



Sleep and Dreaming

Why do we sleep?

Theory 1:

- it's an evolutionary tool
- protect us from dangers of the night

Why do we sleep?

Theory 2: Physical recuperation

- repair tissue
- rest body
- neuron repair

Why do we sleep?

Theory 3: Work out our problems/memories of the day

- lock in memories

Why do we sleep?

Theory 4: Feed creativity

- sleep promotes thinking/creativity

Why do we sleep?

Theory 5: supports growth

- pituitary gland releases hormones during sleep
- muscles develop

Circadian rhythm

natural rhythm clock

Even if there were no clocks & no windows, your body would still get sleepy around the same time and sleep for about the same amount as usual

Standard sleep cycle (4 steps)

Stage 1: Non-REM sleep

- hallucinations/"jerking" in your sleep
- length of time depends on how long it takes for you to fall asleep

Stage 2: Non-REM sleep (20 min)

- fully asleep
- sleep "spindles" (bursts of rapid brain activity)

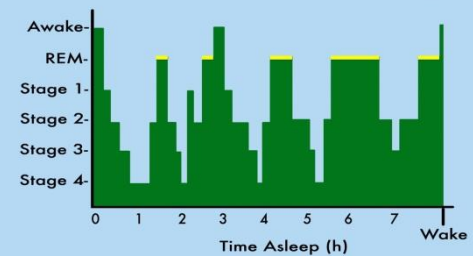
Stage 3: Non-REM sleep (30 min.)

- deep sleep
- hard to wake
- slowed brain activity

Stage 4: REM sleep (10 min)

- almost paralyzed
- active brain

Typical Progression of Sleep Over the Course of the Night



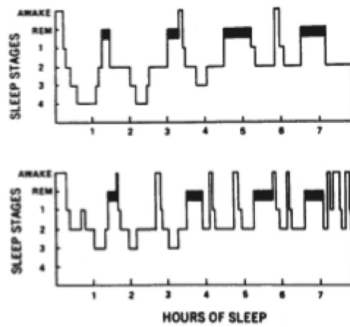
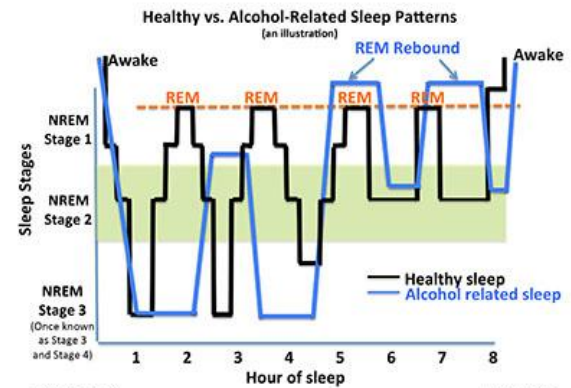


Figure 1.2. Typical Hypnograms for Younger (top) and Older (bottom) Adults
NOTE: Horizontal lines represent time spent in each stage of sleep and vertical lines indicate transitions between sleep stages.



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Effect of Sleep Deprivation

- Increased rates of depression
- Difficulty focusing
- Impairs reasoning/problem solving
- Aging your skin

Sleep Disorders

- Sleep Apnea - a pause in breathing while you sleep
- More common in men and overweight people

[Video: 1:42](#)

Sleep Disorders

Narcolepsy - a sudden intrusion of REM sleep into wakeful time; usually triggered by high emotion

Caused by hormonal imbalance in brain

Affects about 1 in 2000 people (one of most common sleep disorders)

[Video: 5 min.](#)

Sleep Disorders

Cataplexy - showing all signs of narcolepsy except still conscious "inside"

-can hear & feel everything, & if eyes are opened they can see

-but can't respond

[Video: 4:44](#)