

MAXOFER[®]plus

Maximum Availability Iron & B9
Maximum Tolerability



Slow Release Iron + Folic Acid
None Ionic Stable Complex

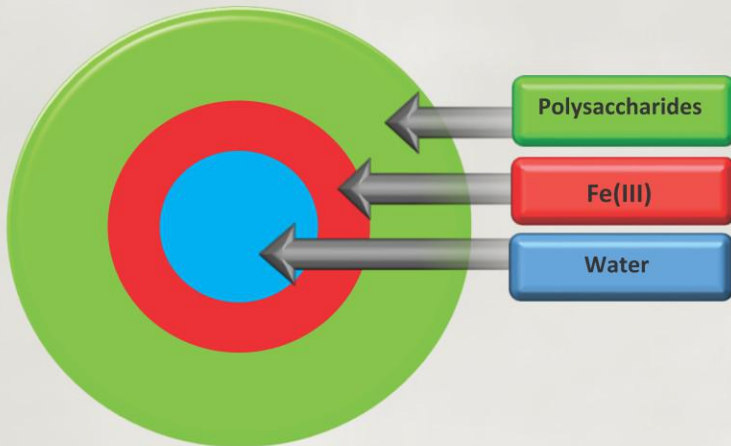


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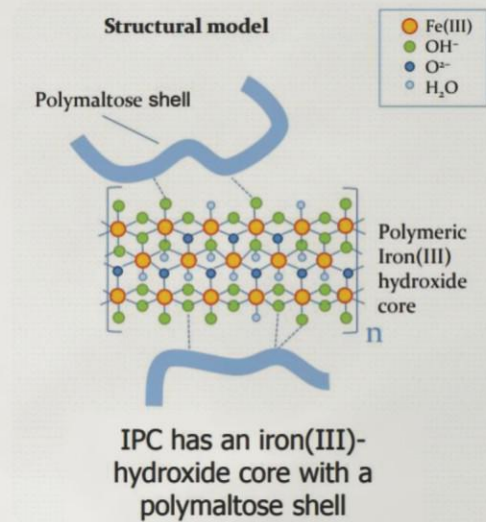
Iron(III)-hydroxide Polymaltose Complex

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- IPC is an iron preparation, which contains non-ionic iron and polymaltose in a stable complex.
- The polynuclear iron(III)-hydroxide cores are superficially surrounded by a number of non-covalently bound Polymaltose molecules.



{Typical structure of iron hydroxide polymaltose complex}



Superiority of IPC

- The well-hydrated microspheres of polysaccharide iron remain in solution over a wide pH range.
- Absorption of IPC is not affected by milk and other foods
- IPC is enabling administration without consideration of the timing of feed
- there have been no reports of any interactions with foods or medicines
- Bioavailability has been described as similar to best products
- IPC has no deleterious effect on copper and zinc
- Accidental intoxication with IPC is therefore rarely seen

Maxofer has no no detrimental interactions with a number of common food components and other drugs

Co-medications	Food components
no interactions shown with: <ul style="list-style-type: none"> Tetracycline Aluminium hydroxide Acetylsalicylate Sulphasalazine Calcium carbonate, calcium acetate and calcium phosphate plus vitamin D3 Bromazepam Magnesium aspartate D-penicillamine Methyldopa Paracetamol Auranofin 	no interactions shown with: <ul style="list-style-type: none"> Phytic acid Oxalic acid Sodium alginate Vitamin D3 and vitamin E Soya oil and soya flour Choline and choline salts Tannin Vitamin A
<ul style="list-style-type: none"> No reduction in IPC absorption by aluminium hydroxide and tetracycline No decline in plasma tetracycline level 	Increased iron absorption with vitamin C

Inferiorities of Ferrous sulphate:

- People who supplemented with ferrous sulfate were found to have lower plasma copper levels after one month of supplementation.
- LD50 of ferrous sulfate is 350 mg/kg, while the LD50 of IPC could not be recorded even at doses of over 2000 mg/kg.

