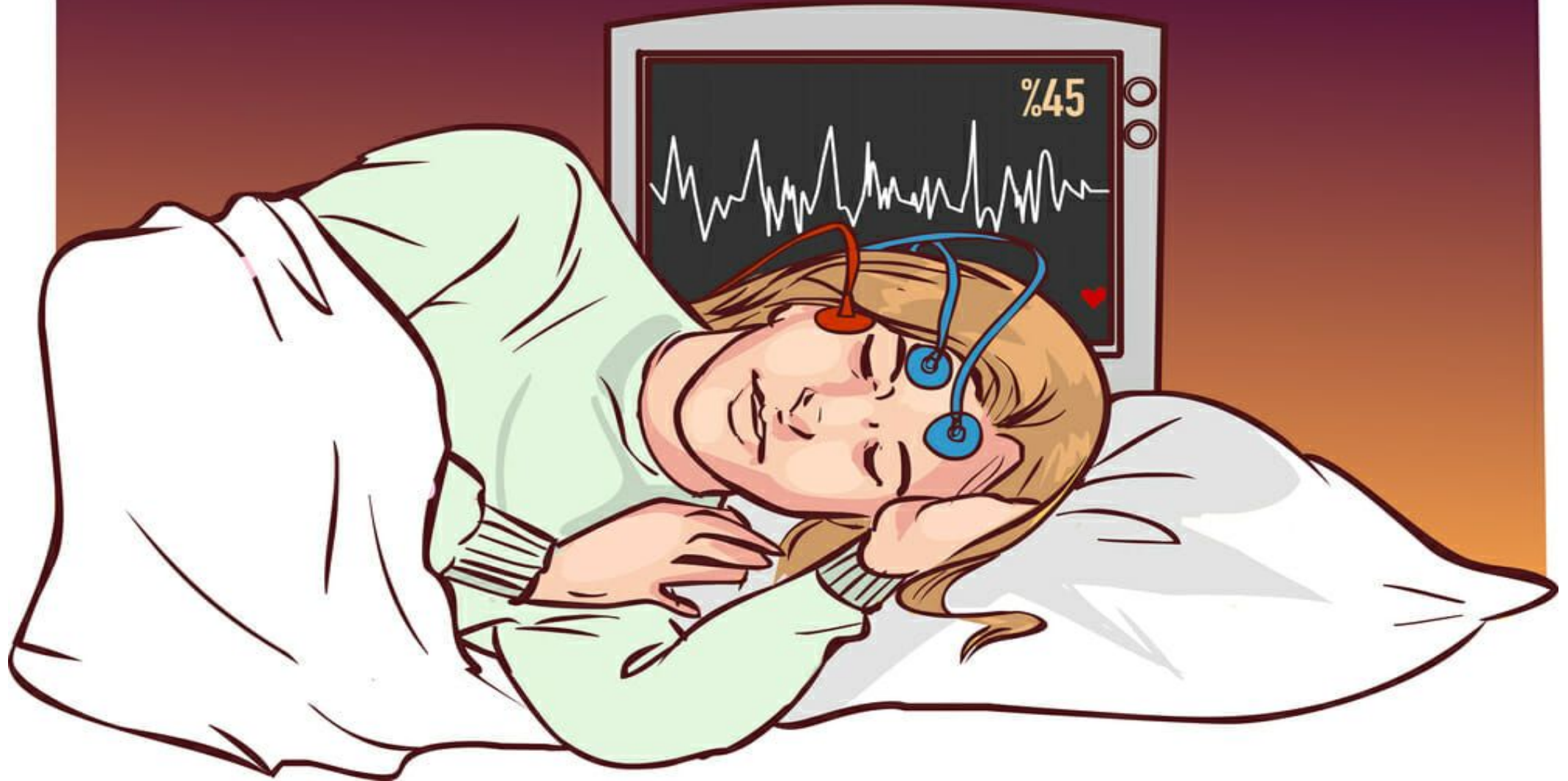


Sleep Cycle



The 4 Stages of Sleep



NREM Stage 1

- transition period between wakefulness and sleep
- lasts around 5 to 10 minutes



NREM Stage 3

- muscles relax
- blood pressure and breathing rate drop
- deepest sleep occurs



NREM Stage 2

- body temperature drops and heart rate begins to slow
- brain begins to produce sleep spindles
- lasts approximately 20 minutes



REM Sleep

- brain becomes more active
- body becomes relaxed and immobilized
- dreams occur
- eyes move rapidly

