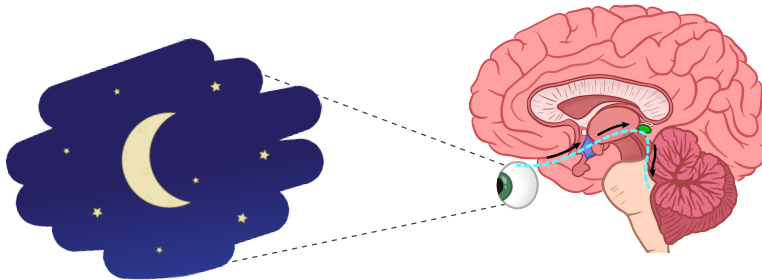
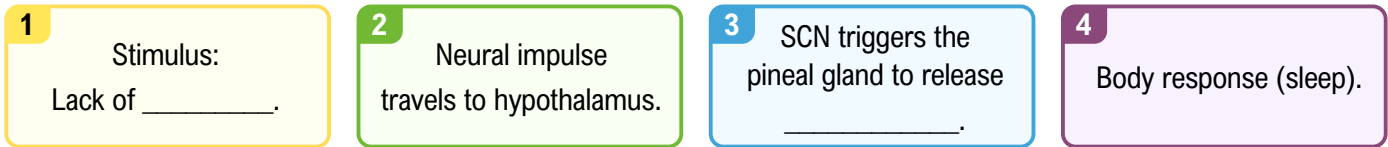


CONCEPT: THE PROCESS OF SLEEP

◆ **Circadian rhythm** is the body's ____-hour biological clock that controls sleep-wake cycles.

- **Suprachiasmatic Nucleus (SCN):** Structure in the ____ thalamus that controls circadian rhythm.
 - Responds to environmental cues; mainly _____.



◆ Changes in environmental cues can cause an _____ circadian rhythm (e.g., jet-lag or working night shifts).

EXAMPLE

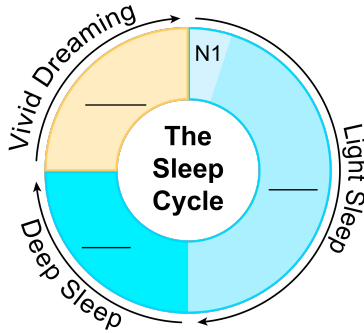
Which part of the brain triggers the release of sleep-inducing hormone melatonin?

- a) Cerebral cortex
- b) Brain stem
- c) Suprachiasmatic nucleus (SCN)
- d) Pons

CONCEPT: THE PROCESS OF SLEEP

Stages of Sleep

- ◆ **Sleep Cycle:** Movement through the different _____ of sleep.
 - Typical cycle length: _____ min.
 - Most people have _____ cycles per night.
- ◆ _____ stages of the **NREM** phase and 1 **REM** phase make up the _____ sleep stages.



1. NREM (non-Rapid Eye Movement)

- _____ % of total sleep.
- _____ sensation, heart rate, and respiration.
- _____ digestion, body stores nutrients.
- Reparative processes in stage _____.

2. REM (Rapid Eye Movement)

- _____ % of total sleep.
- _____ heart rate and respiration.
- Energizes _____ and body.
- REM sleep _____.

EXAMPLE

In which stage of sleep is the human brain the most active?

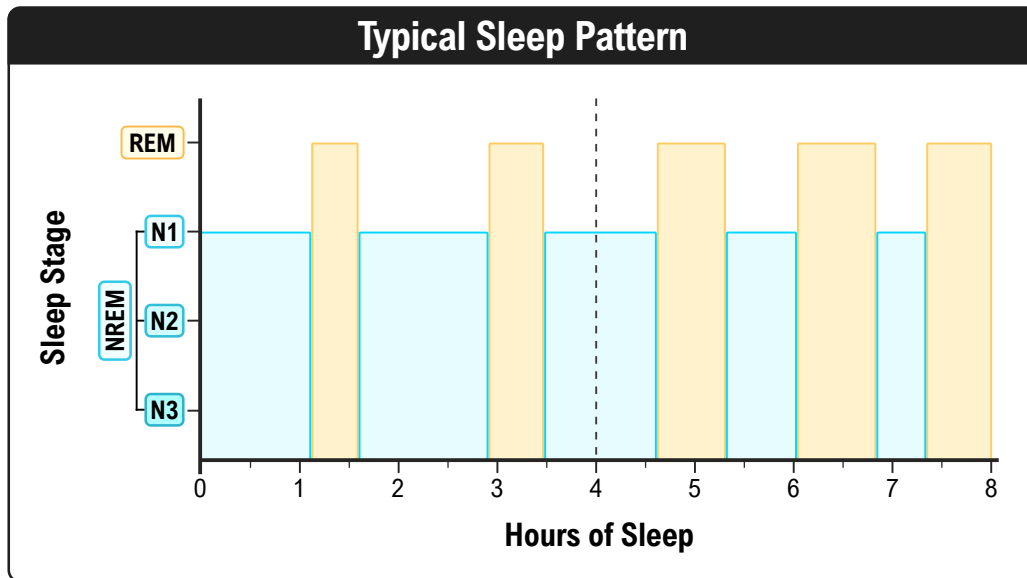
- a) Stage 1 NREM
- b) Stage 2 NREM
- c) Stage 3 NREM
- d) REM Sleep

CONCEPT: THE PROCESS OF SLEEP

Sleep Patterns in a Typical Night

- ▶ NREM cycles are longer in the 1st half of the night.
 - Sleepwalking is ____ common in 1st half.

- ▶ REM cycles become longer in the 2nd half.
 - Dreaming is ____ common in the 2nd half.



◆ **Sleep Debt:** Difference between how much sleep one needs and how much they get.

- ▶ Sleeping for 1-2 hours less → missing 1 cycle
- ▶ Sleep debt can be cumulative.

EXAMPLE

To maintain good health, adults are recommended to get 7 to 9 hours of sleep a night. Nora has been averaging 5.5 hours of sleep a night for the last couple of weeks. What is the minimum amount of sleep debt that Nora might have accumulated?

- a) 28 hours b) 21 hours c) 49 hours d) 35 hours

PRACTICE

Which one of the following statements is incorrect?

- a) People commonly sleepwalk during the first half of their night's sleep.
- b) Growth and repair processes take place during stage 3 NREM sleep.
- c) Vivid dreaming occurs during the REM phase of sleep.
- d) In response to the lack of daylight, SCN stimulates the pineal gland to release melatonin.
- e) During REM sleep all muscle movements are ceased.