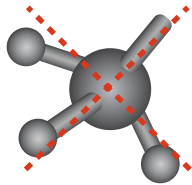
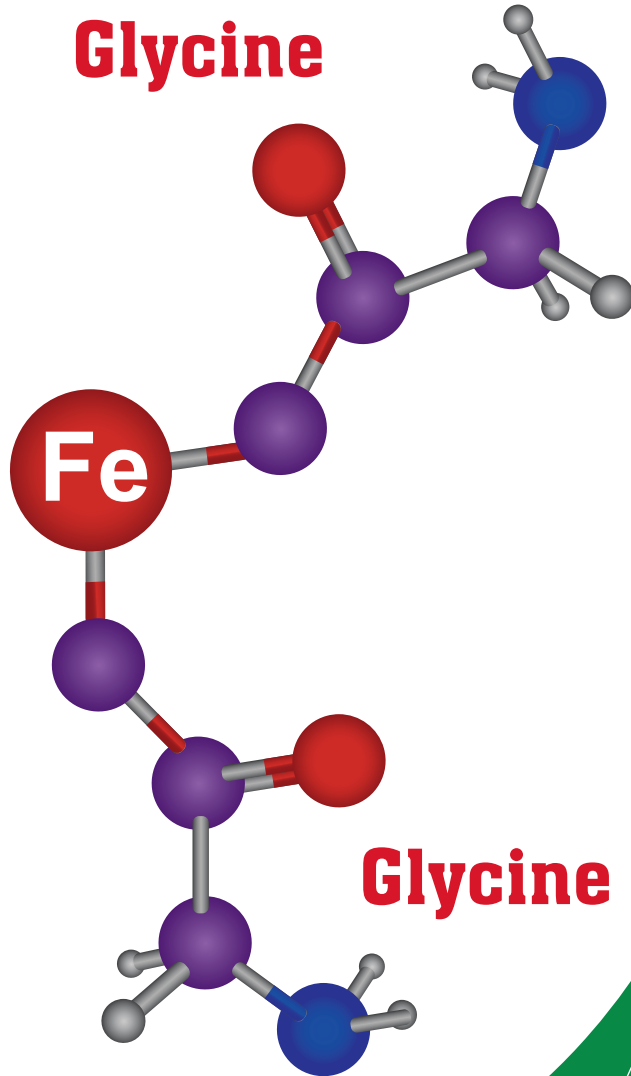




**Glycine**



**sulfate**

**Glycine**

# BISRON®

Ferrous Bisglycinate + Folic acid + Vitamin C

- Supports normal formation of red blood cells and hemoglobin
- Prevention of anemia
- Relief of tiredness and fatigue
- Well tolerated and highly absorbed
- Immune booster

Anemia is a common medical problem that is frequently diagnosed and treated by family physicians. Iron deficiency, the most common cause of anemia, may be treated with oral iron supplements, or less frequently with parenteral iron. Supplements are especially important when an individual is experiencing clinical symptoms of iron deficiency anemia. The goal of providing oral iron supplements is to supply sufficient iron to restore normal iron stores and replenish hemoglobin deficits.

Chelation is a chemical bonding process results from the reaction of a metal ion from a soluble salt with amino acids. Ferrous bisglycinate is highly stable amino acid chelate which is formed by the binding of two molecules of glycine to one Fe<sup>2+</sup> atom. It is absorbed intact into the intestinal mucosal cells and then the iron is dissociated from ferrous bisglycinate followed by distribution to the tissues.

Ferrous bisglycinate consists of 2:1 molecule of ferrous iron attached to two molecules of glycine. The iron is bound to the carboxyl group of glycine in an anionic bond, and to the amino group in a coordinated, covalent bond, to form two heterocyclic rings. This structure may protect iron from interactions with dietary inhibitors of iron absorption This provides a high bioavailability of iron with the less likely GIT adverse effects.

