections^{21,22}
- Increases risk of developing autoimmune diseases^{23,24}
- Decreases vaccine efficacy^{25,26}

Cardiometabolic (Heart & Metabolism):

- Increases blood pressure^{27,28}
- Increases risk of high cholesterol^{29,30}
- Increases risk of insulin resistance (prediabetes)^{31,32}

Gut Health & Digestion:

- Alters gut bacteria^{33,34}
- Increases risk of digestive disorders: GERD (gastroesophageal reflux disease), irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), constipation, etc.^{35,36}

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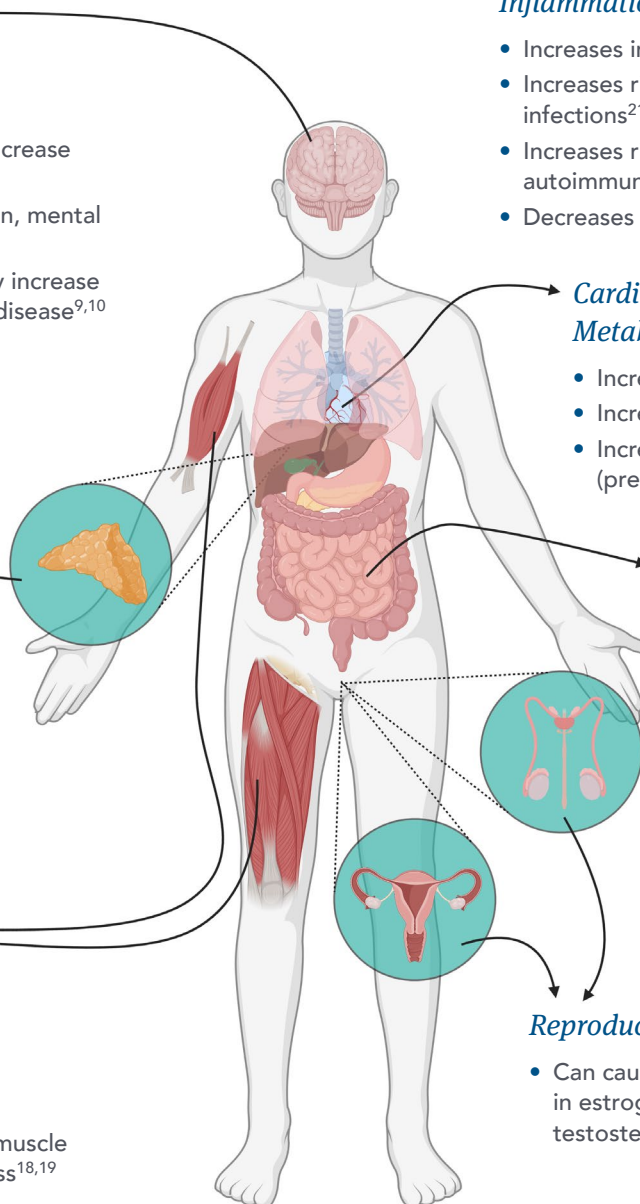
- Can cause hormone fluctuations in estrogen, progesterone, testosterone³⁷⁻⁴⁰

Musculoskeletal:

- Lowers pain threshold^{15,16}
- Increases fatigue¹⁷
- Contributes to decreased muscle mass and increased fat mass^{18,19}

Adrenal Glands:

- Releases cortisol (a stress hormone)¹³
- Alters circadian rhythm (the body's internal 24- hour clock), disrupting the sleep-wake cycles¹⁴



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.^{41,42}

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:^{1,2}

- 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:^{1,5,12,31,42-45}

- **Age:** people 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.⁵
- **Medications:** some medications can cause changes in sleep;³¹ ask your doctor about the medications you take and if they may be impacting your sleep
- **Irregular bedtimes:** changes to schedules, shift work, napping too long or too late in the day, etc.^{5,45}
- **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:^{2,12,45-48}

- **Consistency:** Have a set bedtime and wake time every day, including weekends. Ensure bed and wake times allow for 7-9 hours of sleep.²
- **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:** It can be a good practice to remove all electronics from the bedroom, including TVs, computers, phones, and other smart devices.⁴⁵
- **Avoid sleep disruptors before bedtime:** Large meals, alcohol, caffeine, nicotine, or too much fluid intake close to bedtime can delay or impact sleep.¹² Limit bright lights and turn off electronic devices at least 30 minutes before bed.²
- **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 disorders, including 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.

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