High Absorption Iron
100% Chelated
with Ferrochel®

**BENEFITS**
- Ferrochel® Iron is chelated with bisglycinate amino acids, providing higher absorption and increased tolerability*
- Helps prevent iron deficiency*
- Helps support immune health*
- Helps support brain function*
- Helps support athletic performance for iron-deficient individuals*

**CLINICAL STUDIES**
One study evaluated the relative effectiveness of daily supplementation for iron deficiency during pregnancy using 15 mg/day of iron from iron-bis-glycinate chelate (71 pregnant women), or 40 mg iron from ferrous sulfate (74 pregnant women) by measuring hemoglobin, transferrin saturation and serum ferritin at the beginning of the study (<20 weeks of pregnancy), at 20-30 weeks and 30-40 weeks thereafter. Seventy three percent of the Ferrochel-consuming group and 35% of the ferrous sulfate-consuming group were considered to have taken the treatment adequately. Of the factors responsible for non-compliance, taste was reported in 29.8% of ferrous sulfate consumers and none in the Ferrochel group. The researchers concluded that daily supplementation with Ferrochel was significantly more effective, in spite of the lower dose, than supplementation with ferrous sulfate ¹.

Other researchers undertook a clinical trial to compare the effects of oral ferrous bisglycinate 25 mg iron/day vs. ferrous sulfate 50 mg iron/day in the prevention of iron deficiency (ID) and in pregnant women. The researchers employed a randomized, double-blind, intention-to-treat study of 80 healthy Danish pregnant women. Women were allocated to ferrous bisglycinate 25 mg elemental iron (n=40) or ferrous sulfate 50 mg elemental iron (n=40) from 15 to 19 weeks of gestation to delivery. The frequency of gastrointestinal complaints was lower in the bisglycinate than in the sulfate group. The researchers concluded that, in the prevention of ID, ferrous bisglycinate was not inferior to ferrous sulfate. Ferrous bisglycinate in a low dose of 25 mg iron/day appears to be adequate to prevent ID in more than 95% of Danish women during pregnancy and postpartum ².

Another study measured the effect of ferrous bisglycinate as fortificant in brown bread compared with that of electrolytic iron (Fe) among Fe-deficient school children in a randomized controlled trial. Children (n 160), aged 6-11 years, with serum ferritin <20 mcg/L were randomly assigned to one of three treatment categories: (i) standard unfortified bread; (ii) bread with electrolytic Fe as fortificant; and (iii) bread with ferrous bisglycinate as fortificant. Hemoglobin, serum ferritin, serum Fe and transferrin saturation were measured at baseline and at the end of the intervention. Significant

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treatment effects were observed for hemoglobin, serum Fe and transferrin saturation in the ferrous bisglycinate group, but not in the electrolytic Fe group. Overall, ferrous bisglycinate as Fe fortificant performed better than electrolytic Fe in a group of Fe-deficient school children over a period of 7.5 months.

A different study compared effects on ferritin concentration of daily supplementation with ferrous sulfate or iron bis-glycinate chelate in schoolchildren with iron deficiency but without anemia. Two hundred schoolchildren from public boarding schools in Mexico City who had low iron stores as assessed by serum ferritin concentration but without anemia were randomly assigned to a daily supplement of 30 mg/day of elemental iron as ferrous sulfate or iron bis-glycinate chelate for 12 weeks. Iron status was evaluated at baseline, one week post-supplementation (short term), and 6 months (medium term) after supplementation. The study concluded that supplementing with 30 mg/d of iron bisglycinate chelate for 90 days showed positive effects on increasing ferritin concentration in schoolchildren with low iron stores, and this effect persisted 6 months after supplementation.

