Critical outcomes

For enteral iron supplementation compared with no iron supplementation, four trials reported morbidity (4 reported sepsis, 2 necrotizing enterocolitis), five reported growth outcomes (5 reported weight, 3 length, 3 head circumference) and one reported on neurodevelopment (cognitive outcomes). No studies reported all-cause mortality. (Full details are provided in GRADE Table A.10, in the Web Supplement.)

- **Morbidity:** Very-low-certainty evidence from four trials totalling 270 participants suggests little or no effect on sepsis prevalence at latest follow-up (median 8 [IQR 8–9] weeks) (RR 1.08, 95% CI 0.56 to 2.07). Very-low-certainty evidence from two trials totalling 194 participants suggests little or no effect on necrotizing enterocolitis prevalence at latest follow-up (median 9 [IQR 8.5–9.5] weeks) (RR 1.54, 95% CI 0.69 to 3.46).
- **Growth:** Low-certainty evidence from five trials totalling 574 participants suggests an increase in weight in grams at latest follow-up (median 26 [IQR 8–36] weeks) (MD 35.31, 95% CI -64.53 to 135.15). Moderate-certainty evidence from three trials totalling 384 participants suggests an increase in length in centimetres at latest follow-up (median 26 [IQR 8–183] weeks) (MD 0.69, 95% CI 0.01 to 1.37). Low-certainty evidence from three trials totalling 385 participants suggests little or no effect on head circumference at latest follow-up (median 26 [IQR 8–183] weeks) (MD 0.09, 95% CI -0.4 to 0.21).
- **Neurodevelopment:** Very-low-certainty evidence from one trial with 199 participants suggests little or no effect on cognitive development (measured using the Wechsler Intelligence Scale for Children, fourth edition [WISC-IV]) at latest follow-up (mean 365 weeks) (RR 0.31, 95% CI 0.09 to 1.02).

Other outcomes

Moderate-certainty evidence from two trials totalling 381 participants suggests a decrease in anaemia prevalence at latest follow-up (RR 0.25, 95% CI 0.10 to 0.62). Moderate-certainty evidence from five trials totalling 506 participants suggests an increase in haemoglobin prevalence at latest follow-up (mean 26 weeks) (MD 4.79, 95% CI 2.9 to 6.69). Very-low-certainty evidence from six trials totalling 607 participants suggests little or no effect on ferritin levels at latest follow-up (median 14 [IQR 8–26] weeks) (MD 8.76, 95% CI -0.85 to 18.37). Very-low-certainty evidence from two trials totalling 238 participants suggests little or no effect on feed intolerance at latest follow-up (mean 8 weeks) (RR 1.05, 95% CI 0.49 to 2.27).

Subgroup analyses

The effect of gestational age and birth weight could not be assessed as there were insufficient trials for any critical outcome.

Values and acceptability

The systematic review about what matters to families about the care of the preterm or LBW infant (see Table 1.1) reported that families want to be involved in delivering care to infants, including supporting nutrition, and want to take an active role in deciding what interventions are given to infants, including what and how they are fed *(14)*. There was no specific evidence available about whether families value iron supplements for their preterm or LBW baby or whether they find them acceptable.

Resources required and implementation considerations

Organization of care

The supplements can be provided in the health-care facility or at home. The family needs accurate information on the dose and how to administer the supplement. National or local guidance for health-care facilities should be used.

Infrastructure, equipment and supplies

Iron supplements are commonly provided to LBW and preterm infants as oral liquid solution. Infants are commonly prescribed 2–4 mg/kg of elemental iron per day for the prophylaxis of iron deficiency anaemia. Concentrations of 5 mg of elemental iron per millilitre of liquid are often used (e.g. 1 ml/day to a 2 kg baby will provide 2.5 mg of elemental iron per day). Droppers or syringes can be used to administer the supplement to the infant. Doses are different for the treatment of iron deficiency anaemia. National or local guidance for health-care facilities should be used.

Workforce, training, supervision and monitoring

Health workers at all levels can support mothers and families. Standardized packages are needed for training, supervision and monitoring. Dispensing needs to be documented in clinical records.

Feasibility and equity

There was no specific evidence available about the feasibility of providing iron supplements to preterm or LBW babies.