WHAT HAPPENS WHEN YOU SLEEP



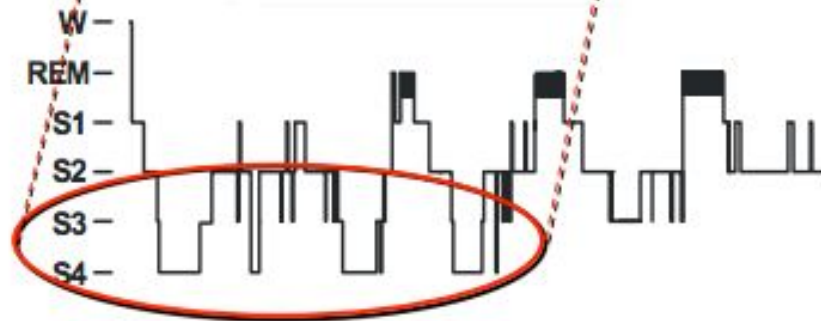
Learning



Consolidation



Retrieval



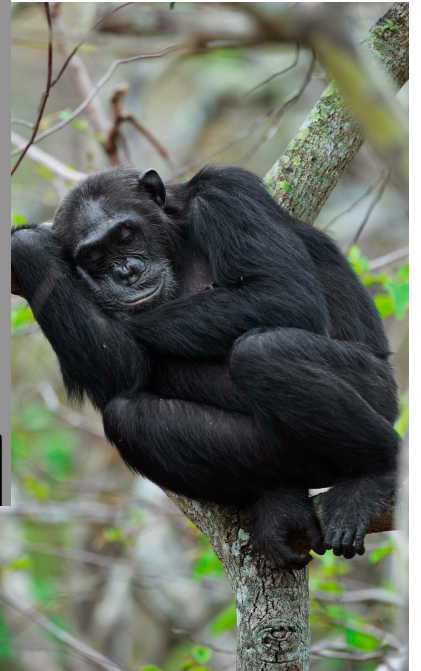
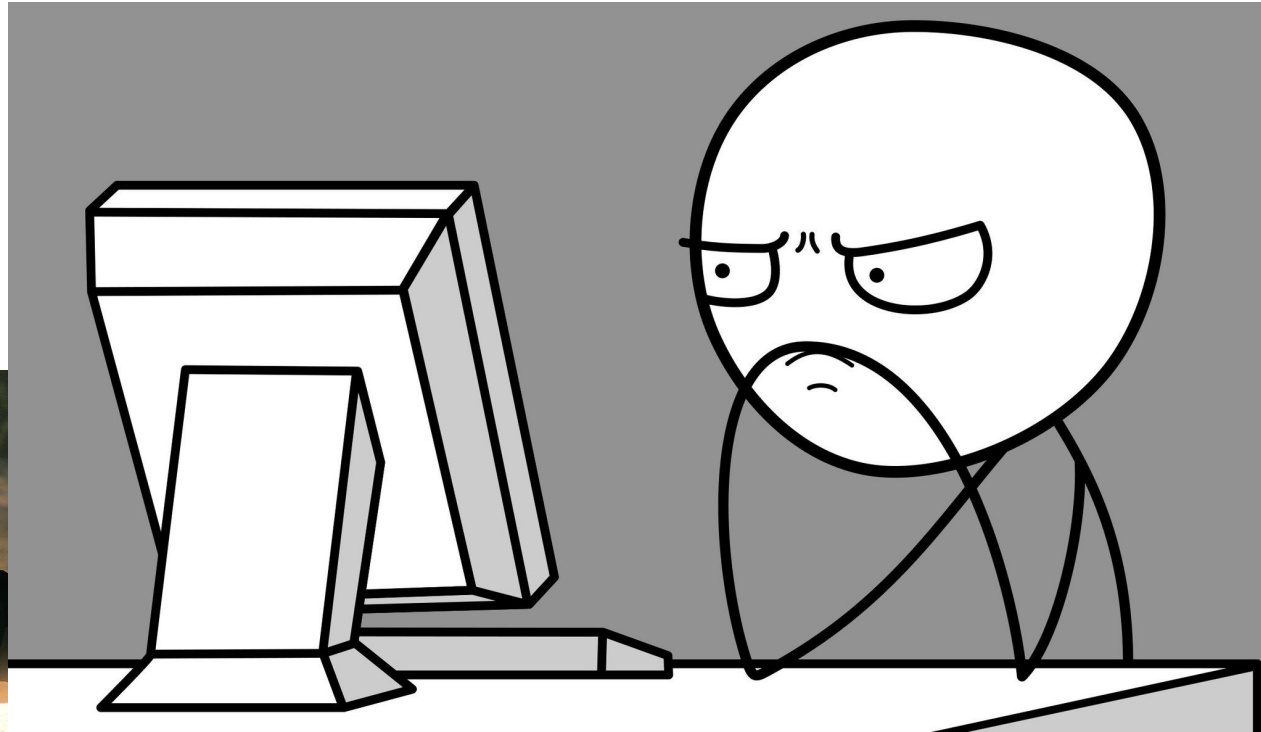
↑ SWS → ↑ consolidation

Boosting SWS boosts memory! – Marshall et al. Nature (2005)

Why 8 hours?

