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SIGNIFICANCE OF CHRONORHYTHMS IN REGULATION OF PHYSIOLOGICAL FUNCTIONS OF THE HUMAN ORGANISM

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According to literary sources, human biological rhythms are certain frequencies, which speed and slowdown determine the functioning of organs and systems of the human body, its psychological state.

Doctors know for a long time about the rhythmic organization of individual functions of the body. In healthy people, the rhythms of physiological processes are synchronized both with each other, and with the rhythms of the environment, while the synchronization of biorhythms, the preservation of their phase relations provide optimal conditions for the functioning of the organism and is a sign of health.

Although the modern man has created an artificial temperature environment around him, but the body temperature varies over the course of the day as many years ago, and the body temperature depends on the velocity of biochemical reactions.

By studying the organization of biological systems, the role of the factor of time in the implementation of biological phenomena and the behavior of living systems, nature, conditions of origin and importance of biorhythms for organisms is engaged in biorhythmology. One of the areas of biology - chronobiology - studies biorhythms and mechanisms underlying them. The role of epiphysis and epiphyseal hormone melatonin in daily and seasonal rhythm, the sleep-activity mode is today uncontroversial. There is a hypothesis that melatonin plays a certain role in the discovery of so-called sleep gates, inhibition of activity regimes, and not in direct action on the somnogenic structures of the brain. With age, the activity of the epiphysis decreases, so the amount of melatonin decreases, the sleep becomes superficial and restless. Insomnia and sleep deprivation disappear, there comes a healthy, strong sleep that relieves fatigue and nervousness. During calm, strong sleep the work of all internal organs and systems in the body normalizes, there is a relaxation of the muscles, resting the nervous system, the brain has time to process the information accumulated during the day, because of which the person feels active and healthy.

Secretion of melatonin is subjected to circadian rhythm. The concentration of the hormone in the blood is maximal in the dark, minimal - in the light. At night, its concentration is 5-10 times higher than in the afternoon. Synthesis and activity of the hormone gradually increases after sunset, and the peak concentration is observed at around 3 am at night. The maximum amount of melatonin is synthesized in young people, with age the synthesis gradually decreases until the end of age. Seasonal fluctuations in hormone levels in human blood are also observed.

The purpose of our work is to study the chronorhythms in the regulation of physiological functions of the human body and to analyze the influence of desynchronization.

Analysis of Ukrainian and foreign literature, which highlights the physiological significance of chronorhythms and problems of desynchronization is made.

Analysis of changes in chronorhythms and their inconsistency helps to identify new approaches for diagnosis, prevention and improvement of timelines of therapeutic measures in diseases of various forms of course.

Therefore, the obtained data indicate the influence of the processes of desynchronization on organs and systems of the organism and explain the role of mechanisms of adaptation of the organism to the environment.