Tables of adverse reactions:

- Total patients with adverse drug reactions, relative risk IPC/ferrous sulfate = 0.44.

	IPC (%)	FeSO4 (%)	Chi-square	Relative risk
Jacobs et al. [18]	14.0	70.0	p<0.001	0.20
Langstaff et al. [8]	20.0	23.0	N.S.	0.87
Reddy et al. [22]	24.0	28.0	N.S.	0.86
Sas et al. [23]	5.0	10.0	N.S.	0.50
Bogdanova et al. [13]	2.6	26.7	p<0.01	0.10
Total adults	14.9	34.1	p<0.001	0.44

- Most frequently reported adverse drug reactions in 5 comparative adult trials.

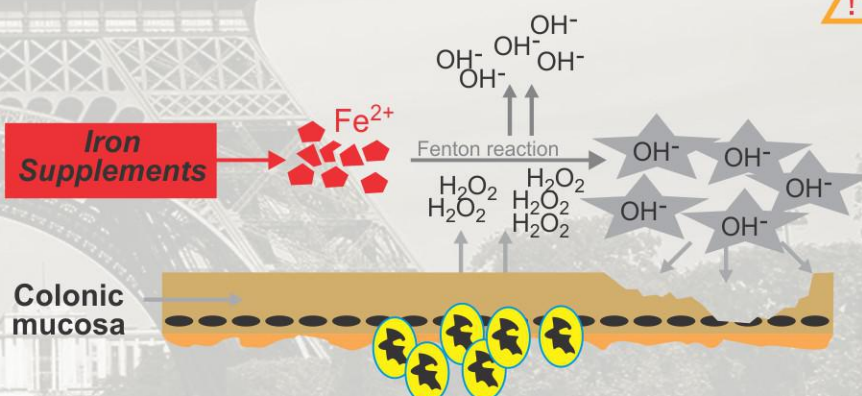
	IPC (%)	FeSO4 (%)	Chi-square	Relative risk
Stained teeth	0.7	7.7	p<0.001	0.09
Upper digestive troubles incl. nausea	13.1	45.7	p<0.001	0.29
Diarrhea	5.9	15.4	p<0.001	0.38
Constipation and infrequent adverse reactions	8.7	15.9	p<0.05	0.55

Jorge E Toblli, Reto Brignoli: 2007;57(6A):431-8.

Ferrous sulphate tissue damage

○ Ferrous (Fe²⁺) iron and gastrointestinal events

Fenton reaction causes tissue injury



⚠ Fe²⁺ reacts with neutrophil-produced H₂O₂ yielding hydroxyl radical OH• causes tissue damage and ulcers.

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Maximum Iron Availability
Maximum Pleasure