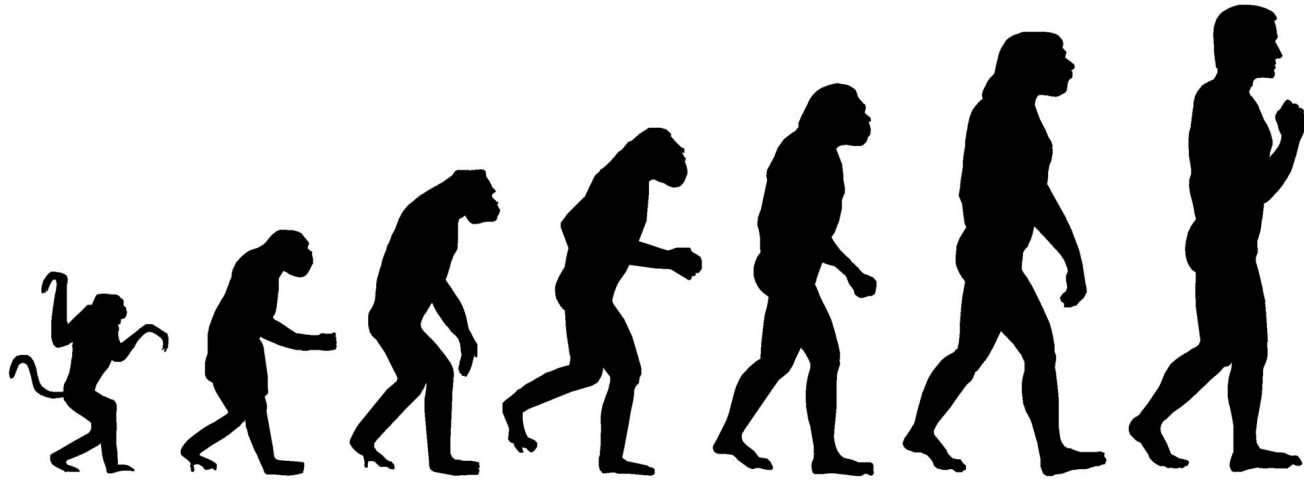


Only 2 hours sleep



17 hours of sleep!

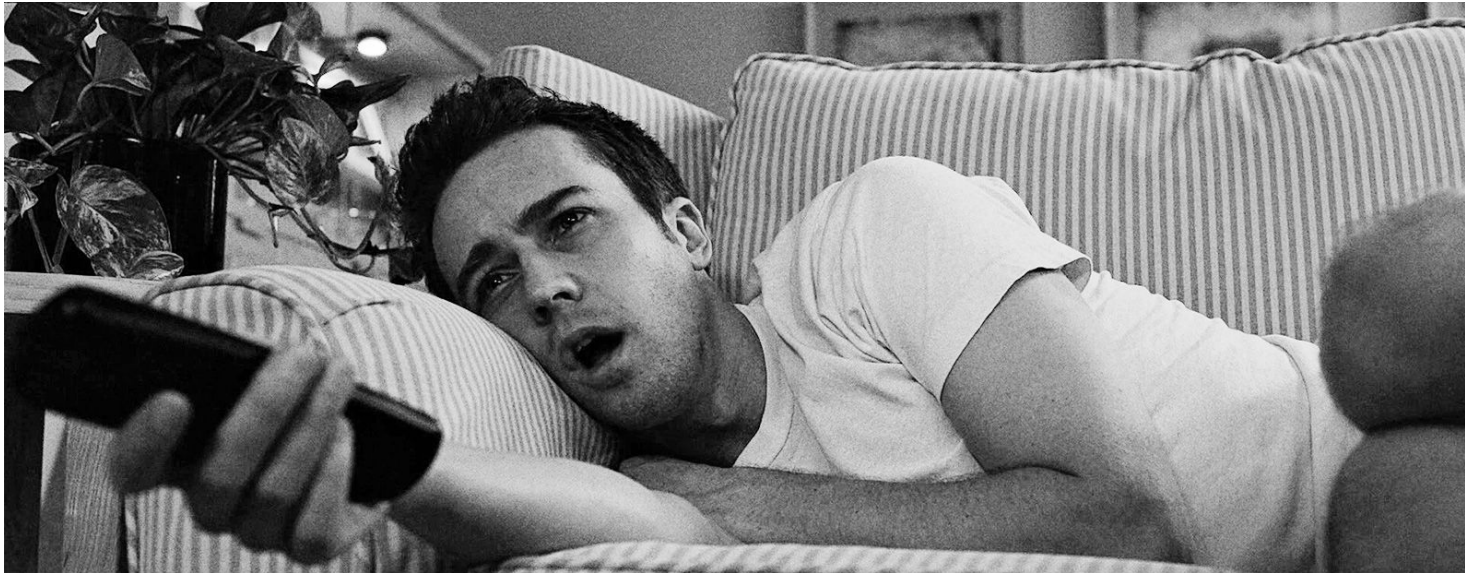
Evolution to blame



Homo sapiens needs less sleep comparing to **Apes (Hominoidea)** because human beings use another strategy for surviving due to ability to walk on 2 legs



