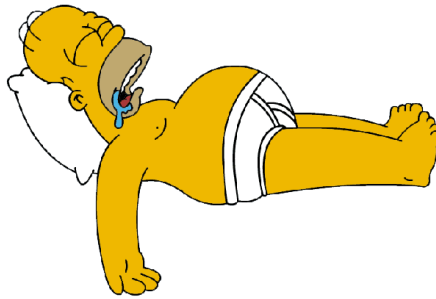




Study Tip # 23: Sleep, Memory & Learning

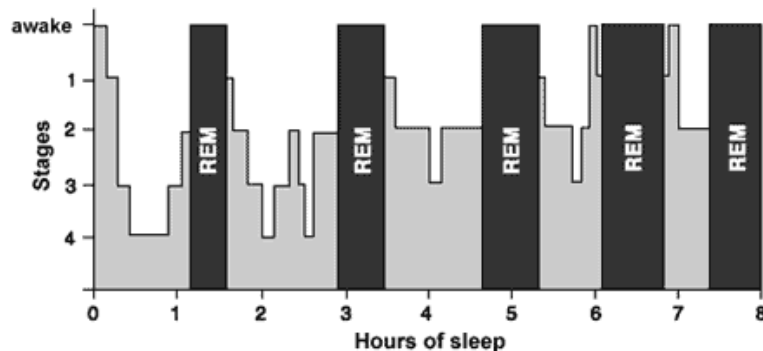


- During the night, your sleep follows a predictable pattern, moving back and forth between deep restorative sleep (deep sleep) and more alert stages and dreaming (REM sleep).

REM sleep = Rapid Eye Movement. This sleep replenishes the mind.

NREM sleep = Non-rapid Eye Movement. This sleep replenishes the body.

- Together, the stages of REM and non-REM sleep form a complete sleep cycle. Each cycle typically lasts about 90 minutes and repeats four to six times over the course of a night.
- The amount of time you spend in each stage of sleep changes as the night progresses. For example, most deep sleep occurs in the first half of the night. Later in the night, your REM sleep stages become longer.



- During REM sleep, your brain consolidates and processes the information you've learned during the day, forms neural connections that strengthen memory, and replenishes its supply of neurotransmitters – making it easier and faster to remember facts when studying.

Adequate sleep is therefore crucial for the memory storage/building process. The more REM stages per sleep cycle, the greater the amount of information that is stored in long-term memory.

How much sleep do teenagers need?

Most teenagers require 9.25 hours of sleep each day (which gives 5 complete REM cycles) to meet the demands of development and learning.

- Aim for at least 9 hours per night during high stress periods and when preparing for tests and exams.
- Get at least 7.5 hours per night when stress levels and study loads are manageable.

Note:

Researchers have discovered that some people have a gene that enables them to do well on six hours of sleep a night. This gene, however, is very rare, appearing in less than 3% of the population.

- Sleep experts at the Woolcock Institute of Medical Research have found that one-fifth of Australian teens don't get enough sleep on school nights. This has significant effects on concentration levels as well as learning efficiency. Further effects of insufficient sleep include:
 - Slower learning rates
 - More mistakes
 - More day time sleepiness
 - More mood imbalances
 - Less effective memory formation
 - Lower grades

- **Are you getting enough sleep?**

If you wake up feeling refreshed, and you don't feel sleepy during the day, you're probably getting enough sleep. If you aren't getting enough deep sleep, your body will sacrifice the length and quality of REM sleep. Therefore, try sleeping an extra 30 minutes to an hour in the morning, when REM sleep stages are longer.

- Studies show that high-performing students tend to take naps. For the ideal power nap, first have a cup of coffee, and then wake up in 10 to 20 minutes when the caffeine kicks in. When engaging in long learning sessions, take a 70 – 100 minute nap, but don't have a cup of coffee immediately before hand.
- It's been scientifically proven that cutting sleep in order to study longer hours actually lowers test and examination marks. Start your exam preparations earlier so you can get to bed on time, especially on days when you've been learning large volumes of new material. You'll remember more the next day, and decrease stress levels as well.

Regards,
TSFX