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-bisglycinate 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.

Other researchers investigated the effect of whey drink fortified with ferrous bisglycinate on hemoglobin values in children and adolescents. Hemoglobin was measured for 1 year with a HemoCue® portable photometer. Anemia was defined as hemoglobin values below 12 g/dL. Thus, hemoglobin was verified in 467 (7 to 14 yr) individuals (249 boys and 218 girls). There was a statistically significant anemia prevalence decrease from 41.9% at the beginning of the study to 26.4% after 6 mo and to 9.68% after 1 year. There was a marked reduction in the prevalence of anemia in children and adolescents after long-term fortification of whey drink with ferrous bisglycinate.

Another clinical trial included forty infants, 6 to 36 mo old, with iron-deficiency (hemoglobin <11 g/dL), matched and assigned to two groups. One group received FeSO(4) and the other received ferrous bisglycinate chelate at a dose of 5 mg of Fe daily per kilogram of body weight for 28 d. Both groups had significant hemoglobin increases (P < 0.001), but only the group treated with ferrous bisglycinate chelate had significant increases in plasma ferritin. Apparent iron bioavailability was calculated at 26.7% for FeSO4 and 90.9% for ferrous bisglycinate chelate. The study concluded that ferrous bisglycinate chelate is the iron of choice for treatment of infants with iron-deficiency because of its high bioavailability and good regulation.

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.

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,

Supplement Facts

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>1 Tablet</th>
<th>Servings Per Container</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount Per Serving</td>
<td>% DV** Adults</td>
<td>% DV** Pregnant and Lactating Women</td>
<td></td>
</tr>
<tr>
<td>Iron (from Ferrochel®, ferrous bisglycinate chelate)</td>
<td>27 mg</td>
<td>150%</td>
<td>100%</td>
</tr>
</tbody>
</table>

***% DV = % Daily Value

Other Ingredients: Microcrystalline cellulose, magnesium stearate (vegetable source), silicon dioxide, coating (hypromellose, hydroxypropyl cellulose, glycerin).

Suggested Adult Use: Take 1 tablet daily with food, or as recommended by a nutritionally-informed physician.

WARNING: Accidental overdose of iron-containing products is a leading cause of fatal poisoning in children under 6. Keep this product out of reach of children. In case of accidental overdose, call a doctor or poison control center immediately.

Non-GMO / Gluten Free / Soy Free / Vegan
Store in a cool dry place.

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.
serum Fe and transferrin saturation were measured at baseline and at the
effect of the intervention. Significant treatment effects were observed for
hemoglobin, serum Fe and transferrin saturation in the ferrous
dysglycine group, but not in the electrolytic Fe group. Overall, ferrous
dysglycine as Fe fortificant performed better than electrolytic Fe in a
group of Fe-deficient school children over a period of 7.5 months.5

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.6

Another study attempted to study the effects of iron supplementation in
marginally low birth weight (MLBW) infants. In a randomized
treatment 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
dery per day from 6 weeks to 6 months effectively reduces iron deficiency
risks, with no short-term adverse effects on morbidity or growth.7

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
delivery. Hemoglobin concentration and serum ferritin were measured by
electronic counter and radioimmunooassay, respectively. At delivery, iron
deficiency incidence was significantly lower in the iron than the placebo
group. There were no significant differences between the two groups in
maternal hemoglobin and ferritin concentrations at delivery or in the
infant’s birthweight, birth length, or length of gestation. The study concluded
that iron supplementation during pregnancy in non-anemic
women with low serum ferritin may have benefits beyond the prevention
of iron-deficiency.8

Iron is an important element participating in multiple metabolic
processes, including the synthesis of catecholamines. Iron deficiency (ID)
is particularly insidious on brain maturation and cognitive functions during
school age. A study tested whether iron affected working memory (WM)
in 8-10-year-old ID children. Event-related potentials (ERPs) were
recorded using a Sternberg-type task in control, ID and ID-iron
supplemented children. ID children showed less correct answers and
diminished ERP amplitude in frontal, central, parietal and temporal
regions compared to control children. After iron supplementation,
behavioral and ERP differences disappeared between ID and control
children. Considering that WM is fundamentally related to attention
ability, the results confirm and reinforce previous observations: ID
severely diminishes attention and WM, while iron supplementation
substantially restores cognitive capabilities.9

Another study aimed to examine the relation between iron status
and cognitive abilities in young women. A blinded, placebo-controlled,
stratified intervention study was conducted in women aged 18-35 y of
varied iron status, randomly assigned to receive iron supplements or a
placebo. Cognition was assessed by using 8 cognitive performance
tasks (from Detterman’s Cognitive Abilities Test) at baseline (n = 149)
and after 16 wk of treatment (n = 113). After treatment, a significant
improvement in serum ferritin was associated with a 5-7-fold
improvement in cognitive performance, whereas a significant
improvement in hemoglobin 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.10

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.11

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, V’O2peak, 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.12

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.13

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.14

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SCIENTIFIC REFERENCES


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