

# THE RELATIONSHIP BETWEEN THE CONCENTRATION OF THYROID- STIMULATING HORMONE

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## **Abstract**

Currently, the issue of studying the morpho - functional health of the student body is relevant , since their age is optimal for the realization of reproductive function. The regulation of the morpho-functional functions of the body is carried out by the balanced work of the nervous and humoral mechanisms [7] . The humoral regulation of physiological functions attracts particular interest of many researchers, since for the current ecological situation in our country there is an imbalance of this regulation, which entails various violations, both primary and those that do not allow the body to adapt to changing environmental factors in the future .

## **Keywords:**

Particular, physiology, emotional, system, functions

## **Introduction**

Assessment of the work of the endocrine system is necessary in the physiology of sports in predicting the working capacity and strength characteristics of the skeleton and muscles in connection with seasonal adaptation, biorhythms, the nature of psycho-emotional stress and in other cases, which are accompanied by the activation of the functions of the hypothalamic-pituitary system in the regulation of the adrenal cortex [5 ].

One of the fundamental characteristics of a living organism is the ability to maintain the constancy of the internal environment and

characteristics. Homeostasis is provided by the coordinated activity of numerous mechanisms that are implemented at all levels of the organization - from the molecular to the level of the whole organism. This complex regulatory process is ensured by the coordinated work of the nervous and endocrine systems, in particular the pituitary-thyroid and sympathoadrenal systems.

Of particular importance is the problem of studying the concentration of individual hormones in the blood in conjunction with the constitutional capabilities of the body, in view of the fact that each constitutional type has certain functional capabilities of physiological systems, and hence the specificity in their regulation.

The research was carried out on the basis of the Melitopol State Pedagogical University. It was attended by 98 practically healthy young men - students of the Faculty of Natural Sciences, at the age from 17 to 21 years.

The anthropometric method was used to determine the morphological and functional indicators of the body of young men. Anthropometric measurements were carried out according to the method of B.A. Nikityuk, A.I. Kozlova: a new technique of somatotyping using standard instrumentation [4]. Indicators such as height, weight, shoulder width, chest circumference during inhalation and exhalation, head circumference, as well as longitudinal, transverse, circumferential body dimensions, Quetelet weight-and-height index (IR) were measured. Distribution according to constitutional types was carried out according to the Pignet index of physical development (PI): for hyposthenics (asthenic type) PI was equal to more than 30; for hypersthenics (pycnic type) - PI was less than 10; for normostenics (athletic type) - PI was in the range from 10 to 30.

Thyroid stimulating hormone level measured in the morning on an empty stomach by steadfast th hemilyuministentn th immunoassay as blood using the test systems with the analytical sensitivity and 0.002 mU functional sensitivity on the order of 0.0004 mU / l .

The reliability of the results obtained was determined using the Student's t - test.

For the entire surveyed sample of boys aged 17-21 years, the height indicator was in the range from  $173 \pm 1.6$  cm to  $181.4 \pm 2.3$  cm. It should be noted that the smallest growth was in boys of 17 and 20 years old, its value was

173 ± 1.6 cm and 175.5 ± 1.9 cm, respectively. The maximum height was recorded in guys 18, 19 and 21 years old, its average value was 181.4 ± 2.3 cm.

The body mass index for young men in the surveyed sample was in the range of 65.7 ± 1.8 - 72.2 ± 2.1 kg. The maximum body weight was noted in boys aged 19 to 21 - 81.94 ± 3.5 kg. The minimum body weight was observed in 17-year-old boys - 65.7 ± 1.8 kg.

A significant scatter of morphological parameters in the study sample made it possible to distribute the subjects into three main somatotypes. For boys of the normosthenic somatotype, the average value of the growth rate was 177.6 ± 1.4 cm, and the body weight indicator was 70.14 ± 1.8 kg. Young men of the asthenic somatotype had a height of 176.2 ± 8.6 cm, body weight - 65.67 ± 4.5 kg. The growth of hypersthenic somatotype boys was 173.3 ± 7.6 cm, body weight - 81.94 ± 3.5 kg.

The highest value of the Quetelet index was noted in hypersthenics - 25.85, the lowest in men of the asthenic self-type - 18.97, an intermediate value of this indicator was observed in normostenics - 20.98.

Thus, of the entire surveyed sample of students in the age group 17-21 years old, 17% of young men were attributed to the asthenic somatotype. The normosthenic somatotype was 77%, and the hypersthenic somatotype was 6% of the boys.

We have noted the following age-related dynamics of the TSH content in the blood: the highest level of this hormone was noted in 21-year-old boys and amounted to 3.14 ± 0.35. Its minimum content was observed in males aged 18 years and amounted to 2.16 ± 0.19. At the age of 17, 19 and 20 years, the TSH content in the blood did not differ significantly.

Thus, the maximum content of the hormone TSH was noted in males of the asthenic somatotype, the lowest in the hypersthenic. The indicator of the hormone TSH in normostenics took an intermediate value.

Thus, a comprehensive anthropometric study of the constitutional characteristics of adolescent students made it possible to assess their physique as proportional. The morphological and functional characteristics of the surveyed sample of young men aged 17-21 were characterized by continuous individual variability and

discreteness, which fit into separate individual-typological groups with a predominance of normosthenic and the least common hypersthenic somatotype.

The age-related dynamics of the content of thyroid-stimulating hormone in the blood of young men was noted: the maximum concentration was recorded at the age of 19 years, the minimum at 18 years. The prevalence of TSH was revealed in young men of the asthenic somatotype.

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