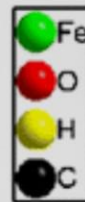
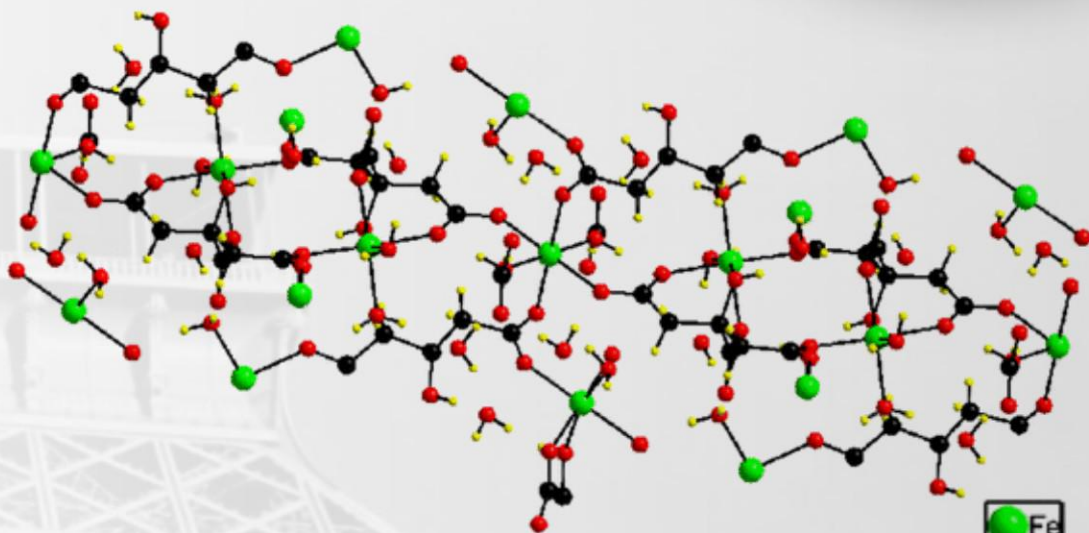
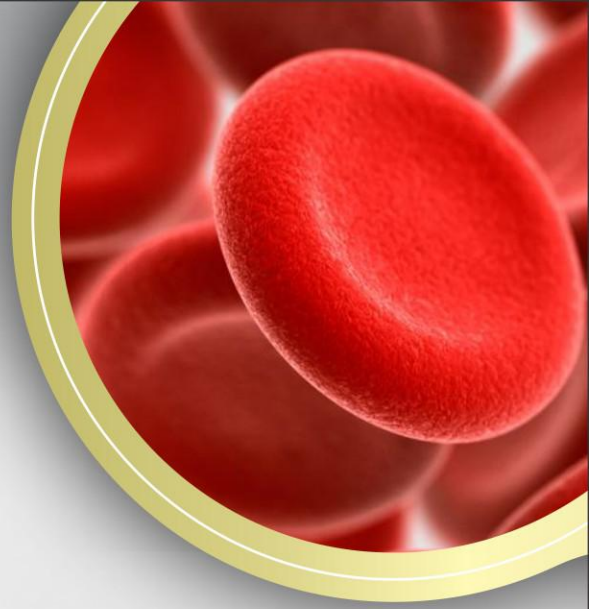


Slow Release Iron
None Ionic Stable Complex



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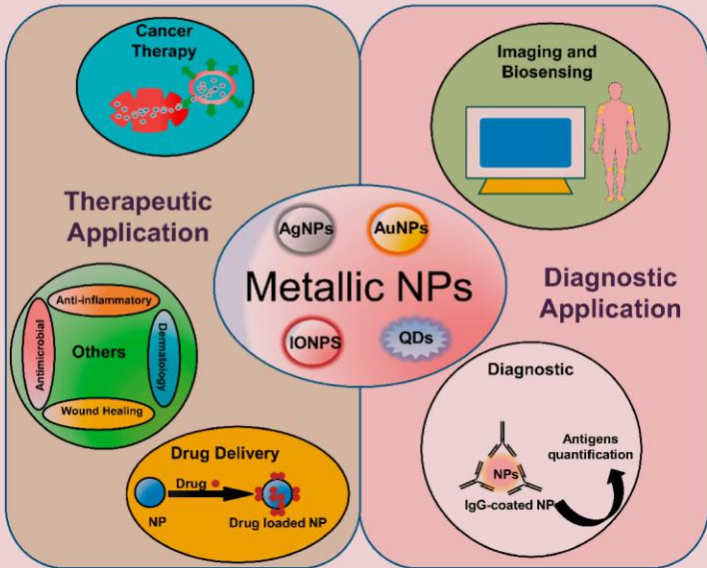
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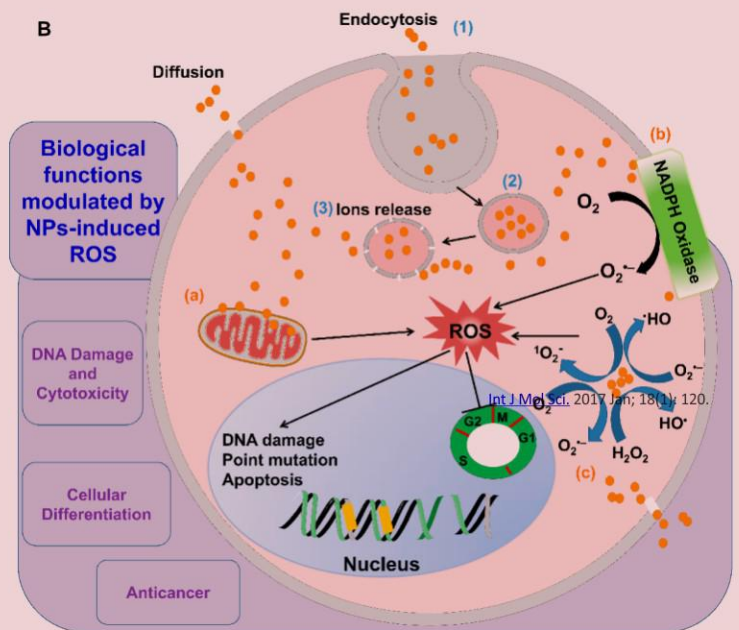
Minimize
Side Effects & Reactions Concern

