

CAUSES OF ANEMIA AND MEASURES TO PREVENT IT

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Abstract. *The article discusses the causes of anemia, emphasizes the significance of iron in food, and explores measures to eliminate anemia.*

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Among the micro- and macro-elements essential for normalizing vital processes in the human body, iron holds particular significance. Approximately 57% of the body's iron is contained in hemoglobin within red blood cells, 7% in the form of myoglobin in muscles, 16% in metalloenzymes found in tissues, and the remaining 20% is stored in the liver, spleen, kidneys, and bone marrow. The recommended average daily intake is 10 mg for men and 18 mg for women. Insufficient iron intake in the diet can lead to quick fatigue and weakness, resulting in a deficiency of this vital element in the body. The primary cause of these symptoms is a reduction in hemoglobin, the substance responsible for transporting oxygen and carbon dioxide in the blood, due to iron deficiency. Hemoglobin cannot be produced without an adequate supply of iron and forms the foundation of red blood cells, or erythrocytes. Each erythrocyte contains approximately 250 million hemoglobin molecules, each containing one iron atom.

Erythrocytes are living cells, continuously generated in the bone marrow and typically surviving for 90-120 days before undergoing degradation, mainly in the spleen, during which the iron they contain is released. Hence, a constant intake of iron through dietary sources is necessary for the continual formation of new erythrocytes.

According to the World Health Organization, anemia affects approximately 20% of the global population, with 80% of cases attributed to iron deficiency.

The loss of blood from the body due to various reasons results in a decrease in iron levels. This phenomenon is particularly common in women, often occurring during menstruation, childbirth, and other related events. Therefore, it is crucial to pay special attention to ensuring an adequate intake of this essential substance in the diet of women. As mentioned earlier, their daily iron requirement is twice that of men, amounting to 18 mg. Pregnant and nursing mothers, on the other hand, need an even higher intake, ranging from 33 to 38 mg.

Children born to anemic mothers are more prone to diseases, exhibit capricious behavior, and may have a weakened nervous system. Such children often experience symptoms like headaches, restlessness, hair loss, and thinning. Cases of skin cracking around the mouth edges are also observed.

In specific geographic regions, notably the southern areas of our republic, including Karakalpakstan and Khorezm, a notable and concerning prevalence of anemia among women of childbearing age has been observed. This phenomenon serves as a poignant illustration of the intricate interplay between regional factors and the health challenges faced by a significant portion of the female population in these areas.

The primary contributory factor to the high incidence of anemia in these regions is closely linked to nutritional practices, revealing a complex web of dietary inadequacies. The multifaceted

nature of this issue is illuminated by a dual challenge: the insufficiency of iron content in the consumed food and the inadequacy of iron absorption within the stomach and intestines, even when a seemingly appropriate amount is ingested.

Delving into the nutritional landscape of these regions, it becomes evident that the dietary patterns prevalent among women of childbearing age are characterized by a deficiency in iron-rich food sources. This deficiency can be attributed to both limited availability of iron-rich foods and insufficient awareness regarding the importance of incorporating such foods into their diets. As a result, the foundational need for an adequate daily intake of iron remains unmet, contributing significantly to the heightened prevalence of anemia.

Beyond the challenge of insufficient dietary iron, the absorption of the available iron within the digestive system is hampered by various factors. Despite consuming an ostensibly appropriate amount of iron, the body may not effectively absorb this essential mineral into the bloodstream. One critical element contributing to this dilemma is the insufficient presence of vitamin C, a key facilitator of iron absorption.

Vitamin C acts as a catalyst in enhancing the absorption of non-heme iron (the form of iron found in plant-based foods) from the digestive tract into the bloodstream. Its deficiency in the diet of women in these regions creates a barrier to optimal iron absorption, exacerbating the existing nutritional challenges. The article delves into the crucial role of educating these communities about the significance of vitamin C-rich foods in tandem with iron sources to maximize the bioavailability of this essential mineral.

Furthermore, the intricate dynamics of iron absorption are further complicated by the interference of certain compounds, such as phosphatides, which can exert a negative impact on the assimilation of iron within the body. The presence of phosphatides in the diet of these women may impede the efficient absorption of iron, further perpetuating the cycle of anemia.

This multifactorial perspective sheds light on the intricate challenges faced by women in these regions, emphasizing the need for a comprehensive approach to address anemia. It extends beyond merely increasing the iron content in the diet to encompass nutritional education, raising awareness about the synergistic role of vitamin C, and fostering an understanding of the impact of various dietary components on iron absorption.

Educating the population about micro- and macroelements, including iron, their dietary requirements, and sources, as well as promoting awareness of digestive processes, is crucial. This need is particularly pronounced in rural areas where people may lack knowledge about the mineral content of the products they grow and how to consume them.

A similar situation exists among urban dwellers who often rely on highly refined flour, pastries, sugar, and various desserts in their diet, which are low in iron and may contribute to anemia. It is observed that some girls, aiming for a slim figure, consume minimal amounts of iron in their pursuit of a diet consisting mainly of sweets.

