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SLEEP AND ITS EFFECT ON THE HUMAN BODY

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Sleep is a complex, multistage, periodically occurring physiological process, the opposite of the waking state. It is divided into two main phases: rapid and slow sleep.

Classically, the main function of the slow-wave sleep phase is considered to be recovery. Thus, in deep slow sleep there is a maximum level of somatotrophic hormone secretion, replenishment of cellular proteins and ribonucleic acids, formation of macroergic phosphate bonds, and restoration of general and electrolyte homeostasis of brain tissue.

The main functions of the REM (rapid eye movement) sleep phase are to process information from the waking state and create a programme of behaviour for the future.

The Swiss psychiatrist and educator Carl Gustav Jung believed that while awake, the subconsciousness perceives, interprets and learns from events and experiences, and while asleep, communicates this "inner" knowledge to the consciousness through a system of simple visual images.

The Reticular Formation of the central nucleus of the brainstem is the part of the brain responsible for controlling sleep. Neurons in this area of the brain influence the entire central nervous system. By secreting special chemicals called neurotransmitters, it is able to control human states.

Virtually all researchers agree that normal physiological sleep has a crucial anti-stress function, determining the body's full functioning while awake.

It is believed that one of the purposes of sleep is to allow changes to occur in the brain in order to activate learning and memory mechanisms. That is why sleep is so important, in particular for trainees in educational institutions, people whose occupation requires constant attention, concentration and quick decision-making. In addition, scientists have hypothesised that our feelings of physical fatigue are created by the brain due to its unwillingness to continue controlling the body.

Sleeplessness significantly reduces the number of antibodies produced by white blood cells, which leads to a decrease in the body's resistance to infections and worsening of the immune system. Sleep disturbances cause serious illnesses such as obesity, type 2 diabetes, immune system dysfunctions, arterial hypertension and an increased risk of stroke. In addition, lack of sleep reduces memory and attention, affects your emotional state, and impairs your appearance, thereby reducing your ability to work.

The importance of sleep to the vital functions of the organism can be judged by the fact that complete sleep deprivation in humans and animals is much more difficult to endure than starvation, and they soon die (after about 10 days of its complete absence). During this outwardly passive state of inhibition (just outwardly, as at this time active metabolic processes are going on inside the cell), cells of the brain regain their normal composition, gain strength for further active work. However, during sleep, the brain does not rest, but continues to function.