Insomnia

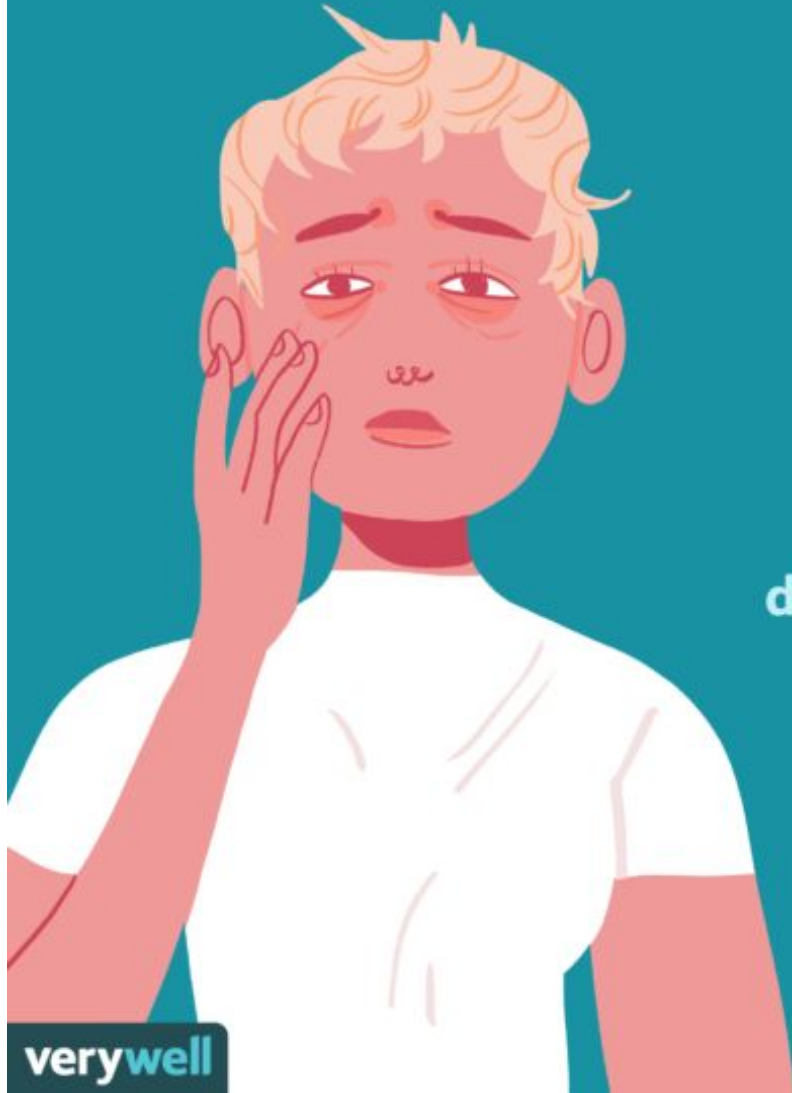


However, there is no certain pathophysiological mechanism of insomnia
There are only some assumptions

Causes of insomnia:

- Physiological stress
- Chronic pain
- Hyperthyroidism
- Heartburn,
- Restless leg syndrome,
- Menopause,
- Certain medications, and drugs such as caffeine, nicotine, and alcohol
- Other risk factors include working night shifts and sleep apnea.

Common Sleep Deprivation Symptoms



fatigue



mood changes



difficulty concentrating



memory problems



paranoia



hallucinations

EFFECTS OF SLEEP DEPRIVATION

MANY PEOPLE CONSIDER SLEEP A WASTE OF TIME AND SEE NOTHING WRONG IN SLEEPING LESS THAN 6 HOURS



RISK OF CANCER

LESS SLEEP >> +100% RISK



OBESITY

LESS SLEEP >> -15,3 LBS PER YEAR



WEAK IMMUNE SYSTEM

LESS SLEEP >> +100% RISK



RISK OF HEART DISEASE

LESS SLEEP >> +100% RISK



INCREASED BLOOD PRESSURE

LESS SLEEP >> +100% RISK



RISK OF DEATH

LESS SLEEP >> +20% RISK



SLEEP IS FOR THE WEAK!