

Reading Practice

Read the text and underline the best words to complete the sentences.

- a) A **lowered immune system** / **Lack of sleep** / **Sleeping too much** can impair the brain's ability to function.
- b) Some **mammals** / **birds** / **amphibians** don't need to sleep.
- c) Stage two sleep **occurs every 90–110 minutes** / **doesn't last as long as stage one sleep** / **is the deepest sleep**.
- d) During REM sleep, **the whole body is paralyzed** / **the brain rests and regenerates** / **we have dreams**.
- e) The amount of sleep a person needs is influenced by **their body temperature** / **their body rhythms** / **their genetic make-up**.

We spend a third of our lives doing it. And if you don't get enough, your brain will suffer serious effects in its ability to function. Problems linked to a lack of it range from difficulties making decisions, impaired judgment, loss of memory, heart problems, lowered immune system, stress, and weight gain, although too much of it has also been linked to health problems. In scientific terms, it is characterized as a state of suspended sensory and motor activity, during which we are totally or partially unconscious. All mammals do it, and also all birds, many reptiles, amphibians, and fish. It is not only natural, but essential for survival. So, what is it? Sleep.

What actually happens when we sleep? Sleep occurs in recurring cycles of 90–110 minutes, and is further divided into two categories: non-REM and REM sleep. During the first stage of sleep, we're only half asleep. Our muscle activity slows, but we can wake up easily in this stage. Within ten minutes, stage two begins. This lasts around twenty minutes, and our breathing and heart rate slow down. Most of human sleep is made up of the stage two part of the cycle. Stages three and four are deep sleep. During stage three, our brain starts to produce delta waves; a type of wave pattern that is large and slow. Our breathing and heart rate slow down to their slowest levels. If we wake up during these stages, we have difficulty adjusting to our wakened state.

The first rapid eye movement (REM) sleep begins in stage two, around 70 to 90 minutes after we fall asleep. It is usual to have three to five REM episodes each night. During REM sleep, although we are not conscious, the brain is very active, sometimes even more so than when we are awake. We have most of our dreams during this period. Our eyes dart from side to side during REM (hence the name), and our breathing and heart rate speed up. However, we cannot move. Our bodies are effectively paralyzed, maybe as a way of preventing us acting out our dreams! Although scientists don't yet understand the full significance of REM sleep, it is thought it is particularly important for the

developing brain. Children and babies need more sleep than adults, and a newborn baby can spend as long as nine hours a day in REM sleep.

So, how much sleep do we need? Some people, such as Napoleon, famously needed very little sleep; maybe around four hours a night; but for most of us, between five and eleven hours is normal, with the average being around eight hours. The simple answer is that we require enough to prevent us from feeling sleepy during the daytime. Even animals need differing amounts of sleep, ranging from almost sixteen hours for a tiger, and just two hours for a giraffe. Our sleep rhythms are controlled by the circadian clock, the daily cycle of our body's changes. Towards the end of the day, we start to feel drowsy as our body releases the hormone melatonin and our body temperature slowly decreases. Each individual's circadian rhythm is genetic, so sleep patterns and sleep disorders can be inherited.