

### Brain Health

Learning about the brain can be scary as there are so many different nooks and crannies involved. Getting adequate sleep every night is crucial for our overall health, and it is just as important to understand what goes on as we sleep. Follow the diagram below and learn more about the brain and what happens inside your head when it hits the pillow every night!

The **thalamus** sends information for the senses to the cerebral cortex. During most stages of sleep, the thalamus stays quiet which allows you tune out the world. It is active during REM, sending the sights, sounds, and sensations we experience in our dreams.<sup>1</sup>

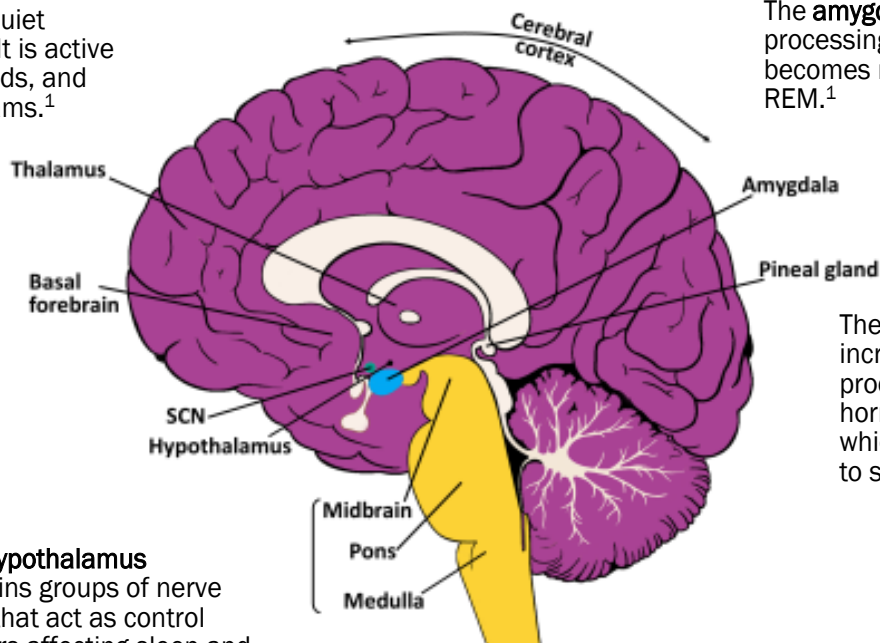
The **basal forebrain** promotes sleep and wakefulness.<sup>1</sup>

The **suprachiasmatic nucleus (SCN)** receives information about light exposure directly from the eyes and control your behavior rhythm.<sup>1</sup>

The **hypothalamus** contains groups of nerve cells that act as control centers affecting sleep and arousal.<sup>1</sup>

The **amygdala** is involved in processing emotions and becomes more active during REM.<sup>1</sup>

The **pineal gland** increases production of the hormone melatonin which helps put you to sleep.<sup>1</sup>



The **brain stem** (includes the pons, medulla, and midbrain) communicates with the hypothalamus to control when you're awake and sleep. The brain stem also has a special role in REM sleep by sending signals to relax your muscles, so we don't act out our dreams.<sup>1</sup>

1 NIH. (2023) Brain Basics: Understanding Sleep. National Institute of Neurological Disorders and Stroke. Retrieved from Brain Basics: Understanding Sleep | National Institute of Neurological Disorders and Stroke (nih.gov)

## Now that we got all the science out of the way. Check out these sleepy facts and share them with a friend, neighbor, or colleague and show off your smarts!

**Adults do need more sleep as they get older.<sup>2</sup>**



It's a common misconception that as you get older you need less sleep. Older adults still need the same amount of sleep as they did when they were younger adults, but sleep quality tends to get worse as you age.<sup>2</sup>

**Unfortunately, you cannot “catch up” on your days off.<sup>2</sup>**



Researchers are finding that this is a sad truth. If you have one bad night's sleep and take a nap or sleep longer the next night, then that might benefit you. However, if you have a week or more worth of not getting enough sleep then a weekend of “catching up” is just not enough for you to feel well rested.<sup>2</sup>

**Brain size does not determine intelligence.<sup>3</sup>**



In fact, Albert Einstein's brain weighed less than the average brain. However, his brain did show some dense connections between brain areas.<sup>3</sup>

**The brain is not good at multitasking.<sup>3</sup>**



Yes, it can multitask within your body such as regulating blood pressure and breathing but these are involuntary tasks that your brain does on autopilot. When it comes to voluntary multitasking such as juggling more than one project, the brain cannot attend to two or more attention-rich stimuli at the same time.<sup>3</sup>

1. NIH. (2023) Brain Basics: Understanding Sleep. National Institute of Neurological Disorders and Stroke. Retrieved from Brain Basics: Understanding Sleep | National Institute of Neurological Disorders and Stroke (nih.gov)
2. NIH. (2021). Good Sleep for Good Health Get the Rest You Need. NIH News in Health. Retrieved from Good Sleep for Good Health | NIH News in Health
3. Dana Foundation. (n.d). Truth of Myth Flash Cards. Retrieved from [https://dana.org/wp-content/uploads/2020/11/Truth-or-Myth-Flash-Cards\\_Printable-Version\\_Color.pdf](https://dana.org/wp-content/uploads/2020/11/Truth-or-Myth-Flash-Cards_Printable-Version_Color.pdf)

Got questions on other health issues related to sleep health, physical activity, tobacco, or nutrition? Send your questions to [usaf.jbsa.afmsa.mbx.hpo@mail.mil](mailto:usaf.jbsa.afmsa.mbx.hpo@mail.mil). For more online health tips visit the Air Force Health Promotion webpage <https://www.airforcemedicine.af.mil/Resources/Health-Promotion/>



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