

Putting Prevention into Practice

An Evidence-Based Approach

Screening for Iron Deficiency Anemia in Young Children

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► See related U.S. Preventive Services Task Force Recommendation Statement at <http://www.aafp.org/afp/2015/1215/od1.html>.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and the supporting documents on the USPSTF website (<http://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/iron-deficiency-anemia-in-young-children-screening>.

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CME This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz Questions on page 1052.

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Case Study

C.C., a 32-year-old white woman, presents to your office with her nine-month-old son for a routine well-child visit. She is preparing to switch him from breast milk to formula and had noted that most formulas contain iron. She wonders if her son should be screened for iron deficiency and possibly iron deficiency anemia before she starts him on formula.

Case Study Questions

1. Which one of the following factors increases a child's risk of iron deficiency anemia?
 - A. Starting cow's milk in the first year of life.
 - B. Bottle feeding in the first year of life.
 - C. High socioeconomic status.
 - D. Height below the 95th percentile.
 - E. Exclusively breastfeeding at three months of age.
2. Which of the following statements about the benefits of screening for iron deficiency anemia in asymptomatic children six to 24 months of age are correct?
 - A. There is adequate evidence that routine screening for iron deficiency anemia improves neurocognitive function.
 - B. There is adequate evidence that early detection and treatment of iron deficiency anemia improve growth.
 - C. There is inadequate evidence that routine screening for iron deficiency anemia improves cognitive or neurodevelopmental outcomes.
 - D. There is inadequate evidence on the association between change in iron status as a result of intervention and improvement in child health outcomes.
3. Which one of the following approaches to screening for iron deficiency anemia in children six to 24 months of age is consistent with the recommendations of the U.S. Preventive Services Task Force (USPSTF)?
 - A. Screen for iron deficiency anemia because there is high certainty that the benefits substantially outweigh the harms.
 - B. Screen for iron deficiency anemia in children who are transitioning from breast milk to formula because there is high certainty that the benefits moderately outweigh the harms.
 - C. Screen for iron deficiency anemia because there are no harms associated with screening for and treatment of iron deficiency anemia.
 - D. Do not screen for iron deficiency anemia because there is high certainty that the harms outweigh the benefits.
 - E. If children are screened for iron deficiency anemia, parents should understand the uncertainty about the overall balance of benefits and harms.

Answers appear on the following page.

Answers

1. The correct answer is A. Factors that may increase a child's risk of iron deficiency anemia include prematurity or low birth weight, use of non-iron-fortified formula or introduction to cow's milk in the first year of life, and exclusive breastfeeding without regular intake of iron-fortified food after six months of age. Demographic factors associated with increased risk of iron deficiency anemia include low socioeconomic status and having parents who are migrant workers or recent immigrants. Additional factors that may be associated with increased risk of iron deficiency in children include weight and height in the 95th percentile or greater, bottle feeding beyond the first year of life, having a mother who is currently pregnant, or living in an urban area. Evidence on whether Hispanic ethnicity increases children's risk of iron deficiency has been mixed.

2. The correct answers are C and D. The USPSTF found inadequate evidence to determine the benefit of routine screening for iron deficiency anemia and prevention or reduction of poor health outcomes in children six to 24 months of age with treatment. The USPSTF found no studies that evaluated the direct benefits of routine screening programs on child health outcomes. The USPSTF found inadequate evidence (i.e., no recent studies that are generalizable to the current U.S. population) on the effects of treatment of iron deficiency anemia in children six to 24 months of age on growth or child cognitive or neurodevelopmental

outcomes. No studies directly assessed the association between change in iron status as a result of intervention and improvement in child health outcomes. This represents a critical gap in the evidence.

3. The correct answer is E. The USPSTF issued an "I statement" on screening for iron deficiency anemia in asymptomatic children six to 24 months of age because there is insufficient evidence on the benefits and harms of screening. The USPSTF concluded that the evidence on screening for iron deficiency anemia in asymptomatic children in this age group to prevent adverse growth, cognitive, or neurodevelopmental outcomes is lacking, and the balance of benefits and harms cannot be determined. It found no studies that evaluated the direct benefits or harms of routine screening programs on child health outcomes. It also found inadequate evidence (i.e., no recent studies that are generalizable to the current U.S. population) on the effects of treating iron deficiency.

The views expressed in this work are those of the authors, and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the U.S. government.

SOURCES

U.S. Preventive Services Task Force. Screening for iron deficiency anemia in young children: USPSTF recommendation statement. *Pediatrics*. 2015;136(4):746-752.
McDonagh MS, Blazina I, Dana T, Cantor A, Bougatsos C. Screening and routine supplementation for iron deficiency anemia: a systematic review. *Pediatrics*. 2015;135(4):723-733. ■