Approximately 10% of the iron derived from various food products is absorbed into the blood. It is noteworthy that iron from animal meat and liver is absorbed more efficiently (10-25%) compared to iron from plant products (1%). Certain nutrients, such as milk, eggs, and bitter tea, may have a negative impact on iron absorption. In our hot climate, green tea is widely consumed for its thirst-quenching properties.

However, it is evident that green tea is often consumed for pleasure, and sometimes even young children indulge in it excessively. In such cases, the absorption of iron from the intestines

decreases from 10-12 percent to 2 percent. Therefore, individuals with low blood sugar are advised to avoid consuming bitter green tea.

The demand for iron significantly increases during pregnancy. Unfortunately, many pregnant women continue their usual eating habits, neglecting the need for iron-rich foods. As a result, 30-70 percent of pregnant mothers develop anemia due to iron deficiency, leading to complications such as miscarriages, premature births, and stillbirths. This issue underscores the importance of organizing a well-balanced diet to address this concern.

To enhance the body's absorption of iron from various food products, it is recommended to include items rich in vitamin C in the diet. For example, consuming egg yolks with parsley, chives, and other greens maximizes the absorption of iron. Fruit juices like grapefruit, orange, and lemon also facilitate iron absorption. Elderly individuals experience slower iron absorption, so their diet should include more vitamin C-rich products. Drinking a cup of “*namatak*” juice daily is beneficial for the elderly.

Iron-rich foods include beef, liver, egg yolk, whole meal bread, wheat bran, cabbage, blackberries, plums, apricots, raisins, walnuts, sunflower and pumpkin seeds, wheatgrass, beans, and peas. The iron content in wheat flour significantly decreases when separated from the bran. For instance, if 1 kg of bran flour contains 30 mg of iron, this figure drops to 8.2 mg after separation. Enriching salads with iron is easily achieved by adding wheat bran. Sugar and molasses are also iron-rich products, along with apples, pears, cherries, strawberries, and strawberries. The use of rock salt in daily food preparation is more beneficial than ordinary table salt, with 1 kg of rock salt containing 450 mg of iron.

Nettle is another plant rich in iron, widely used by doctors in treating anemia. Mixing a small amount of honey with nettle juice satisfies the body's iron needs.

Iron deficiency anemia can lead to various diseases, disrupting the body's balance, reducing gastric juice acidity, and causing atrophy of the mucous membrane in the stomach and intestines. These conditions impair the digestion of carbohydrates, proteins, and fats in consumed food, resulting in decreased appetite, bloating after eating, and a tendency to consume foreign substances like chalk and clay. Consequently, the weakened body, compounded by anemia, necessitates addressing iron deficiency through proper nutrition and appropriate treatments.

In conclusion, the intricate balance of micro- and macro-elements in the human body, with a particular emphasis on the crucial role of iron, underscores the essential nature of maintaining optimal iron levels for overall well-being. The distribution of iron within the body, predominantly in hemoglobin, myoglobin, metalloenzymes, and storage organs, highlights its diverse functions and significance in vital processes.

Insufficient iron intake poses a direct threat, leading to fatigue and weakness due to a reduction in hemoglobin, the cornerstone of red blood cells. The perpetual renewal of erythrocytes, vital for oxygen transport, underscores the perpetual need for a consistent intake of dietary iron. Globally, anemia affects 20% of the population, with a staggering 80% of cases attributed to iron deficiency, especially prevalent in women, particularly during menstruation, childbirth, and related events.

The regional disparities in anemia prevalence, exemplified in southern areas like Karakalpakstan and Khorezm, spotlight the complex interplay of inadequate nutrition, deficient iron content, and absorption challenges. Dietary patterns lacking iron-rich foods coupled with insufficient awareness exacerbate the prevalence of anemia among women of childbearing age.

Challenges in iron absorption, influenced by factors like vitamin C deficiency and the interference of compounds such as phosphatides, add layers to the complexity of the issue.

Addressing this multifaceted challenge requires a comprehensive approach encompassing nutritional education, awareness promotion, and dietary adjustments. The call for education extends to rural areas, where knowledge gaps about mineral content in locally grown products persist, and urban settings where reliance on low-iron diets contributes to anemia, particularly among girls pursuing slim figures.

While iron absorption from various foods varies, emphasizing the role of vitamin C in enhancing absorption becomes crucial. Recommendations for pregnant women, the elderly, and the general population underscore the importance of including vitamin C-rich items in daily diets. A diverse range of iron-rich foods, including meats, vegetables, fruits, and even unconventional sources like nettle, can play a pivotal role in meeting iron requirements.

The consequences of iron deficiency anemia are far-reaching, disrupting the body's balance and impairing digestive processes, leading to a host of health issues. Addressing this complex challenge requires not only dietary adjustments but also proper treatments, emphasizing the critical role of proper nutrition in maintaining a healthy body. In the pursuit of well-being, awareness, education, and informed dietary choices emerge as the key components to break the cycle of anemia and promote holistic health.

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