

Randall Children's Hospital

Co-Management and Referral Guidelines

Evaluation and Treatment of Iron Deficiency Anemia (IDA)

Randall Children's Cancer and Blood Disorders Program

A department of Legacy Emanuel Medical Center

Phone: 503-276-9300

Fax: 503-276-9351

Introduction

Iron Deficiency Anemia (IDA) is the world's most common nutritional deficiency. Nine percent of children in the United States are iron deficient. Risk factors include:

- Low birth weight, prematurity, exclusive breastfeeding
- Vegan and vegetarian diets, poor dietary intake, excessive milk intake
- Menstruation

Causes for recurrent or refractory iron deficiency:

- Poor adherence or intolerance to medication
- Ongoing gastrointestinal or urinary blood loss (cow's milk protein-induced colitis, parasitic infection, ulcers, inflammatory bowel disease and celiac disease, anatomic anomalies)
- Rare mutations of iron transport
- Pulmonary hemosiderosis

Evaluation and Management

Who to test

Any child or teen with complaints of fatigue, pica, poor feeding and/or pallor

- Labs: CBC (Hgb and MCV), ferritin and any other labs suggested by history and physical exam
- Treatment:
 - If the hemoglobin is < 8 g/dl, call for an urgent consultation or referral, 503-276-9300.
 - If the Hgb is 8–11 g/dl with an MCV < 70 fL and the ferritin is less than 30 ng/ml, start iron supplementation at 3 mg/kg/day of ELEMENTAL iron divided twice to three times daily for one month.
 - After one month of supplemental iron, repeat the hemoglobin. If the hemoglobin has not increased by at least 1 g/dl, send a CBC, reticulocyte count, ferritin, urinalysis and stool for occult blood. If these tests are all normal and the labs still suggest iron deficiency (low MCV, low ferritin), continue supplemental iron. Otherwise, call for a consultation, 503-276-9300.
 - If the ferritin is 0–15 ng/ml, use elemental iron 6 mg/kg/day divided BID-TID.
 - If the ferritin is 15–30 ng/ml, use elemental iron 3 mg/kg/day divided BID-TID.
 - Recheck the hemoglobin, reticulocyte count and ferritin after an additional month of iron.
 - If the ferritin is improving, but not normal, continue the 3–6 mg/kg/day of elemental iron.
 - If the ferritin is not improving, despite good adherence, call for a referral, 503-276-9300.
 - Once the ferritin is 30–50 ng/ml (normal), use 1 mg/kg/day of elemental iron for three months and then promote high-iron foods and a multivitamin with iron.

See accompanying page for treatment algorithm of the symptomatic child.

Universal screening at 12-month well-child check

- Labs: Fingerstick Hgb/HCT
- If the hemoglobin is 8–11 g/dl, send a CBC and ferritin and follow the treatment schedule above.
- If the hemoglobin is < 8 g/dl, call for an urgent referral, 503-276-9300.

(continued)



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Empiric prevention

- Any breastfed infant should start 1 mg/kg/day of ELEMENTAL iron at four months without testing until iron-fortified cereals are started.

Tips to help with iron absorption:

- If using a solution, shake it well as the iron will settle.
- Give with orange juice or a baby food containing ascorbid acid (read the label); the vitamin C aids in absorption.
- Do not give with milk or food; the calcium competes with iron absorption.
- Ferrous gluconate, ferrous fumarate or polysaccharide iron complex (such as Niferex or Novoferrum — can be purchased via the Internet) are particularly palatable if ferrous sulfate is not well tolerated.

When to refer

Urgent Referral

- Severe anemia: Hgb < 8 g/dl with low MCV; undiagnosed cause of anemia

Routine Referral

- Mild to moderate IDA (Hgb 8–11 g/dl) with no change in the Hgb or ferritin after adequate treatment and adherence after two months of oral iron

Referral process

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Phone: **503-276-9300** or toll-free **877-KIDS-ONC/877-543-7663**

Fax: **503-276-9351**

For urgent referrals, call Legacy One Call Consult & Transfer: 1-800-500-9111 to speak to the on-call pediatric hematologist/oncologist.

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Additional Resources

Robert D. Baker, Frank R. Greer, Diagnosis and Prevention of Iron Deficiency and Iron-Deficiency Anemia in Infants and Young Children (0–3 Years of Age) PEDIATRICS, Vol. 126 No. 5, November 1, 2010 pp. 1040–1050.

<http://pediatrics.aappublications.org/content/126/5/1040>

High-iron foods can be found at:

<http://www.cdph.ca.gov/programs/NutritionandPhysicalActivity/>

[Documents/MO-NUPA-AllIronHandouts.pdf](#) (California Department of Public Health)

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Find this and other co-management/referral guidelines online at: www.legacyhealth.org/randallguidelines



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