Iron Deficiency Anemia

- Inadequate dietary iron,
- impaired iron absorption,
- bleeding, or loss of body iron

Signs and symptoms

- Fatigue
- Leg cramps on climbing stairs
- Craving ice (in some cases, cold celery or other cold vegetables) to suck or chew
- Cold intolerance
- Reduced resistance to infection
- Altered behavior (eg, attention deficit disorder)
- Dysphagia with solid foods (from esophageal webbing)
- Worsened symptoms of comorbid cardiac or pulmonary disease

Findings on physical examination may include the following:

- Impaired growth in infants
- Pallor of the mucous membranes (a nonspecific finding)
- Spoon-shaped nails (koilonychia)
- A glossy tongue, with atrophy of the lingual papillae
- Fissures at the corners of the mouth (angular stomatitis)
- Splenomegaly (in severe, persistent, untreated cases)
- Pseudotumor cerebri (a rare finding in severe cases)

Diagnosis

- Complete blood count
- Peripheral blood smear
- Serum iron, total iron-binding capacity (TIBC), and serum ferritin

CBC results in iron deficiency anemia

- Low mean corpuscular volume (MCV)
- Low mean corpuscular hemoglobin concentration (MCHC)
- Elevated platelet count (>450,000/µL) in many cases
- Normal or elevated white blood cell count

Peripheral smear results in iron deficiency anemia

- RBCs are microcytic and hypochromic
- Platelets usually are increased
- In contrast to thalassemia, target cells are usually not present
- anisocytosis and poikilocytosis are marked

Results of iron studies are as follows:

- Low serum iron and ferritin levels with an elevated TIBC are diagnostic of iron deficiency
- A normal serum ferritin can be seen in patients who are deficient in iron and have coexistent diseases (eg, hepatitis or anemia of chronic disorders)

Management

- Oral ferrous iron salts are the most economical and effective form
- Ferrous sulfate is the most commonly used iron salt
- Better absorption and lower morbidity have been claimed for other iron salts
- Toxicity is generally proportional to the amount of iron available for absorption
- Reserve parenteral iron for patients who are either unable to absorb oral iron or who have increasing anemia despite adequate doses of oral iron
- Reserve transfusion of packed RBCs for patients who are experiencing significant acute bleeding or are in danger of hypoxia and/or coronary insufficiency

- Although the traditional dosage of ferrous sulfate is 325 mg (65 mg of elemental iron) orally three times a day, lower doses (eg, 15-20 mg of elemental iron daily) may be as effective and cause fewer side effects. To promote absorption, patients should avoid tea and coffee and may take vitamin C (500 units) with the iron pill once daily

- The addition of iron to basic foodstuffs in affluent nations where meat is an important part of the diet is of questionable value and may be harmful.

- Excess body iron is postulated to be important in the etiology of coronary artery disease, strokes, certain carcinomas, and neurodegenerative disorders because iron is important in free radical formation.

- The hemoglobin concentration increases by about 1 g/dL weekly until normal values are restored