EXCELLENCIA
INTERNATIONAL MULTI-DISCIPLINARY JOURNAL OF EDUCATION
Volume 02, Issue 05, 2024 ISSN (E): 2994-9521

Vitamins and Micronutrients and their Role in Human Development

Yunusova Maftunabonu Oybek qizi [1]

[1] Bukhara Innovative Education and Medicine University student

Abstract:

Excess and deficiency of vitamins and micronutrients.

Keywords: Hypovitaminosis, night blindness, micronutrients, rickets.

It is known that vitamins and micronutrients are essential for human health. Some vitamints are synthesized within the body (such as vitamin B, vitamin K and biotin), while others are obtained from external food sources. Both excess and deficiency of these vitamins can lead to various changes and diseases in the body. Partial deficiency of vitamins is called hypovitaminosis.

Vitamin A is essential for growth, immune system maintenance, and vision. The initial signs of vitamin A deficiency include difficulty seeing in low light conditions, also known as night blindness. The reason for inadequate adaptation in the dark is that vitamin A is a component of the retinal visual pigment. Excessive intake of vitamin A leads to hypervitaminosis A, which initiates a series of events such as increased intracranial pressure, bone and joint pain, and liver and hematopoietic organ dysfunction.

Vitamin D is necessary for the normal development and mineralization of the skeleton, especially in children, and for the regeneration of tissues in adults. Vitamin D deficiency in children can lead to rickets, while in adults, it can cause osteomalacia. Rickets is more common in children under 1 year of age. During the onset of the disease, the weight-bearing bones are particularly affected. Symtoms include deformities in the pelvis and chest areas, thickening of the bone cortex, and disruption of tooth formation and eruption. In areas where children start walking, deformities such as kyphosis and scoliosis, and bowing of the legs may occur.

Vitamin K is ingested with food and synthesized in the intestinal microflora. Vitamin K deficiency usually manifests as a tendency to bleed, with severe cases leading to life-threatening events such as epidural, subdural, and gastrointestinal bleeding.

Micronutrients are essential components at all stages of development, participating in vital functions of the body. Most biogenic micronutrients are involved in the composition of enzymes, vitamins, hormones, and respiratory pigments. While insulin is a critical component of hormone production, thyroxine requires iodine.

Main sources of micronutrient delivery to the body include grains and grain products, vegetables, fruits, meat, potatoes, dairy products, and nuts.

Iron participates in the process of blood formation and in the activity of secretory glands. Iron deficiency in the body can lead to growth retardation in children, lethargy, bullous and pustular dermatitis. In adults, this deficiency can lead to ulcerative dermatitis, with the additional possibility of regeneration processes being impaired.

Copper contributes to growth and development, helps in the stabilization of humoral immune reactions, and participates in respiration. Copper deficiency leads to anemia, leukopenia, neurological symtoms, hair becomes brittle, and skeletal shape changes. Excessive copper intake can lead to WILSON'S disease a hereditary disorder affecting the central nervous system, often accompanied by significant changes in the liver, leading to cirrhosis.

Phosphorus deficiency leads to decreased work capacity, cognitive function impairment, irritability, sllep disturbances, and headaches. The daily requirement for this mineral is estimated at 1500mg and is found in abundance in fish, meat, poultry, eggs, and dairy products.

Each of these micronutrients and vitamins performs specific functions in the body and contributes to the maintenance and improvement of organ function. Pay attention to each nutrient you consume for a healthy life.

Sources used:

1. Pathological anatomy:M.S.Abdullokhayeva.
2. Biochemistry:R.A.Sobirova
3. Karimov.Sh.I. Health Nutrition and Health
4. Y.X.To'raqulov.'Molecular Biology""