

Screening: New guidance on what and what not to do

The entity with the most rigorous evidence-based approach is the US Preventive Services Task Force

One of our key responsibilities is to provide effective preventive services—and avoid performing tests of no value. Since most of us do not have time to keep up with the literature on what services and tests have and have not been proven effective, we depend on trusted authorities to make these assessments for us.

The entity with the most rigorously evidence-based approach is the United States Preventive Services Task Force (USPSTF). (TABLE 1 lists the criteria for their recommendations.) Every year, this Practice Alert summarizes the new recommendations from the task force. The new recommendations in the 6 disease categories discussed here were published by the USPSTF in 2006 and the first quarter of 2007 (TABLE 2).

1. Iron deficiency anemia
2. Colon cancer chemoprevention
3. Genetic screening for hemochromatosis
4. Congenital hip dysplasia
5. Elevated lead levels
6. Speech delay

“I” means insufficient evidence

As usual, there are many screening tests that lack evidence either for or against their effectiveness. The Task Force places such tests in the “I” (insufficient evidence) category. Physicians should

remember that an “I” recommendation is not the equivalent of a “D” (recommend against).

Screening implies routine testing, and no symptoms

We also need to keep in mind the difference between screening and diagnosis. Screening implies *routine* testing among *asymptomatic* patients. Screening recommendations do not apply to symptomatic patients in whom diagnostic testing may be indicated.

1. Iron deficiency anemia

The task force *recommends*

- routine screening for iron deficiency anemia in asymptomatic pregnant women, and
- iron supplementation for asymptomatic children ages 6 to 12 months who are at increased risk for iron deficiency anemia.¹

The task force concludes that the *evidence is insufficient* to recommend for or against

- routine screening for iron deficiency anemia in asymptomatic children ages 6 to 12 months,
- iron supplementation for asymptomatic children ages 6 to 12 months who are at average risk for iron deficiency anemia,

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TABLE 1

The rigor behind the recommendations

RECOMMENDATION	EVIDENCE	RESULTS OF THE SERVICE
A Strongly recommends	Good evidence	<ul style="list-style-type: none"> • Improves important health outcomes • Benefits substantially outweigh harms
B Recommends	At least fair evidence	<ul style="list-style-type: none"> • Improves important health outcomes • Benefits outweigh harms
C No recommendation	At least fair evidence	<ul style="list-style-type: none"> • Can improve health outcomes • Balance of the benefits and harms is too close to justify a general recommendation
D Recommends against	At least fair evidence	<ul style="list-style-type: none"> • Ineffective, <i>or</i> • Harms outweigh benefits
I Insufficient evidence	Insufficient to recommend for or against	<ul style="list-style-type: none"> • Evidence that the service is effective is lacking, of poor quality, or conflicting, <i>and</i> • Balance of benefits and harms cannot be determined

FAST TRACK

The evidence is “at least fair” that iron supplements benefit infants from low socioeconomic backgrounds and premature infants

- **iron supplementation** for non-anemic pregnant women.¹

Iron deficiency anemia is linked to developmental and cognitive abnormalities in children and poorer birth outcomes in pregnant women. The task force felt that the weight of the evidence supports a set of recommendations that includes screening all pregnant women and using iron preparations for those who have deficiency, and using routine iron supplementation for at-risk infants between the ages of 6 and 12 months.

The lack of a recommendation on screening all children was based on concern about the accuracy of hemoglobin as a screening test for iron deficiency and a scarcity of evidence that universal screening results in improved outcomes. Routine iron supplementation was felt to be of proven benefit only for infants at increased risk: those from low socioeconomic backgrounds and premature and low birth weight infants.

The Centers for Disease Control and Prevention (CDC) agrees that screening should be performed in high-risk infants and all pregnant women, but recommends universal iron supplementation during pregnancy.

The American Academy of Pediatrics recommends screening all infants twice (at age 9 to 12 months, and 6 months later) along with dietary interventions to prevent iron deficiency, such as: breastfeeding or the use of iron-fortified formula, and the introduction of iron-rich foods at age 6 months.