Another study attempted to study the effects of iron supplementation in marginally low birth weight (MLBW) infants. In a randomized controlled trial, 285 healthy, MLBW infants received iron supplements at a dose of 0 (placebo), 1, or 2 mg/kg per day between 6 weeks and 6 months of age. Hemoglobin levels, ferritin levels, transferrin saturation, mean cell volume, and transferrin receptor levels were analyzed at 6 months. Iron supplementation resulted in significant dose-dependent effects on hemoglobin and all iron status indicators at 6 months. The study concluded that iron supplementation at 2 mg/kg per day from 6 weeks to 6 months effectively reduces iron deficiency risks, with no short-term adverse effects on morbidity or growth.

A different study attempted to determine the effect of prophylactic iron supplementation on iron status and birth outcomes among non-anemic pregnant women. A randomized, triple-blind clinical trial was conducted. One hundred forty-eight non-anemic pregnant women were randomly assigned to receive either ferrous sulfate (60 mg iron) or placebo until 16 wk of treatment (n = 113). After treatment, a significant improvement in hemoglobin and hematologic indices of female high school students was related to improved speed in completing the cognitive tasks. Iron status is a significant factor in cognitive performance in women of reproductive age. Severity of anemia primarily affects processing speed, and severity of iron deficiency affects accuracy of cognitive function over a broad range of tasks. The study concluded that the effects of iron deficiency on cognition are not limited to the developing brain.

A separate study aimed to identify the impact of weekly iron supplements on the attention function of female high school students. This was a blind, controlled, clinical trial study, involving 200 female students chosen randomly. The case group was treated with 50 mg of ferrous sulfate twice a week for 16 weeks. Both groups were compared for attention, iron status and erythrocyte indices. The study concluded that oral iron supplements (50 mg twice a week for 16 weeks) improved the attention span and hematologic indices of female high school students.

Other researchers conducted a randomized placebo-controlled trial to investigate effects of iron (Fe) supplementation on Fe status and performance in non-anemic female rowers. Forty rowers were randomized to receive either 100 mg/d FeSO4 (n = 21) or placebo (n = 19) using a double-blind design. Thirty-one (n = 15 Fe, 16 placebo) completed the 6-wk trial. Fe status (hemoglobin, serum ferritin, and soluble transferrin receptor), body composition, and laboratory tests of physical performance (4-km time trial, VO2peak, energetic EF, and blood lactate) were assessed at baseline and after training. The researchers concluded that female rowers with depleted Fe stores who consumed supplemental Fe improved their Fe status and energetic EF during endurance exercise. These results are important for athletes whose dietary patterns and physical training increase their risk of iron deficiency without anemia and suggest that Fe supplementation may maximize endurance training benefits.

Researchers wanted to determine whether iron supplementation could prevent decrements in iron status and improve measures of physical performance and cognitive status in female soldiers during basic combat training (BCT). In this 8-wk randomized, double-blind, placebo-controlled trial, soldier volunteers (n = 219) were provided capsules containing either 100 mg ferrous sulfate or a placebo. Iron status indicator assays were performed pre- and post-BCT. Two-mile running time was assessed post-BCT; mood was assessed by using the Profile of Mood States questionnaire pre- and post-BCT. Iron supplementation improved scores on the Profile of Mood States, and running time, in volunteers with iron deficiency anemia. The researchers concluded that iron supplementation may benefit mood and physical performance.

Another study tried to determine the effect of iron supplementation on iron status and endurance capacity. Twenty iron-deficient, non-anemic men and women (18-41 years) supplemented with iron in a randomized, double-blind study. Participants consumed 30 mg of elemental iron as ferrous sulfate or placebo daily for 6 weeks. Iron supplementation prevented decline in ventilatory threshold (VT) observed in placebo group from pre- to post-supplementation; this effect was greater in individuals with lower serum ferritin (sFer) before intervention. Changes in sFer from pre- to post-treatment were positively correlated with changes in VT, independent of supplementation. The iron group significantly increased gross energetic efficiency during the submaximal test. Changes in sFer were negatively correlated with changes in average respiratory exchange ratio during the submaximal test. The study concluded that iron supplementation significantly improves iron status and endurance capacity in iron-deficient, non-anemic trained male and female subjects.

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SCIENTIFIC REFERENCES


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