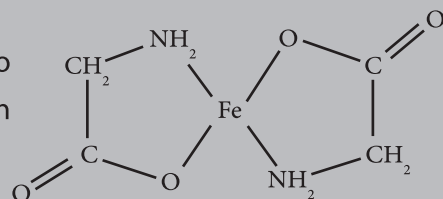
The main disadvantage of traditional ferrous salts is the frequent gastrointestinal (GIT) side effects as nausea, vomiting, abdominal colic and constipation.

This definitely affects the patients' adherence to treatment and the efficacy of iron preparation. On the other hand, amino acid chelated iron preparations had a lower GIT side effects and more rapid effect than ferrous salts.

Ferrous bisglycinate was more rapidly and effectively established normalized HB levels and replenishing iron stores than ferrous glycine sulphate.

Adverse effects of oral iron therapy are a common problem in the treatment of patients with IDA. In a study, ferrous bisglycinate was well tolerated in pregnant women during their second trimesters with fewer GIT adverse events than ferrous glycine sulphate. The safety profile was consistent with what has been previously reported about amino acid chelated iron preparations.

Ferrous bisglycinate is composed of two glycine molecules chelated to ferrous iron (Fe<sup>2+</sup>) ion by covalent bonds.



➤ Studies have shown that Iron bisglycinate is associated with less gastrointestinal intolerance than ferrous sulfate, gluconate and fumar for a comparable dose of elemental iron but are more expensive.

➤ High bioavailability (3 times than ferrous sulfate)

➤ Absorbed better by the gut compared to other iron forms

Table 1 Side effects and discontinuation rates for the various iron supplement preparations

Preparation	N	Abdominal	Nausea	Vomiting	Constipation	Diarrhea	Dyspepsia	Any	Discontinued
Ferric polymaltose	56(12.4)	5(8.9)	2(8.9)	2(3.6)	16(28.6)	3(5.4)	1(1.8)	22(39.3)	12(21.4)
Ferrous fumarate	174(38.4)*	20(11.5)	30(17.2)	6(3.4)	57(32.5%)	14(8.0)	10(5.7)	98(56.3)	34(19.5)
Ferrous Sulfate (IR)	54(120.0)	5(9.3)	9(16.7)	2(3.7)	13(24.1)	4(7.0)	6(11.1)	29(53.7)	12(22.2)
Multivitamin with ferrous fumarate	38(8.4)	1(2.6)	2(5.3)	1(2.6)	4(10.5)	1(2.6)	0(0.0)	9(23.7)*	4(10.5)**
Ferric bisglycinate	33(7.3)	2(6.1)	2(6.1)	0(0.0)	6(18.2)	0(0.0)	0(0.0)	7(21.2)*	3(9.1)**
Ferrous sulfate (SR)	90(19.9)	9(10.0)	4(4.4)	2(2.2)	27(30.0)	7(7.8)	1(1.1)	39(43.3)	18(20.0)
Other	8(1.8)								
Total	453(100)	42(9.3)	49(10.8)	13(2.9)	124(27.4)	29(6.4)	18(4.0)	204(45.0)	83(18.3)

Taken from table: % with any side effects

Ferrous fumarate – 56%

Ferrous sulfate immediate release – 53%

Ferrous sulfate slow release – 43%

Ferrous bisglycinate – 21%

Folic acid (vitamin B9) is an essential vitamin for health at all ages because it participates in the manufacture of nucleotides, amino acids, neurotransmitters and some other vitamins. Therefore, its presence is very important for tissues that are growing rapidly, such as fetal tissues. Studies have shown that the lack of folic acid and disruption of its manufacturing pathways are involved in many diseases in early life and middle age.

Bisron® capsule contains 80 mg of iron with bisglycinate salt and 1 mg of folic acid along with vitamin C. The iron bisglycinate salt in Bisron®, in addition to its high absorption compared to other iron supplements, has less digestive side effects such as constipation, diarrhea, and nausea, and helps to prevent anemia caused by iron deficiency. Vitamin C is also effective in improving iron absorption and strengthening the immune system.

Amount and method of consumption:

In adults and children over 12 years of age, one capsule should be taken daily, preferably on an empty stomach, and if digestive complications occur, after a meal. If you need higher amounts, be sure to consult a doctor or pharmacist.