



# U.S. Preventive Services Task Force Topic Development Background Document

**Title:** Screening for iron deficiency anemia in young children

**Literature surveillance date:** July 2023

**Recommendation Summary:** In 2015, the Task Force concluded that the current evidence was insufficient to assess the balance of benefits and harms of screening for iron deficiency anemia (IDA) in children ages 6 to 24 months (**Grade: I statement**).

**Research Gaps from Previous Task Force Review:** The Task Force identified important gaps and recommends further research on:

- The effect of routine screening for or treatment of IDA on growth or child cognitive, psychomotor, or neurodevelopmental outcomes;
- The performance of risk assessment tools to identify children who are at increased risk for IDA;
- The harms of screening for or treatment of IDA; and
- The short- and long-term effects of change in iron status on health outcomes in settings similar to the US with respect to nutrition, hemoparasite burden, and socioeconomic status.

**Summary of New Evidence:** Literature scans in the MEDLINE database and Cochrane Library were limited to English language, core and specialty clinical journals, August 2014 to present.

We identified one study focused on **screening and treatment** for IDA in Canadian children.<sup>1</sup> Children (N=1,478) aged 1 to 3 years were screened for iron deficiency in a primary care setting using serum ferritin. In a sub-study, 130 of these children aged 12 to 40 months were enrolled in 4 months of treatment based on their screen-detected iron status categories. Outcomes at one year include cognitive and functioning measures and serum ferritin and hemoglobin levels; harms are not addressed.

Four articles report on the effects of **routine iron supplementation**.<sup>2-5</sup> An RCT in Argentina randomized 227 infants without anemia to daily, weekly, or no iron supplementation. Rates of iron deficiency and anemia at 6 months and intervention-related harms are reported.<sup>5</sup> Three publications report long-term followup from an RCT included in the prior USPSTF review.<sup>2-4</sup>

## References

1. Gingoyon A, Borkhoff CM, Koroshegyi C, et al. Chronic Iron Deficiency and Cognitive Function in Early Childhood. *Pediatrics*. 2022;150(6). PMID: 36412051. 10.1542/peds.2021-055926
2. East P, Reid B, Blanco E, et al. Iron supplementation given to nonanemic infants: neurocognitive functioning at 16 years. *Nutritional neuroscience*. 2021: Available from: <https://www.cochranelibrary.com/central/doi/10.1002/central/CN-02383021/full>.
3. Doom JR, Gahagan S, Caballero G, et al. Infant iron deficiency, iron supplementation, and psychosocial stress as predictors of neurocognitive development in Chilean adolescents. *Nutr Neurosci*. 2021;24(7):520-9. 10.1080/1028415x.2019.1651105
4. East P, Doom JR, Blanco E, et al. Iron deficiency in infancy and neurocognitive and educational outcomes in young adulthood. *Dev Psychol*. 2021;57(6):962-75. 10.1037/dev0001030
5. Varea A, Disalvo L, Fasano MV, et al. Effectiveness of weekly and daily iron administration for the prevention of iron deficiency anemia in infants. *Arch Argent Pediatr*. 2023;121(4):e202202815. 10.5546/aap.2022-02815.eng