

Dietitian CE

Sleep and Circadian Rhythm in Illness

1. Normal sleep architecture consists of stages occurring in cycles of:

- A. 30 - 45 minutes each
 - B. 60 - 90 minutes each
 - C. 90 - 120 minutes each
 - D. 120 - 150 minutes each
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2. Circadian rhythms have a duration of approximately 24 hours and can be assessed through chronobiologic analysis of the time series of all of the following, except:

- A. Melatonin
 - B. Growth hormone
 - C. Cortisol
 - D. Temperature
-

3. Altered circadian rhythm of _____ secretion, reduced expression of Cry-1 and Per-2, and elevated levels of TNF-alpha and IL-6, were seen in patients with sepsis.

- A. Melatonin
 - B. Growth hormone
 - C. Cortisol
 - D. Serotonin
-

4. On a sunny day in early spring, light levels range from 32,000 to 60,000 lux. In the ICU, reported daytime light levels range from mean illumination levels of:

- A. 30 - 165 lux
 - B. 1,000 - 3,000 lux
 - C. 5,000 - 10,000 lux
 - D. 15,000 - 25,000 lux
-

5. Nocturnal light exposure decreases the secretion of melatonin, a hormone secreted by the pineal gland in response to darkness, which can ultimately result in sleep disruption.

- A. True
 - B. False
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6. As per the World Health Organization, ICU sound levels should not exceed _____ A-weighted decibels (dBA).

- A. 10
 - B. 20
 - C. 30
 - D. 40
-

7. Unlike natural sleep that serves an essential biological function, sedation frequently leads to atypical EEG patterns that are not commonly observed in normal sleep.

- A. True
 - B. False
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8. Which GABA agonist has been shown to more closely create natural sleep?

- A. Ethanol
 - B. Benzodiazepines
 - C. Propofol
 - D. Dexmedetomidine
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9. Altered patterns of illumination in the ICU have been found to abolish the physiological regulation of melatonin secretion in response to darkness and light; this pathway is directly linked to the inflammatory response and possibly mortality.

- A. True
 - B. False
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10. Delirium incidence in non-intubated patients was reduced in those:

- A. Taking a daily melatonin supplement.
 - B. Provided with earplugs.
 - C. That were allowed to freely move around during the day.
 - D. Exposed to visible sunlight in their hospital room.
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