

**Supplementary Table S4. Risk of bias rationale for judgment**

Author, year		Selection bias (random sequence generation)	Selection bias (allocation concealment)	Performance bias (blinding of participants and personnel)	Detection bias (blinding of outcome assessment)	Attrition bias (incomplete outcome data)	Reporting bias (selective outcome reporting)	Other bias
Prevention of IDA								
AMBIT RCT	Zhou 2006 [1]	Low risk  Computer- generated randomization schedule consultant.	Low risk  Opaque bottles marked with a sequential, numerical code	Low risk  Families and research staff blinded to group assignment	Low risk  Families and research staff blinded to group assignment until analyses complete	High risk  High attrition at four years  20 mg iron: 30% (66/219) Placebo: 30% (65/214))	Unclear risk  Insufficient information re outcome reporting. Early study, no trial registration or protocol publication.	Low risk  Intent-to- treat analysis
	Parsons 2008 [2]			High risk  Parents were unblinded after four-year follow-up.	High risk  Parents were unblinded and completed assessments on their children.	High risk  High attrition at six to eight years  20mg iron: 38% (84/219) Placebo: 38% (82/214)		

ECLIPSES RCT	Iglesias-Vazquez 2022 [3]	Low risk  Randomization performed using centralised computer software.	Low risk  Randomisation procedure is automated, masked, and independent for each stratum.	Low risk  Triple blinded (participant, health care professional and statistician).	Low risk  Health professional and statistician also blinded.	High attrition at 40 days  <i>Baseline Hb 110-130g/L</i>  80 mg iron: 40% (107/268) 40 mg iron: 36% (94/261))  <i>Baseline Hb &gt; 130 g/L</i>  40 mg iron: 30% (39/132) 20 mg iron :37% (48/130)	High risk  Trial registration and the published trial protocol indicate both intent-to-treat and per-protocol analysis, but only latter published.	High risk  All results are based on per-protocol analysis. Intent-to-treat analyses requested but unavailable.
	Iglesias-Vazquez 2023 [4]					<i>Baseline Hb 110-130g/L</i>  80 mg iron: 64% (172/268) 40 mg iron: 66% (171/261)  <i>Baseline Hb &gt; 130 g/L</i>  40 mg iron: 56% (74/132) 20 mg iron: 61% (79/130)	Unclear risk  Methods of follow up at four years not outlined in the trial registration or published protocol.	High risk  Per-protocol results published; however, authors provided intent-treat-analyses upon request.

Treatment of ID								
IV Iron RCT	Froessler 2022 [5]	Low risk  Randomisation by trial pharmacist using an online randomisation sequence generator	Low risk  Sequence generation with opaque envelopes	Low risk  Participants, clinicians, researchers, and statistician masked to allocation until analyses complete	Low risk  Researchers and statistician blinded until analyses complete	High risk  High attrition at 12 months for neurodevelopmental outcomes ~50%	Unclear risk  Neurodevelopmental assessments were not included in the trial registration and trial protocol was not published.	Low risk  Intent-to-treat analysis

Abbreviations: Hb: haemoglobin; ID: iron deficiency; IDA: iron deficiency anaemia; IV: intravenous; RCT: randomised controlled trial.

## References

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2. Parsons, A.G.; Zhou, S.J.; Spurrier, N.J.; Makrides, M. Effect of iron supplementation during pregnancy on the behaviour of children at early school age: long-term follow-up of a randomised controlled trial. *Br J Nutr* **2008**, *99*, 1133-1139.
3. Iglesias-Vazquez, L.; Hernandez-Martinez, C.; Voltas, N.; Canals, J.; Coronel, P.; Gimeno, M.; Arija, V. Adapting prenatal iron supplementation to maternal needs results in optimal child neurodevelopment: a follow-up of the ECLIPSES Study. *BMC Pregnancy Childbirth* **2022**, *22*, 710, doi:<https://dx.doi.org/10.1186/s12884-022-05033-y>.
4. Iglesias-Vazquez, L.; Voltas, N.; Hernandez-Martinez, C.; Canals, J.; Coronel, P.; Gimeno, M.; Basora, J.; Arija, V. Importance of Maternal Iron Status on the Improvement of Cognitive Function in Children After Prenatal Iron Supplementation. *Am J Prev Med* **2023**, doi:<https://dx.doi.org/10.1016/j.amepre.2023.02.006>, doi:<https://dx.doi.org/10.1016/j.amepre.2023.02.006>.
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