

- Reticular formation: part of the midbrain that extends from medulla → forebrain, arousal
- Pontomesencephalon: -part of midbrain that contributes to cortical arousal
 - axons extend to hypothalamus, thalamus, and basal forebrain, which release Ach and glutamate
 - produce excitatory effects all over cortex
 - awakens people, increases wakefulness
- Locus coeruleus -in pons, axons release norepinephrine to increase wakefulness
 - usually dormant while asleep
- Hypothalamus has neurons that release “histamine” (excitatory)
- Antihistamines produce sleepiness
- Orexin- peptide neurotransmitter: -lateral nucleus of hypothalamus, ability to stay awake
 - stimulates Ach-releasing cells in basal forebrain (wakefulness)
- If the pons remains in REM and the other brain areas wake up → inability to move body
- Narcolepsy -suddenly attacks of sleepiness
 - cataplexy: muscle weakness triggered by strong emotions
 - lack of hypothalamic cells that release orexin (a.k.a. hypocretin)
- REM behavior disorder -vigorous movement acting out dreams
 - damage to pons inhibits spinal neurons that control muscle movements)

Hunger

- Weight is maintained homeostatically
- Hypothalamic nuclei involved in weight control
 - VMH (ventromedial hypothalamus) appetite suppressing detector
 - LHA (lateral hypothalamic area) appetite promoting detector
 - ARC (arcuate nucleus)
- Hormonal signal for circulating appetite suppression
- Parabiosis experiments- connecting 2 mice

