

Iron supplements might harm infants who have enough

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A new study suggests that extra iron for infants who don't need it might delay development -- results that fuel the debate over optimal iron supplement levels and could have huge implications for the baby formula and food industry.

"Our results for 25 years of research show problems with lack of iron. For us to find this result is a big deal, it's really unexpected," said Dr. Betsy Lozoff, University of Michigan research professor at the Center for Human Growth and Development, and the study's principal investigator.

U.S. infant formulas typically come fortified with 12 mg/L of iron to prevent iron-deficiency anemia. Europe generally uses a lower amount. In infants, iron-deficiency anemia is associated with poorer development, and during pregnancy it contributes to anemia in mothers, contributing to premature birth, low birth weight and other complications.

"I thought that behavior and development would be better with the 12 mg formula," said Lozoff, also professor of pediatrics in the U-M Department of Pediatrics and Communicable Diseases at the Medical School and C.S. Mott Children's Hospital

The U-M study of 494 Chilean children showed that those who received iron fortified formula in infancy at the 12 mg used in the U.S. lagged behind those who received low-iron formula in cognitive and visual-

motor development by age 10 years. Lozoff stressed that most children who received the 12 mg formula did not show lower scores. But the 5 percent of the sample with the highest hemoglobin levels at 6 months showed the poorest outcome. Your body needs iron to make hemoglobin, a substance in red blood cells that enables them to carry oxygen. High hemoglobin generally indicates sufficient iron.

Adversely affected children scored 11 points lower in IQ and 12 points lower in visual-motor integration, on average; the average overall score on both tests was 100. A similar pattern was observed for spatial memory and other visual-motor measures.

Lozoff noted that not many infants in Chile had high hemoglobin levels at the time since there was no iron-fortification program for infants and that more than 5 percent of U.S. infants might have high hemoglobin levels in early infancy.

In this randomized study, healthy infants without iron-deficiency anemia were given formula with either 12 mg or 2.3 mg iron from 6 to 12 months and followed to 10 years. The next step is to test the participants again at age 16, Lozoff said, who says that no such study has been conducted in the United States or elsewhere.

Iron deficiency occurs because babies grow so quickly they often "grow out" of the amount of iron they are born with. Breast milk is thought to contain the iron a baby needs for 4-6 months, Lozoff said. Other important sources of iron for infants include iron-fortified infant formulas and cereals, iron drops and meat.

Infants are typically not tested for hemoglobin or iron levels before 9-12 months. It would be premature to recommend earlier testing or to avoid supplemental iron based on the study's results, Lozoff said. She expects parents to be concerned, but stressed that results must be reproduced in

other studies.

"At this point there's no basis for changing practice, but it's really important that we have continued research on this issue," she said.

Source: University of Michigan

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