- The biomedical applications of metallic NPs (Nanoparticle) and the mechanisms of NP-mediated ROS generation. (A) Summary of the nanomaterial applications in the medical field; (B) schematic diagram describing the mechanisms implicated in NP-induced ROS production.

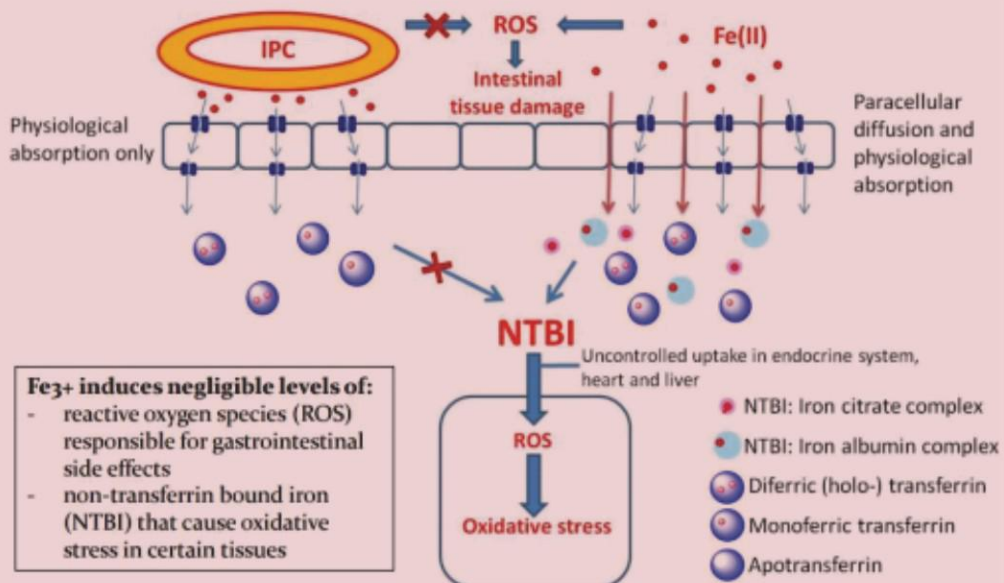
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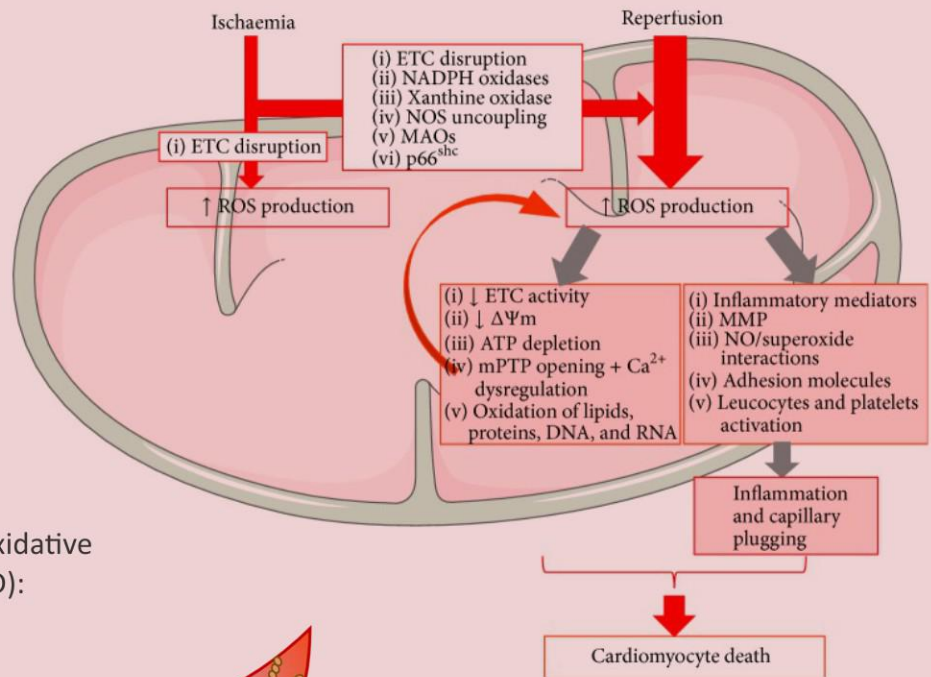
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- First clinical trial data indicate that newer oral compounds such as ferric maltol and sucrosomial iron offer improved tolerability and may thus offer a viable alternative for the future.

