Chapters 12: Functions of sleep

Functions of sleep

• Rest and Recuperation
  - Summary of Evidence:
    • Rabbit recovery from illness and SWS
    • White blood cells, Cytokines, and SWS
    • Adenosine and NREM (waste removal)
    • Sleep deprivation effects, recovery sleep
    • Exercise promotes sleep
  - but has weaknesses: why must we sleep for restoration (vs. just rest?)

Functions of sleep

• Behavioral adaptation
  - At night
    • Less productivity (e.g., food and shelter) at night for diurnals
    • Higher chance of injury at night
    • Some diurnal species are less safe at night if awake and out and about
      - Look for predators: "adaptive non-responding"
  - Main weaknesses:
    • Again, why must we sleep? Seems better to stay conscious and still.

Functions of sleep

• Energy conservation
  - Explains (partially) why must sleep vs. just rest: sleep induces a state of lower energy use that may not be compatible with conscious thought.
  - Still does not explain all aspects of sleep (e.g. stages of sleep, particularly REM sleep).
Functions of sleep

- Synaptic stabilization of new learning (i.e., memory consolidation).