

FERROUS SULFATE

Indication	<ul style="list-style-type: none"> • Infants born at less than 32 weeks gestation¹ OR with birthweight less than 1800g², AND who are predominantly fed unfortified breastmilk OR term infant formula • Iron supplement for treatment/prevention of: <ul style="list-style-type: none"> ○ Iron deficiency³ ○ Iron deficiency anaemia³ ○ Anaemia of prematurity⁴ 	
ORAL	Presentation	• Oral solution: 30 mg in 1 mL (equivalent elemental iron 6 mg in 1 mL)
	Dosage	<ul style="list-style-type: none"> • 2–3 mg/kg/day of elemental iron^{1,2,5,6} <ul style="list-style-type: none"> ○ Refer to Quick guide below
	Preparation	• Nil required
	Administration	<ul style="list-style-type: none"> • Draw up prescribed dose in an enteral/oral syringe • Oral, NGT/OGT • To enhance absorption administer separate from milk feeds⁷ • May be given in 1 or 2 divided doses¹
Special considerations	<ul style="list-style-type: none"> • Document prescribed dose of elemental iron in mg/kg/day • Recommended from 14 days of age^{2,8} if feed volume of 120 mL/kg/day tolerated • At discharge, consider continuation of 6 mg (1 mL) daily until 6–12 months corrected age (or solids introduced)² • May require higher dosage if: <ul style="list-style-type: none"> ○ Birthweight less than 1 kg (4 mg/kg/day)⁸ ○ Receiving erythropoietin (6 mg/kg/day)^{2,8,9} ○ Iron deficiency anaemia (3–6 mg/kg/day)¹ • For low birth weight infants tolerating 160 mL/kg/day of oral feeds: <ul style="list-style-type: none"> ○ Iron fortified preterm formula and breast milk fortified with human milk fortifier supplies recommended daily requirement ○ Term infant formula is insufficient to meet the daily requirement • Excessive iron supplementation can increase infection risk, inhibit growth, disturb the absorption of other minerals, and potentially increase the risk of free oxygen radical formation and ROP 	
Monitoring	<ul style="list-style-type: none"> • For constipation • Iron studies as indicated 	
Compatibility	• Nil known	
Incompatibility	• Nil known	
Interactions	• Food can decrease absorption of iron ¹⁰	
Stability	<ul style="list-style-type: none"> • Store below 25 °C¹¹. Protect from light • Discard 4 weeks after opening or as per local infection control policy (limited evidence) 	
Side effects	• Digestive: laxative effect, diarrhoea, gastro-intestinal irritation, constipation, black stool ¹⁷	
Actions	• Stored as ferritin and hemosiderin for future use in the production of haemoglobin ¹⁰	
Abbreviations	NGT: nasogastric tube, OGT: oral gastric tube, ROP: retinopathy of prematurity	
Keywords	Ferrous Sulfate, ferro-liquid, iron, anaemia, anaemia of prematurity, iron deficiency, ferrous sulfate heptahydrate	



Quick guide: elemental iron (6 mg/mL) oral

Elemental iron dosage 2–3 mg/kg/day		
Use the oral solution of elemental iron 6 mg/mL	Less than 1500 g	1500 g or more
Volume to administer	0.5 mL daily	0.5 mL every 12 hours

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References

1. National Blood Authority. Paediatric and neonatal iron deficiency anaemia guide. [Internet]. 2017 [cited 2019 October 17]. Available from: <https://www.blood.gov.au>.
2. Agostoni C, Buonocore G, Carnielli VP, De Curtis M, Darmaun D, Decsi T, et al. Enteral nutrient supply for preterm infants: commentary from the European Society of Paediatric Gastroenterology, Hepatology and Nutrition Committee on Nutrition. *J Pediatr Gastroenterol Nutr* 2010;50(1):85-91.
3. Australian Medicines Handbook Children's Dosing Companion. Iron. [Internet]. Adelaide: Australian Medicines Handbook Pty Ltd; January 2019 [cited 2019 May 27]. Available from: <https://amhonline.amh.net.au>.
4. Davies M, Cartwright D, Inglis G. *Pocket Notes on Neonatology*. 2nd ed. NSW: Elsevier; 2008.
5. Domellof M, Braegger C, Campoy C, Colomb V, Decsi T, Fewtrell M, et al. on behalf of the ESPGHAN committee on nutrition. Iron requirements of infants and toddlers. *J Pediatr Gastroenterol Nutr* 2014;58(1):119-29.
6. National Blood Authority. Patient blood management guideline: module 6 – neonatal and paediatrics. [Internet]. 2016 [cited 2019 October 17]. Available from: <https://www.blood.gov.au>.
7. British National Formulary for Children (BNFC) online. Ferrous sulphate. [Internet]: Royal Pharmaceutical Society; March 2019 [cited 2019 May 27]. Available from: <https://www.medicinescomplete.com>.
8. IBM Micromedex®/Neofax®. Ferrous sulfate. In: IBM Micromedex® NeoFax®/Pediatrics (electronic version). [Internet]. IBM Watson Health, Greenwood Village, Colorado, USA. October 2019 [cited 2019 October 21]. Available from: <https://www.micromedexsolutions.com>.
9. Aher SM, Ohlsson A. Late erythropoiesis-stimulating agents to prevent red blood cell transfusion in preterm or low birth weight infants. *Cochrane Database of Systematic Reviews*. [Internet]. 2019 [cited 2019 November 07]; Issue 2. Art. No.: CD004868 DOI:10.1002/14651858.CD004868.pub5.
10. IBM Micromedex®. Iron. In IBM Micromedex® (electronic version). Greenwood Village, Colorado, USA. 2019 [cited 2019 May 27]. Available from: <https://www.micromedexsolutions.com>.
11. MIMS Online. Ferrous sulfate. [Internet]: MIMS Australia; April 2005 [cited 2019 March 8]. Available from: <https://www.mimsonline.com.au>.

Document history

ID number	Effective	Review	Summary of updates
NMedQ20.036-V1-R25	01/03/2020	01/03/2025	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)
NMedQ20.036-V2-R25	03/03/2021	01/03/2025	<ul style="list-style-type: none"> • Amended product expiry date information to include local unit policy • Added QR code

QR code