

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

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

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

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

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

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

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

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

332 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?
