Iron supplemented formula milk prevented iron deficiency anaemia and reduced developmental declines in infants from inner city areas


**QUESTION:** Does iron supplemented formula milk, compared with unmodified cows’ milk, prevent iron deficiency anaemia and improve psychomotor developmental outcomes in infants from an inner city area?

**Design**
Randomised [allocation concealed]*, blinded (outcome assessor), controlled trial with follow up at age 24 months.

**Setting**
An inner city area of Birmingham, UK. The area was described as socially deprived, with high unemployment, poor housing, and poor public amenities.

**Patients**
100 full term infants (mean age 7.8 mo, 53% girls, 75% white) identified by health visitors working in the area, whose mothers had already changed their infant’s diet to unmodified cows’ milk. Follow up was 85% at 24 months.

**Intervention**
50 infants were allocated to iron supplemented formula milk (1.2 mg iron/100 ml) until 18 months of age and then were switched back to unmodified cows’ milk until 24 months of age. 50 infants were allocated to continue on unmodified cows’ milk (0.05 mg iron/100 ml) until 24 months of age.

**Main outcome measures**
Mean haemoglobin concentration; overall developmental score assessed using the Griffiths scale (mean of 5 subscale scores: locomotor, personal and social, hearing and speech, eye and hand coordination, and performance [manipulation and precision]); and developmental scores for subscales.

**Main results**
At 24 months, none of the infants who received iron supplemented formula milk was anaemic (even after switching back to unmodified cows’ milk at 18 months) compared with 26% of infants who received unmodified cows’ milk only (p<0.002). Overall developmental scores declined in both the iron supplemented formula group and the unmodified cows’ milk group; however, the iron supplemented formula group had a smaller decrease than the cows’ milk formula group (decrease of 9.3 v 14.7 points; difference of 5.4 points, 95% CI around the difference 0.4% to 10.4%). The iron supplemented formula group also had smaller decreases in subscale scores for personal and social development (decrease of 10.0 v 19.0; difference of 9.0 points, CI around the difference 1.2 to 16.8).

**Conclusion**
Among infants from an inner city area, iron supplemented formula milk given from 6 to 18 months of age prevented iron deficiency anaemia and led to smaller declines in overall developmental functioning at 24 months of age than unmodified cows’ milk.

*Information provided by author.
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