

MIND BREW

Office of Student Success

Zzzzs get degrees: How sleep enhances learning.

THE LEARNING SPECIALIST TEAM

We have all been there after a bad night of sleep. You feel groggy, irritated, and can't seem to concentrate on anything.

It is apparent what lack of sleep can do to our memory. We are unable to concentrate on tasks, making it less likely that we will commit items to long term memory storage. Learning is impaired by sleep deprivation particularly when the task entails new information or behavioral strategies (Maquet, 2001).

But what does sleep do to actually improve our learning or memory? Studies have demonstrated that neural pathways are reactivated during sleep (Maquet 2001). During sleep, the neural pathways that were developed when processing new information are strengthened. This allows for more plasticity for those pathways.

Memory consolidation during sleep not only involves strengthening of neural pathways, but also pruning of neural pathways that are no longer useful. Sleep is constantly adapting our neural pathways to enhance and aids in recall for declarative memory (Gais et al., 2006).

Even if we know the consequences of not getting enough sleep or the benefits of good sleep, many of us lack getting consistently good sleep. However, there are methods demonstrated by science that can help promote a good sleep routine.

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"Sleep is the best meditation."

DALAI LAMA



Steps For Better Sleep According to Sleep Research (Mayo Clinic, 2020):

- Stick to a consistent sleep schedule
 - Set aside no more than 8 hours
 - Go to bed and get up at the same times consistently
- Create a restful environment
 - Limit exposure to light emitting screens
 - Incorporate calming activities into your sleep routine
- Limit long daytime naps
 - Ensure that you limit naps to no more than 30 minutes during the day
 - Avoid naps later in the day
- Manage Worries
 - Try to resolve your worries or concerns before bedtime.
 - Jot down what's on your mind and then set it aside for tomorrow.

Remember, these are just a few of the scientifically backed strategies you can enact on your own to facilitate better sleep. Getting into a consistent routine may take time and additional assistance.

For more strategies and tips, please email your assigned learning specialist.

References

- Gais, S., Lucas, B., & Born, J. (2006). Sleep after learning aids memory recall. *Learning & memory*, 13(3), 259-262.
- Maquet, P. (2001). The role of sleep in learning and memory. *science*, 294(5544), 1048-1052.
- Mayo Foundation for Medical Education and Research. (2020). 6 steps to better sleep. Mayo Clinic. <https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/sleep/art-20048379>

Cognitive Science in Media

Science of Slumber: How Sleep Affects Your Memory (NPR Radio)



Master Your Sleep (Huberman Lab Podcast)



Check out our brand new Office of Student Success Podcast Mind Brew! Episode 3: Sleep and Learning

