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## **VIOLATION OF THE EXCHANGE OF MICRO AND MACRO ELEMENTS IN CHILDREN WITH DAMAGE TO TOOTH HARD TISSUE**

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**Relevance of the study.** The human organism is formed under the influence of various factors of the internal and external environment, one of which is the state of calcium-phosphorus metabolism, which is considered important. Violation of the structure and function of the organs involved in the regulation of phosphorus-calcium metabolism can be the cause of various diseases that develop during the child's life. The kidneys, on the other hand, are one of the main organs in the regulation of phosphorus-calcium homeostasis in physiological and disease conditions. The main physiological function of the kidneys is to maintain homeostatic parameters of the body. When primary urine is formed in the vascular glomerulus, it includes all trace elements of blood plasma. In proximal tubes, active reabsorption of minerals and water begins. In the early part of their tubes, the absorption of single - valence cations is an active process, and in the last of them-actively and passively.

**Results and analyzes.** Absorption of bivalent cations is an active process. The anions, on the other hand, passively follow the cations. In Distal tubes, 10-20% of filtered cations are absorbed. The process of reabsorption of trace elements is under the control of the nervous and endocrine systems. When the tubes are damaged, the active and passive reabsorption of trace elements from the primary urine is disrupted, which leads to a decrease in their amount in the body. On the other hand, impaired

mineral exchange contributes to the pathogenesis of kidney diseases and forms a kind of "Circle". A number of researchers have found that children with chronic pyelonephritis have impaired levels of elements such as magnesium, zinc, copper, iron. A patient with chronic pyelonephritis has noted a significant increase in zinc clearance and excretion in children compared to healthy children, which indicates an increase in extractor deficiency and a decrease in the ability of neuroscience to kill intracellular microorganisms as well as a stable decrease in the immune system with the development of pathology. In children with a patient with chronic kidney disease, secondary hyperparathyroidism develops in almost all cases. Parathyroid hormone, produced by the parathyroid glands, plays an important role in maintaining normal mineral metabolism and affects the growth and development of teeth, while also being involved in assessing their physiological state. It is mentioned that many authors highlight the parathyroid glands as an intrasecretory organ that controls the exchange of calcium and phosphorus.

Chronic pyelonephritis in children can be associated with various factors, including a violation of the immune system, which causes the development of caries. Since chronic pyelonephritis can cause inflammation and affect overall health, it can lower the body's immunity, which in turn can increase the risk of tooth decay. Studies have found a positive correlation between pyelonephritis and dental caries. With an increase in calcium concentration, the effect of the antidiuretic hormone on the renal ducts decreases, as a result of which water loss increases. The deviation of the amount of calcium in the blood and tissues from the norm leads to the development of not only functional, but also morphological changes in the functioning of many organs and systems of the body, including the development of pathology of mineralized tissues.

Regulation of calcium metabolism at the cellular level is primarily carried out by the action of the parathyroid hormone on the mitochondria. Enhances the processes of tissue respiration and oxidation of pyridine nucleotides in the mitochondria, in addition, increases the absorption of sodium, magnesium, phosphates by these structures. However, the regulation of the concentration of SA ions in the fluid by the parathyroid glands also occurs with the help of another hormone, calcitonin, which

has the opposite effect.

**Conclusion.** It is known that the appearance of the carious process depends primarily on the structural features of the tooth. Tooth hypersensitivity to caries is generally considered to be low in structure-related enamel and dentin. This disadvantage largely depends on mineral exchange, primarily Ca and P levels. In addition, the existing relationship between their composition in the oral fluid and caries may indicate that its mineral composition is also one of the triggers for caries. This is evidenced by the known fact that the lack of Ca and P in water and food is important for the development of caries.

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