Prevalences of Iron Deficiency and Anemia and Current Recommendations for Iron Supplementation

EDUCATIONAL OBJECTIVES

Upon completion of this program, participants should be better able to:

1. Review the prevalences of iron deficiency and anemia in the United States;
2. Identify population groups that are at risk for iron deficiency and anemia, including patients with medical conditions that increase the risk of developing anemia;
3. Discuss recommendations for iron supplementation in at-risk groups and understand when intravenous supplementation may be warranted; and
4. Educate patients about sources of dietary iron and iron supplementation and explain when a consultation with a health care professional may be necessary.

Post-test/Rationale

1. Which of the following groups is at increased risk for iron deficiency?
   A. Middle-aged men
   B. Toddlers***
   C. Teen-aged males
   D. Post-menopausal women

Correct answer: B. Toddlers, premenopausal women, female adolescents, and the elderly are the populations that are most at risk for iron deficiency in the United States. The increased risks result from dietary factors, inadequate prevention strategies, therapeutic considerations, periods of increased growth, and blood losses.

2. Which of the following is NOT a sign or symptom of iron deficiency anemia?
   A. Weakness
   B. Headache
   C. Irritability
   D. Bradycardia***
Correct answer: D. Iron deficiency anemia is often asymptomatic, especially in its early stages. As the total body iron stores are depleted, nonspecific symptoms appear, including weakness, irritability, headache, and fatigue. Patients may also exhibit pallor, tachycardia, cheilosis, glossitis, exercise intolerance, or cognitive decline.

3. Which population group was added to the high-risk category and now has recommendations for routine screening?
A. Elderly men
B. Post-menopausal women
C. Females aged 4 to 8 years
D. Obese adolescents

Correct answer: D. Screening guidelines now include obese adolescent females in the list of high-risk individuals that should be routinely screened for IDA.

4. Bariatric patients are at risk for iron deficiency because of which of the following reasons?
A. Increased consumption of foods containing heme
B. Surgical bypass of absorptive region of the gut
C. Increased acid environment in stomach
D. Increased tissue growth needs

Correct answer: B. Gastroplasty, restrictive or malabsorptive surgery of the digestive tract, including bariatric techniques, is often associated with severe decreases in iron absorption. Dietary iron is unable to be absorbed efficiently because of decreased stomach acid production, bypassing of the duodenum, and the reduced consumption of iron-rich foods, such as red meat.

5. What is the iron supplement recommendation for preventing iron deficiency in premature infants between 1 and 6 months of age who are fed human milk?
A. Oral iron supplement at 2 mg/kg/day
B. Parenteral iron supplement at 2 mg/kg/day
C. Oral iron supplement at 7 mg/kg/day
D. No supplement is needed
Correct answer: A. Preterm infants born before 37 weeks gestation and who are being fed human milk should receive supplemental oral iron dosed at 2 mg elemental iron/kg/day.

6. Which of the following iron supplementation regimens is appropriate for pregnant women who have iron deficiency anemia at the end of their first trimester?
A. Oral iron supplement of 30 mg per day
B. Oral iron supplement of 60 to 120 mg per day***
C. Oral iron supplement of 325 mg per day
D. Parenteral iron supplement of 500 mg per week

Correct answer: B. Pregnant women with confirmed IDA and a hemoglobin level of 9 to 12 g/dL should also be treated with oral iron products at a dose of 60 to 120 mg per day, along with nutritional counseling.

7. Which of the following patients would benefit most from iron supplementation via the parenteral route?
A. A woman in the third trimester of pregnancy
B. A premature infant who received a recent blood transfusion
C. A post-menopausal woman who underwent bariatric surgery***
D. An older adult man on a soft diet

Correct answer: C. Intravenous iron products should be considered for patients with intestinal malabsorption, severe intolerance to oral iron products, chronic gastrointestinal bleeding, or critically ill patients who would otherwise receive a blood transfusion.

8. What is the duration of treatment with oral iron supplementation for adults?
A. Treatment should be discontinued as soon as the hemoglobin level returns to normal
B. Treatment should continue until signs and symptoms of anemia disappear
C. Treatment should continue for at least 3 months after hemoglobin levels return to normal***
D. Treatment should continue indefinitely to prevent the recurrence of iron deficiency and anemia
Correct answer: C. To fully replace iron stores in adults, at least 3 months of iron therapy should continue after hemoglobin levels are normalized.

9. Which over-the-counter medication category inhibits iron absorption?
   A. Non-steroidal anti-inflammatory agents
   B. Proton pump inhibitors***
   C. Diuretics
   D. Antihistamines
   Correct answer: B. Iron absorption decreases in the presence of certain minerals and medications, including calcium, sequestration medications, proton pump inhibitors (PPIs)/acid-reducing medications, and chronic use of non-steroidal anti-inflammatory drugs. Long-term use of PPIs may decrease the amount of iron available for absorption from both food sources and oral supplements because of the changes in stomach acidity; existing iron deficiency may mitigate this effect. However, patients may respond to oral iron replacement after PPIs are discontinued.

10. A 78-year-old woman comes to the pharmacy for her routine medications, including lisinopril, aspirin, omeprazole, and calcium supplements. She maintains a vegan diet. She tells you that she was at her doctor and was told that she has mild anemia. Her physician recommended starting an over-the-counter iron supplement. What is your recommendation?
   A. Take 325 mg ferrous sulfate with hot tea at each meal
   B. Take 325 mg ferrous sulfate with a high-fiber meal
   C. Take 325 mg ferrous sulfate with orange juice between meals***
   D. Take 325 mg ferrous sulfate with her daily calcium supplement
   Correct answer: C. Concurrent ingestion of dairy products, cholestyramine, or antacids containing calcium, aluminum, or magnesium will decrease iron absorption. Individuals should take iron supplements between meals or at bedtime with citrus juice to enhance absorption.