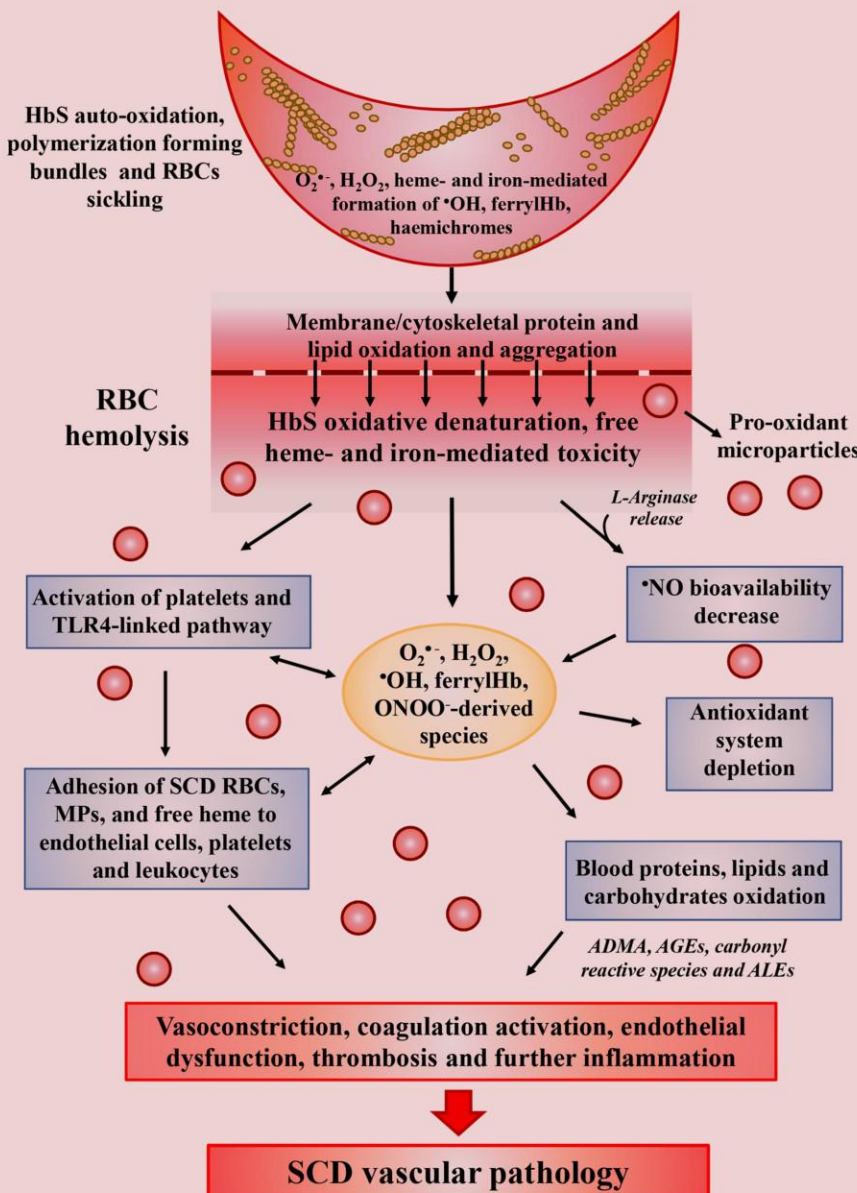


The Role of Mitochondrial Reactive Oxygen Species in Cardiovascular Injury and Protective Strategies:



Oxid Med Cell Longev. 2016; 2016: 8254942.

Pathophysiological effects of oxidative stress in sickle cell disease (SCD):





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IPC remain in solution over a wide pH range

IPC has no deleterious effect on copper & zinc

IPC can be administered without consideration of timing of feed

IPC Superiority

Bioavailability has been described as similar to best iron products

