

Changes That Occur in the Body of Adolescents During Puberty.

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Abstract:

puberty, Jaxon health organization, clinical and experimental, observations cerebral cortex, hyperplasia, hypertrophy.

Key words: In this article, the changes that occur in the body of adolescents during puberty are widely and comprehensively covered based on scientific evidence.

Introduction

According to the information of the World Health Organization, taking into account the processes of somatic, psychological and social improvement that take place in adulthood, the period of adolescence includes 10-20 years of age, it was reported by experts in 1977. It has been proven on the basis of investigations that the completion of the formation of the human organism, its organs and systems in terms of morphological and functional structure is directly related to changes in the central nervous system, neuro-endocrine sphere, vegetative-nerve, immune system.

Many clinical and experimental observations confirm that the cerebral cortex plays an important role in sexual maturation. During adolescence, the cerebral cortex completes its formation, as well as ensures the creation of new conductive pathways, especially associative communication pathways. The paths connecting the cerebral cortex with the subcortical branch, the ligaments connecting the intermediate brain with the hypophysis are improved. The mass of adenohipophysis doubles and its functional status is activated. The production of somatotropic (STG) and thyrotropin (TTG) hormones by the adenohipophysis increases. Under the influence of STG hormone, there is a rapid increase in the body size of adolescents. On average, their height increases by 8-10 cm per year.

TTG hormone, in turn, increases the activity of the thyroid gland and increases the secretion of thyroid hormones. This, in turn, causes the rapid activation of metabolic processes in the tissues of the adolescent body.

During puberty, the process of sexual maturation stimulates the activation of the hypothalamic-pituitary-germinal system. Activation of the hypothalamus ensures the production of gonadotropic hormones and its cyclical process. Gonadotropin hormones produced by the pituitary gland increase the activity of the sex endocrine glands of boys and girls (ovaries in girls, testicles in boys). These, in turn, increase microcirculation in tissues, accelerate metabolism, ensure hyperplasia and hypertrophy of mucous membranes. Hormonal changes, changes in the tissues that occur in this cause the changes that occur in the mucous membrane of the oral cavity, including periodontal tissues. Estrogen and testosterone play an important role in these processes.

The neuro-endocrine condition that occurs during adolescence also affects the activity of the immune system during this period.¹

Neuro-endocrine changes that occur during adulthood, which cause positive conditions in the immune system, as well as being the cause of many negative conditions, have been found in many investigations and observations.

Especially, the involution of the thymus gland during this period as a result of these changes is considered a great loss in the immune system, and it has been found that this situation leads to a significant decrease in the immunological ability of people in adulthood.

During puberty, the following situations occur that reduce the activity of the thymus and weaken the immune system:

1. Parathyroid hormone - causes atrophy in the thymus, reduces the number of T-lymphocytes and reduces the circulation of the humoral factor of the thymus.

2. Corticosteroids (hormones of the adrenal gland) are the most powerful hormonal factors and reduce lymphoid tissue proliferation and activity. It reduces the sensitivity of lymphocytes to thymogen and steroids, causing their death.

3. Testosterone reduces immune responses by weakening lymphoid tissue activity. The proof of this is that castrated animals have a sharp increase in their immunity.²

In short, changes in the nervous system, hormonal, endocrine, neuro-endocrine, and immunological systems that occur during puberty are physical growth, sexual puberty, and secondary sexual development in the body of a teenager. leads to the formation of organs and other changes that lead to the state of adulthood. At the same time, these changes in most cases decrease the activity of the immunological system, the conditions that ensure the involution of the thymus lead to an increase in the body's reactivity and a decrease in its stability. As a result, people's susceptibility to various diseases increases during adulthood. Including, it is not difficult to clearly observe such a condition in the organs of the oral cavity, especially in the periodontal tissue.

It is not surprising that this situation explains why periodontal diseases make up 60-70% of adolescents.

Among children, local causes cause limited or focal periodontal disease.

Inflammation of the periodontium caused by a common cause is diffuse in most cases.

¹ Harris, R.J. A short-term and long-term comparison of root coverage with an acellular dermal matrix and a subepithelial graft // R.J.Harris // J. Periodontol. 2004. - Vol. 75

² Gaffarov S.A., Rizaev J.A., Jilonov A.A., Sadikova X.K. "Dentistry" Study guide. - Tashkent. Lesson press. 2018y.

Due to the causes, it is local (limited) and diffuse (widespread). Chronic gingivitis is mainly caused by local unpleasant effects. Among the unpleasant effects are microbial plaques, calculus, sharp edges of the cavity of caries, hanging fillings, orthodontic tools, crowns made of metal or plastic, as well as chemicals (arsenic, formalin) used in the dental treatment process.

Diffuse inflammation in a number of diseases of the digestive system (chronic dysentery, hepatitis, cholecystitis, chronic colitis), lack of oxygen in the body (cardiovascular diseases), diseases of the central nervous system, changes in the activity of the endocrine glands in puberty, S occurs in vitamin deficiency and chronic infectious diseases. The described diseases weaken the stability of the body, including the periodontal tissue, against microbes. Therefore, chronic gum inflammation caused by these diseases should be considered as a common symptom, and in its elimination, it is necessary to identify the main disease and apply treatment measures together with local measures.

In case of chronic gingivitis, the patient may not have any complaints. During questioning, we find out that there is an unpleasant taste in the mouth, an unpleasant smell appears, sometimes the gums bleed while chewing food, and there is a noticeable pain.

In such patients, at the beginning of the disease, we see that the gingival papillae are swollen, and later their size increases, signs of hypertrophy appear, sometimes there are signs of swelling and water accumulation in the gum area. The color of the mucous membrane of the milk may not change, but the occurrence of signs of bleeding when the teats are palpated and gently pressed is considered a special point. In such cases, a symptom of vasoparesis (a sharp decrease in the elasticity of the vessel wall) is observed. When pressing on the surface of the inflamed gum with a blunt tool, the mark will disappear very slowly.

In the next - second period of the disease, the swollen and enlarged gingival papillae and coastal mucous membrane become bluish, blood flow decreases. The inflammatory process becomes more acute with the relapse of the main disease.

When chronic transient gingivitis is repeated and aggravated, pain appears in the gums, blood flow increases, the inflamed gum surface swells and reddens, serous exudate increases in the gum pocket. When examined, we can see that the number of epithelial cells migrated by leukocytes in the saliva has increased (Yasinovsky's test) and the time of formation of hematoma (blood clot) at the gum level has decreased (Kulajenko's test). While there is less change in the general condition of the patient, slight discomfort and subfebrile body temperature are noted.