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How much iron to supplement and when

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To the Editor:

We congratulate Domellöf et al¹ on their study of supplementation in breast-fed infants, which we believe is an important public health issue, particularly because iron deficiency (ID) may impair neurodevelopment.² We do, however, have some concerns regarding their conclusions.

We question their premise that higher 9-month hemoglobin in iron-supplemented infants occurs because “regulation of hemoglobin synthesis is immature at this age.” Falling ferritin levels in all groups suggests that iron stores decreased with age, even with supplementation. Also 9-month ferritin levels were far higher in supplemented infants from 4 to 9 months old than in controls. We believe that iron supplementation raised hemoglobin and ferritin levels by

preventing depletion of iron stores.

Second, we believe the dangers of low-dose iron supplements have been overstated and may negatively influence the design of future trials. Intakes of 1 to 2 mg/kg/day are routine in both preterm and term infants receiving formula,^{3,4} without adverse effects on growth or development; our experience is similar for breast-fed infants.⁵

In a recent trial,⁵ we found that oral iron supplementation (7.5 mg/day) of breast-fed infants from 1 month prevented a fall in hemoglobin at 6 months (124 g/L versus 116 g/L for placebo, $P < .05$), with no adverse effects on weight, length, head circumference, study drug tolerance, or antioxidant status. We suspect that 6-month iron status in breast-fed infants is augmented by early iron supplementation.

Ultimately, we must ask the question: should exclusively breast-fed infants receive iron supplementation? If so, from what age, and how much? To answer these questions we must consider the possibility that depletion of iron stores occurs by 4 to 6 months of age. We must test the hypotheses that ID and its potential adverse neurodevelopmental effects might be prevented by supplementation from an earlier age.

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