Iron Glycinate™

Clinical Applications
- Iron Deficiency Anemia/ Plummer-Vinson Syndrome
- Need for Supplemental Iron due to Age, Gender, Lifestyle
- Heavy Menstrual Periods
- Achlorhydria, Gastritis, Ulcer
- Social, Emotional, Learning Disorders, Breath-holding Spells in Children

Albion® fully-reacted chelates are absorbed as foods (i.e. Protein) and as such this form of Iron will not cause the constipation seen with inorganic iron supplements. Since these chelates are absorbed as food, they do not compete with other minerals (i.e. Zinc and Copper) for absorption. The two Glycine molecules that protect the Iron (see illustration) are precursors to the protein Hemoglobin. The (heme) component of hemoglobin is responsible for delivering iron and oxygen to peripheral tissues. Iron deficiency presents as fatigue and is most common in individuals who experience loss of blood (menstruation, ulcers).

Discussion
Ferrous iron is reacted with glycine to form bis-glycinate chelate, a non-electrically charged compound that is totally nutritionally functional. The absence of electrical charge, uncommon for an iron supplement, makes it less likely that Iron Glycinate™ can interfere with absorption of other minerals such as calcium, vitamin E or vitamin C. Iron solubility from iron bis-glycine chelate is not affected by pH changes from 2-6. This means it travels unchanged through the stomach, into the intestine, where it is absorbed and released for transport throughout the body.

Patient compliance with iron bis-glycinate appears to be better than that seen with inorganic forms of iron supplements for two reasons. First, the taste: In a study with 145 pregnant women (that concluded daily supplementation with iron bis-glycinate chelate was significantly more effective even at a lower dose than ferrous sulfate) the percentage of taste complaints among the women given ferrous sulfate was 29.8%, while 0% of the women on the bis-glycinate chelate complained about taste. Second, iron bis-glycinate is less likely to have any of the gastrointestinal side-effects associated with standard iron supplementation.

A published absorption study showed there was a significant correlation between iron absorption of iron bis-glycinate chelate to serum ferritin ($r = -0.60, p < 0.03$) (The higher the ferritin the lower the absorption and vice versa.) The amount of iron stored in the body regulates iron bis-glycinate chelate absorption. This translates into less chance of toxicity. Another benefit of the bis-glycinate chelate form of iron over other iron supplements is that it doesn’t act as a prooxidant.

Iron is an important component of hemoglobin, myoglobin, and ferritin. These proteins are involved in the transport, storage, and release of oxygen to the tissues.
Dosing

The safety of Iron bis-glycinate is assured by its presence on the GRAS list for food fortification. Furthermore, despite its high bioavailability, the “no observed adverse effect level” is greater than 500 mg/kg bw/day. The underlying cause for iron deficiency requires investigation before the start of supplementation and periodical labwork may be useful during supplementation.

The following information on the percent elemental iron content of different supplement forms will assist the practitioner in converting to XYMOGEN’s Iron Glycinate™: sulfate (20% iron), gluconate (12%), fumarate (33%), glycinate (27%), and ferric ammonium citrate (16.5%).

References

5. Hilal Mocan, Alisan Yildiran, Fazil Orhan, Erol Erduran. Breath holding spells in 91 children and response to treatment with iron Arch Dis Child 1999;81:261-262 (September) [http://adc.bmjournals.com/cgi/content/full/81/3/261] [Accessed 11.11.05]

Additional references available upon request.