

## EARLY DETECTION OF IRON DEFICIENCY IN WOMEN OF CHILDREN

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### **Abstract**

This article analyzes the prevalence, main causes, clinical symptoms, and modern laboratory methods for its early detection in women of childbearing age. It is highlighted, based on scientific sources, that early detection of iron deficiency is important for maintaining reproductive health, reducing pregnancy complications, and improving the overall quality of life of women.

### **Keywords**

iron deficiency, anemia, ferritin, reproductive age, women's health, early diagnosis.

**Introduction** Iron deficiency (ID) is the most common micronutrient deficiency in the world. According to the World Health Organization (WHO), latent or overt iron deficiency is detected in a large proportion of women of reproductive age. This condition can be accompanied by a decrease in working capacity, weakened immunity, and serious complications during pregnancy. Therefore, early detection of iron deficiency is an urgent medical and social problem.[1,2,3,4,5]

Biological significance of iron in the body

Iron performs vital functions in the body:

1. supplying oxygen to tissues through hemoglobin synthesis;
2. ensuring muscle function in the composition of myoglobin;
3. participating in the activity of oxidation-reduction enzymes;
4. supporting the immune system and mental activity.

When iron stores are depleted, these processes are disrupted and pathological conditions develop.[6,7,8,9,10,11]

Causes of iron deficiency in women of childbearing age

1. Physiological factors

regular blood loss during menstruation;

increased need for iron during pregnancy;

decreased iron reserves during childbirth and lactation.[12,13,14,15]

## 2. Nutritional factors

insufficient consumption of iron-rich products;

improper or one-sided nutrition;

reduced iron absorption by products such as tea and coffee.[16,17,18,19,20,21]

## 3. Pathological conditions

gastrointestinal diseases;

chronic inflammatory processes;

parasitic infections.

Clinical signs of iron deficiency[22,23,24,25]

Early (latent) stage:

rapid fatigue and weakness;

dizziness;

decreased attention and memory;

hair loss;

brittle nails.[26,27]

Late stage (iron deficiency anemia):

pallor of the skin and mucous membranes;

increased heart rate;

shortness of breath;

a sharp decrease in working capacity.[28,29,30]

Methods for early detection of iron deficiency

Laboratory tests are important in the diagnosis of iron deficiency.[31,32]

Main laboratory indicators:

Hemoglobin (Hb) - for assessing anemia;

Ferritin - the most reliable indicator reflecting iron reserves in the body;

Serum iron;

Transferrin and transferrin saturation level.[33,34,35]

Scientific studies show that a decrease in ferritin is the earliest and most sensitive sign of iron deficiency.

The importance of early detection of iron deficiency

Early detection of iron deficiency:

prevents the development of anemia;

reduces pregnancy and childbirth complications;

preserves the health of the mother and child;

increases the efficiency of women's work and education;

reduces healthcare costs.

Prevention and preventive measures

consume iron-rich foods;  
regular screening examinations for women of childbearing age;  
assess iron reserves before planning pregnancy;  
take iron supplements as recommended by a doctor.[36,37]

### Conclusion

Iron deficiency is a widespread and often hidden medical problem in women of childbearing age. Its early detection and prevention are important in strengthening women's reproductive health. Therefore, it is necessary to widely introduce scientifically based approaches to the detection of iron deficiency into practice.

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