Absorption of IPC is not affected by milk and other foods

there have been no reports of any interactions with foods or medicines



Realize
Slow Release Iron Concept

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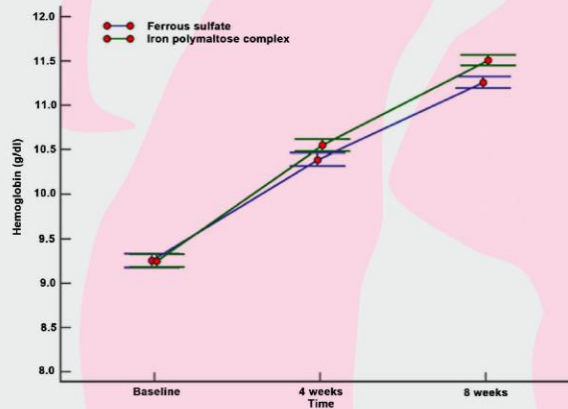
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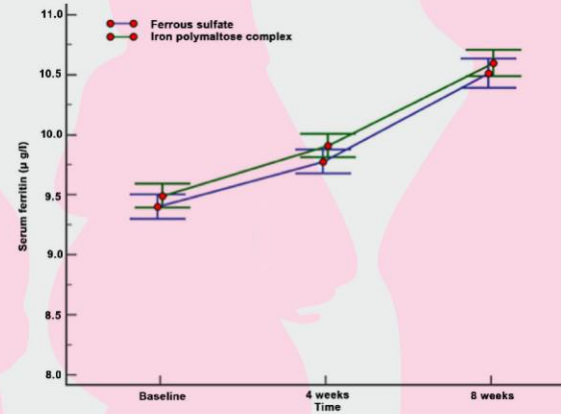
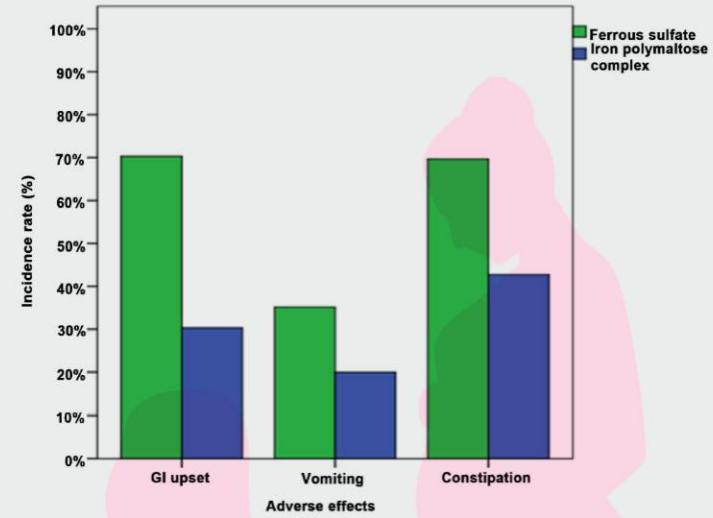
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Oral iron polymaltose complex increases Hemoglobin and serum ferritin levels more than oral ferrous sulfate and produces less adverse effects than ferrous sulfate.

