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A MAN'S LIFE WITHOUT SLEEP

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This work is focused upon the mechanism of sleep in animals, and the ability of people to live without sleep. Is it possible, and what would this life be like? Reducing the amount of sleep could be helpful to the military performing long missions, for example, the US government investigates animals without sleep for military needs, or students taking exams.

Some animals have special mechanisms to reduce or change the sleep process. For instance, migratory songbirds have some daytime sleeps, each of which lasts an average of only 9 seconds. Besides, aquatic animals have a single-hemisphere or asymmetric sleep to remain alert against predators and keep their bodies in a floating position. To change sleep patterns in humans, we can influence hormones and proteins of the nervous system, edit genes, and even cut out some brain structures. But what are the consequences of such an intervention? We decided to turn directly to sleep and waking in people. We found out that the official record is 264 hours. Teenager Randy Gardner changed his mental abilities and behavior: he quickly became angry and sullen, could not focus, and soon he began to hallucinate and paranoia. This experiment had to be interrupted, as it became dangerous to health. Data were found that due to lack of sleep, body temperature drops, cortisol and adrenaline levels increase, insulin levels decrease, vision and hearing deteriorate. Some studies claim that the damage from insomnia is reversible and arises from the stress that the body experiences. A person cannot be deprived of sleep without causing tension in his body.

However, different people tolerate sleep deprivation in different ways. This is influenced by age, health, living conditions, and nutrition. Also, research is still underway in the field of sleep physiology. Sleep arose in the process of evolution, starting with invertebrates. That improves the importance of the process for the functioning and development of living organisms. People, like any other animal, need to sleep. A person spends a third of his life in sleep, and he does not have pronounced mechanisms of long waking.

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