



Hi graduate friends,

I'm sure you've always heard that it's important to be well-rested and have enough sleep. But too often I hear students cut their sleep short to be able to study and do more work. If you also do that, or think about doing it often, let me tell you a bit about the relationship between learning and sleep.

**Sleeping before learning:** Yoo et al. (2007) showed a series of picture slides to a group of sleep deprived and not sleep deprived participants. Days later, after everyone had been able to sleep, all participants were tested on the slides and the sleep deprived group's memory performance was significantly worse. This study shows how just one sleepless night can potentially take away a lot of your brain's ability to form new memories.

**Sleeping after learning:** Research shows that sleeping after learning helps consolidate your learning, meaning it helps move info from short-term memory to long-term memory (Walker & Stickgold, 2006). However, sleep doesn't help you retain everything equally. It's biased towards emotional and relevant or importantly-perceived information (Stickgold & Walker, 2013). E.g., in a study by Walker (2008), participants were able to better remember positive and negative words as opposed to neutral ones after sleeping. This study also provides another example for biased memory retention by explaining that we may better remember the word pair "dog-bone" as opposed to "dog-leaf" because in dog-bone, the learning task includes building on and strengthening already-formed associations (dog and bone), while dog-leaf involves creating and retaining completely new associations.



So, what does this all mean for you? First, it's crucial for you to be well-rested if you want to use your brain's power to take in new information. Second, when you're learning, try to learn with a positive mindset (fake some excitement for bonus marks!) and make every effort you can to link the new information to your previous knowledge and experience (e.g., you can write reflective and/or reflexive journals, draw mind maps, discuss concepts with peers, etc.). Third, make sure you get a good night's sleep afterwards.



Sleep tight everyone!

Best,



Najmeh Keyhani (she/her/hers), PhD, from your [Learning Development & Success team!](#)

**Reference:**

Stickgold, R., & Walker, M. P. (2013). Sleep-dependent memory triage: Evolving generalization through selective processing. *Nature Neuroscience*, 16(2), 139–145.  
Walker, M. P. (2008). Cognitive consequences of sleep and sleep loss. *Sleep Medicine*, 9, S29–S34.  
Walker, M. P., & Stickgold, R. (2006). Sleep, memory, and plasticity. *Annu. Rev. Psychol.*, 57, 139–166.  
Yoo, S.-S., Hu, P. T., Gujar, N., Jolesz, F. A., & Walker, M. P. (2007). A deficit in the ability to form new human memories without sleep. *Nature Neuroscience*, 10(3), 385–392.

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