2. Colon cancer

The task force recommends *against* routine use of aspirin and NSAIDs to prevent colorectal cancer in individuals at average risk for colorectal cancer.²

Colon cancer is common and a common cause of cancer mortality,³ and proven secondary preventions are available. Chemoprevention is a potential method of primary prevention; it has some benefits as well as harms. The task force concluded that the documented harms exceed the potential benefits.

- **Aspirin** taken at the high-dose regimen (350–700 mg/day) needed to protect from colon cancer increases the risks for gastrointestinal bleeding and hemorrhagic stroke. A lower dose of aspirin (75–350 mg/day) is used for chemoprevention in adults who are at increased risk for coronary heart disease but this does not protect against colon cancer.
- **Nonsteroidal anti-inflammatory drugs (NSAIDs)** may reduce the risk of colorectal cancer, but they also increase the risks of gastrointestinal bleeding and renal injury.
- **Cyclooxygenase-2 inhibitors** have been linked to increases in coronary artery disease.

3. Hemochromatosis

The task force recommends *against* routine genetic screening for hereditary hemochromatosis in the asymptomatic general population.⁴

Hemochromatosis is rare, and only a small proportion of those with the high-risk genotype actually develop the disease. The effectiveness of early intervention is unproven, and the potential for harm from false positives is significant.

The D recommendation does not apply to those with signs and symptoms consistent with hemochromatosis or a strong family history of the disease. Nor does it pertain to non-genetic laboratory tests to identify iron overload (although these also lack proof that they improve outcomes in the general population).

4. Congenital hip dysplasia

The task force concludes that *evidence is insufficient* to recommend routine screening for developmental dysplasia of the hip in infants as a means to prevent adverse outcomes.⁵

Physical examination and ultrasonography have limited accuracy in finding hip dysplasia, and there is a high rate of natural resolution (60% to 90%) of hip abnormalities found with these tests. Both surgical and non-surgical treatments lack evidence of effectiveness and are associated with potential for harm from avascular necrosis, high costs, and complications from surgery and anesthesia.

This uncertainty applies only to asymptomatic infants—not to those who have obvious hip dislocations or other hip abnormalities.

5. Elevated lead levels

The task force concludes that *evidence is insufficient* to recommend for or against routine screening for elevated blood lead

TABLE 2

Summary of new USPSTF recommendations

B RECOMMENDATIONS

The USPSTF *recommends routine*:

- Screening for iron deficiency anemia in asymptomatic pregnant women
- Iron supplementation for asymptomatic children ages 6 to 12 months who are at increased risk for iron deficiency anemia

D RECOMMENDATIONS

The USPSTF *recommends against routine*:

- Use of aspirin and nonsteroidal anti-inflammatory drugs (NSAIDs) to prevent colorectal cancer in individuals at average risk for colorectal cancer
- Genetic screening for hereditary hemochromatosis in the asymptomatic general population
- Screening for elevated blood lead levels in asymptomatic children ages 1 to 5 years who are at average risk
- Screening for elevated blood lead levels in asymptomatic pregnant women

I RECOMMENDATIONS

The USPSTF concludes that *evidence is insufficient* to recommend for or against routine:

- Screening for iron deficiency anemia in asymptomatic children ages 6 to 12 months
- Iron supplementation for asymptomatic children ages 6 to 12 months who are at average risk for iron deficiency anemia
- Iron supplementation for non-anemic pregnant women.
- Screening for developmental dysplasia of the hip in infants as a means to prevent adverse outcomes
- Screening for elevated blood lead levels in asymptomatic children ages 1 to 5 who are at increased risk
- Brief, formal screening instruments in primary care to detect speech and language delay in children up to 5 years of age

levels in asymptomatic children ages 1 to 5 who are at increased risk.⁶

The task force recommends *against* routine screening for elevated blood lead levels in:

- asymptomatic children ages 1 to 5 years who are at average risk
- asymptomatic pregnant women.⁶

The reduction of lead in the environment, especially the reduction of lead-based gasoline, has resulted in a decline in elevated blood lead levels in the United

