The Value of Sleep

Pre-reading

Questions: How valuable is sleep? What would you like to know about sleep?

Definitions: REM – Rapid Eye Movement; a stage in the sleep cycle
Immune – protected from disease
Detrimental – causing great harm
Neurons – the cells that make up nerve tissue

Reading

Although scientists are still trying to learn why people need sleep, animal studies show that sleep is necessary for survival. Rats normally live for two to three years. However, those deprived of REM sleep survive only about five weeks. Rats deprived of all sleep stages live only about three weeks.

Sleep deprived rats also develop low body temperatures and sores on their tails and paws. The sores may develop because the rats’ immune systems become impaired. Studies suggest that lack of sleep affects the immune system in detrimental ways.

Sleep is necessary for our nervous system to work properly. Too little sleep leaves us drowsy and unable to concentrate the next day. It leads to impaired memory and physical performance. Continued sleep deprivation may lead to mood swings.

Some experts believe that sleep gives neurons used while we are awake, a chance to shut down and repair themselves. Without sleep, neurons may become depleted of energy. Sleep may also give the brain a chance to exercise important connections that might otherwise deteriorate from lack of activity.

Deep sleep is a vital time for growth and repair. During the stage of deep sleep, growth hormones are released in children and young adults. Many of the body’s cells also show increased production and reduced breakdown of proteins during deep sleep. Proteins are the building blocks needed for cell growth and repair. The old adage, “I need to get my beauty rest,” may hold some truth. Deep sleep may truly be beauty sleep.

Activity in parts of the brain that control emotions, decision-making processes, and social interactions is drastically reduced during deep sleep. This suggests that deep sleep may help people maintain emotional and social functioning while they are awake.

Deep sleep also appears to help us learn. A study in rats showed that certain nerve signaling patterns which the rats generated during the day were repeated during deep sleep. It has been found that this pattern repetition may help encode memories and improve learning.

Source: National Institute of Neurological Disorders and Stroke, What Does Sleep Do for Us?

Level 6.5
Understanding

1. What two stages of sleep are mentioned? ______________________________________

2. How does sleep help us learn? During which stage of sleep does this occur? ______________

3. How have scientists learned about sleep? ______________________________________

4. What are some benefits of sleep? (List at least three.) ________________________________

5. What does the word *deprive* mean? ______________________________________

6. What are some of the effects of not getting enough sleep? (List at least three.)________

7. What does the word *deplete* mean? ______________________________________

8. Which of the body’s systems are impacted by sleep? ________________________________

Writing

Option A: Summarize the reading in your own words.

Option B: Think about your sleep. Do you think you’re getting enough? Why or why not? How does sleep affect you?

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