

Iron dosing and administration in adults

Oral iron can be dosed in various regimens to optimize absorption or minimize side effects. Aim for every other day dosing to potentially improve absorption. Parenteral iron products are significantly more expensive and have differing dosing regimens.

Oral Iron Dosing

Adult target dose is 100-200 mg elemental iron per day

Iron Type (elemental iron content)	Relative Cost per Month [★]	Dosing Considerations
Ferrous gluconate 300 mg (35 mg elemental)	~\$1-15	<ul style="list-style-type: none"> Give dose every second day or three times weekly to improve absorption^{2,3}
Ferrous sulfate 300 mg (60 mg elemental)	~\$1-15	<ul style="list-style-type: none"> To improve oral iron tolerance, start at a lower dose and increase dose slowly every few days if tolerated
Ferrous sulfate 30 mg/mL syrup (6 mg/mL elemental)	~\$1-15	<ul style="list-style-type: none"> Oral dosing for at least 3 months to replenish iron stores Liquids may stain teeth but allow for smaller dose titrations
Ferrous fumarate 300 mg (100 mg elemental)	~\$1-15	<ul style="list-style-type: none"> Avoid enteric-coated and sustained release products due to decreased absorption
Ferrous fumarate 60 mg/mL suspension (20 mg/mL elemental)	~\$1-15	<ul style="list-style-type: none"> Heme and polysaccharide formulations are not more efficacious, but may be better tolerated if a patient cannot tolerate regular iron salts
Heme iron polypeptide 11 mg (Proferrin®) (not equivalent to elemental dosing)	\$17-22	
Polysaccharide iron complex 150 mg (Feramax®)	\$8-15	

★ Estimated drug costs only based on common dosing regimen, does not include additional supply and nursing costs with IV formulations. Based on retail drug costs (per AHS Pharmacy Procurement team) not including pharmacy professional fees; AHS contract price may be different than shown.

IV Iron Dosing

Total replacement dose based on calculated iron deficit:

Dose in mg = actual body weight (kg) x (target Hgb – actual Hgb in g/L) x 0.24 + depot iron (mg)[†]

[†]Depot iron if weight 35 kg or less = 15 mg/kg, if weight more than 35 kg = 500 mg

After total replacement dose completed, need for ongoing IV doses should be re-assessed monthly

Iron Product	Common Dose Regimens	Max Dose	Relative Cost per Month [★]	Dosing Administration & Considerations
Iron sucrose (Venofer®) 100 mg/5 mL vial	200 - 300 mg given every 3-7 days ¹	500 mg/dose ¹	\$335-375	<ul style="list-style-type: none"> 300 mg doses are given over 90 minutes¹
Sodium ferric gluconate (Ferrlecit®) 62.5 mg/5 mL amp	125 mg given once or twice weekly x 8 doses ¹	250 mg/dose ¹	\$225-455	<ul style="list-style-type: none"> Small published trial used 250 mg twice daily. Doses above 125 mg associated with increased adverse events¹ 125 mg dose given over 10-60 minutes (max rate 12.5 mg/min); 60 minutes usual¹ Typically used in dialysis population
Iron isomaltoside 1000 (Monoferric®) 100 mg/mL vial (1 mL, 5 mL, 10 mL)	1000-1500 mg given once	20 mg/kg/dose up to a max of 1500 mg/dose	\$450-675	<ul style="list-style-type: none"> Doses up to 1000 mg given over 20 minutes. Doses over 1000 mg given over at least 30 minutes⁴ Doses above 20 mg/kg should be divided into at least 2 doses⁴ Doses up to 500 mg can be given IV push over 2 minutes once per week⁴ Not reviewed – Do not provide AHS formulary status

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References

1. Alberta Health Services Provincial Parenteral Manual. Available at: <https://insite.albertahealthservices.ca/phm/Page7575.aspx>
2. Stoffel NU, Cercamondi CI, Zeder C, et al. Iron absorption from oral iron supplements given on consecutive versus alternate days and as a single morning dose versus twice-daily split dosing in iron-depleted women: two open-label, randomized controlled trials. *Lancet Haematology* 2017; 4:524-33.
3. Lexi-Comp [database on the Internet]. Hudson, OH: Lexi-Comp Inc. c.1978 - [Dec 20, 2019]. Available from: <https://online.lexi.com/lco/action/home>.
4. Monferric® product monograph. Available online at: <https://health-products.canada.ca/dpd-bdpp/index-eng.jsp>. Accessed Dec 18, 2019.