

# Putting Prevention into Practice

*An Evidence-Based Approach*

## Screening for Iron Deficiency Anemia and Iron Supplementation in Pregnant Women to Improve Maternal Health and Birth Outcomes

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► See related U.S. Preventive Services Task Force Recommendation Statement on page 133.

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-pregnant-women-screening-and-supplementation>.

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**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz Questions on page 95.

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### Case Study

A 28-year-old woman presents for a routine antepartum visit. She is 33 weeks pregnant and also has a four-year-old son. She has no particular problems, and the findings from your examination are unremarkable. She asks if her blood iron level should be tested.

### Case Study Questions

1. Which of the following factors have been shown to increase the risk of iron deficiency anemia during pregnancy?

- A. Diet low in iron-rich foods.
- B. Age older than 35 years.
- C. First pregnancy.
- D. Short interval between pregnancies.

2. Based on the U.S. Preventive Services Task Force (USPSTF) recommendation statement, which one of the following approaches to screening for iron deficiency anemia is most appropriate for this patient?

- A. She should be routinely screened because there is convincing evidence that the harms associated with screening are small.
- B. She should be routinely screened because there is moderate certainty that screening has a small benefit on maternal and birth health outcomes.
- C. She should not be screened because there is moderate certainty that screening has no net benefit.
- D. There is insufficient evidence to assess the balance of benefits and harms of screening for iron deficiency anemia to improve maternal health and birth outcomes.

3. Based on the USPSTF's findings, which one of the following statements about iron supplementation is correct?

- A. There is insufficient evidence to demonstrate that routine iron supplementation during pregnancy improves intermediate maternal iron and hemoglobin levels.
- B. There is insufficient evidence to demonstrate that routine iron supplementation during pregnancy improves maternal health or birth outcomes.
- C. Pregnant women should routinely receive iron supplementation because there is moderate certainty that it provides a small net benefit.
- D. Pregnant women should not routinely receive iron supplementation because there is moderate certainty that it has no net benefit.

Answers appear on the following page.

### Answers

**1. The correct answers are A and D.** The following factors may increase a woman's risk of iron deficiency anemia during pregnancy: a diet low in iron-rich foods, such as a vegetarian diet with inadequate sources of iron; gastrointestinal diseases and/or use of medications that impair iron absorption, such as antacids; and a short interval between subsequent pregnancies. No studies have identified age during pregnancy or first pregnancy as a risk factor for iron deficiency anemia. Higher prevalence rates of iron deficiency have been found in women with parity of two or more, and in non-Hispanic black and Mexican American women compared with white women. Evidence on additional risk factors, such as lower education level and family income, has been less consistent.

**2. The correct answer is D.** The USPSTF issued an I statement for routine screening for iron deficiency anemia in asymptomatic pregnant women. No studies were found that evaluated the direct effects (either benefits or harms) of routine screening on maternal health or birth outcomes. Evidence was insufficient to assess the potential harms associated with routine screening. Consequently, the USPSTF could not assess the balance of benefits and harms, and thus could not recommend for or against screening. If screening is offered, patients should understand the uncertainty about the balance of benefits and harms. The USPSTF also found limited evidence to support the

use of risk prediction tools to identify pregnant women who are at risk of iron deficiency anemia.

**3. The correct answer is B.** There is insufficient evidence to demonstrate that providing iron supplementation to asymptomatic pregnant women improves maternal health or birth outcomes. Adequate evidence demonstrates that routine iron supplementation during pregnancy improves serum ferritin and hemoglobin levels. However, the USPSTF did not find evidence that these higher indices result in improved maternal health or birth outcomes. The USPSTF found adequate evidence that the harms associated with routine iron supplementation in pregnant women are small to none. The most common harms of supplementation are nausea, constipation, and diarrhea; however, most studies found that patients receiving iron supplementation did not have significantly higher rates of these events.

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.

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### SOURCES

Screening for iron deficiency anemia and iron supplementation in pregnant women to improve maternal health and birth outcomes: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2015;163(7):529-536.

Cantor AG, Bougatsos C, Dana T, Blazina I, McDonagh M. Routine iron supplementation and screening for iron deficiency anemia in pregnancy: a systematic review for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2015; 162(8):566-576. ■