

# Iron supplements have long-term benefits for low birth-weight babies

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Babies classified as low birth weight (under 2.500 grams) are at risk of iron deficiency, which is linked to impaired neurological development. A long-term randomized study now shows that providing such babies with iron supplements can prevent behavioral problems at school age. The study, led by Staffan Berglund of Umeå University in Sweden, is published in the journal *Pediatric Research* which is published by Springer Nature.

The findings are part of ongoing Swedish research involving 285 late preterm and term infants who weighed between 2000 grams and 2500 grams at birth, and were defined as being marginally [low birth weight](#). This group represents a significant number of all births. The babies were randomly selected to receive either no [iron](#) supplements, or specific doses from the age of six weeks to six months.

Research up until now has shown that those babies given iron supplements had a lower risk of suffering from [iron deficiency](#) or [iron deficiency anemia](#) by the time they were six months old. When the participants were tested again when they were 3 and a half years old, the ones in the supplement group had fewer [behavioral problems](#) than those who went without extra iron.

In this study, 207 of the participants from the initial investigation were tested at the age of seven. Berglund and his fellow researchers wanted to see if the early iron intervention influenced the children's cognitive and neurobehavioral abilities. The Wechsler Intelligence Scale for Children

was used to assess the children's cognitive abilities. Their parents completed two standardized questionnaires about their children's behavior.

No major differences were found in the intelligence scores of the children in the two separate test groups. The magnitude of the intervention group to show externalizing problems was however significantly reduced compared to that of the children in the other. They had lower levels of aggressive and rule-breaking behavior, and did not suffer as many thought problems. The thought problems in question were recently shown to be the best independent predictor of autism spectrum disorders. This suggests that the behavioural and emotional profiles of low birth weight children who did not receive [iron supplements](#) include different symptoms of subclinical neurodevelopmental problems.

"Our findings suggest that iron supplementation may have long-lasting effects on behavioural functions in children born of a low birth weight," says Berglund. "This clinically important benefit from early iron supplementation gives further support to recommend [iron supplementation](#) of all low birth weight children, including those with marginally low birth weight."

On the population level this finding is important, since marginally low [birth](#) weight infants represent a relatively large proportion of all births. Up to five percent of infants born in high income countries and fifteen percent of those in low income countries are defined as such.

**More information:** Berglund, SK. et al (2017). Effects of iron supplementation of low birth weight infants on cognition and behavior at 7 years – a randomized controlled trial, *Pediatric Research* DOI is 10.1038/PR.2017.235

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