Open Journal of Obstetrics and Gynecology, 2018, 8, 1084-1093



Mean hemoglobin level in both study groups. Error bars represent the standard error of the mean (SEM).



Mean serum ferritin level in both study groups. Error bars represent the standard error of the mean (SEM).



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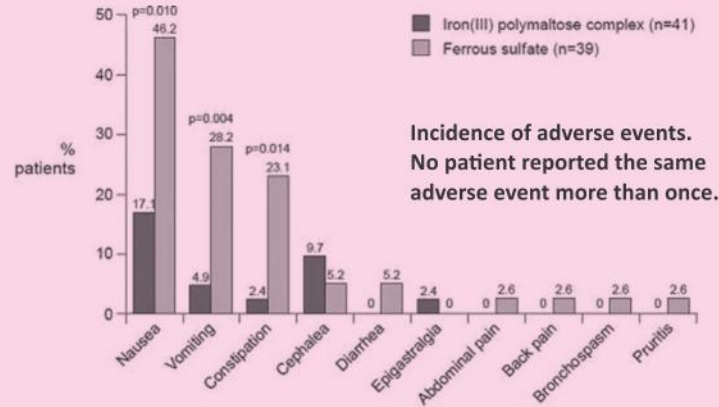


Ferrous versus Ferric Oral Iron Formulations for the Treatment of Iron Deficiency: A Clinical Overview

Differences between bivalent and trivalent oral iron preparations.

Iron supplement	Comments
Bivalent	
Ferrous fumarate (Fe ²⁺)	More adverse effects if not in a prolonged-release formulation
Ferrous gluconate (Fe ²⁺)	
Ferrous sulphate (Fe ²⁺)	
Ferrous glycine sulphate (Fe ²⁺)	
Trivalent	
Iron protein succinylate (Fe ³⁺)	Poorer absorption
Iron polymaltose complex (Fe ³⁺)	More expensive A greater number of intakes

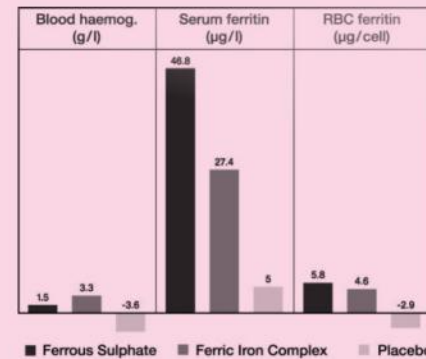
The Scientific World Journal Volume 2012



Efficacy and safety of oral iron(III) polymaltose complex versus ferrous sulfate in pregnant women with iron-deficiency anemia: a multicenter, randomized, controlled study

The Journal of Maternal-Fetal and Neonatal Medicine, 2011,

Safety and efficacy of iron (III)-hydroxide polymaltose complex: A review of over 25 years experience



Ferritin values. Changes in iron status in iron depleted male subjects after 6 months iron therapy with FeSO₄, IPC and placebo

(Tuomainen 1999 [34]).