Ortho Iron

Superior Iron Supplementation

- Provides nutrients that prevent and treat iron deficiency anemia
- Contains a highly absorbable form of iron
- Includes nutrients and vitamins that aid in the body’s usage of iron
- Non-constipating formula that is easier on the stomach than other iron formulas

Details
Ortho Iron contains SunActive®, a superior form of iron shown to be better absorbed and much easier to tolerate than other iron products on the market. SunActive® contains ferric pyrophosphate, a type of iron that has been processed to reduce particle size for higher absorption, and is bound to a food grade emulsifier to prevent clustering. These two factors give it a bioavailability equal to that of pharmaceutical-grade iron prescriptions. Ortho Iron also contains several other nutrients that support iron absorption and prevent the oxidative effects associated with iron supplementation. These include Vitamin C, B6, B12, folate, lactoferrin, and copper; all of which are crucial for iron absorption and utilization.

Ortho Iron is a complete formula for the treatment of anemia, which can be caused not only by iron deficiency but also by deficiencies in vitamin B12 or folate. Iron deficiency, which can lead to anemia, is the most common nutritional disorder in the world with approximately 25% of the world's population being iron-deficient. However, even iron-deficiency states that do not lead to anemia may have detrimental effects on human health, including compromised cognitive function, overall weakness and fatigue, and a weakening of the immune system.

Pregnant and menstruating women are often at risk of iron deficiency, as are adolescents, endurance athletes, and anyone undergoing a condition of growth and/or fatigue or who has experienced blood
loss. Ortho Iron is the most advanced iron supplement for those with an iron deficiency, and is especially helpful for those who have experienced uncomfortable side effects such as constipation or nausea from conventional iron pills. Ortho Iron improves symptoms of iron-deficiency anemia such as fatigue and weakness, without the gastrointestinal side effects commonly associated with iron supplements.

**Label Info**

**Discussion**

Iron deficiency is the leading nutritional disorder in the world, and can cause anemia – leading to weakness, fatigue, and gastrointestinal difficulties. Ortho IronTM contains SunActive®Fe, an award-winning patented form of iron recognized for its superior bioavailability and gastric tolerability.

**Product Variation**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Size</th>
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<tbody>
<tr>
<td>AOR04157</td>
<td>30 VEGI-CAPS</td>
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<tr>
<td>AOR04318</td>
<td>60 VEGI-CAPS</td>
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**Supplements Facts**

<table>
<thead>
<tr>
<th>Serving Size: 1 Capsule</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Iron (SunActive®Fe* - ferric pyrophosphate)</td>
<td>30 mg</td>
</tr>
<tr>
<td>Lactoferrin (provides 14 mcg iron)</td>
<td>100 mg</td>
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<tr>
<td>Vitamin C (ascorbic acid)</td>
<td>200 mg</td>
</tr>
<tr>
<td>Vitamin B12 (Methylcobalamin)</td>
<td>647 mcg</td>
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<tr>
<td>Folic acid (calcium L-5-MTHF)</td>
<td>800 mcg</td>
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<td>Vitamin B6 (Pyridoxal-5’-phosphate)</td>
<td>25 mg</td>
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<tr>
<td>Copper (citrate)</td>
<td>900 mcg</td>
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*SunActive®Fe is a registered trademark of Taiyo International, Inc.

Non-medical ingredients:

- microcrystalline cellulose, and sodium stearyl fumarate. Capsule: hypromellose.

**Guarantees**

AOR™ guarantees that all ingredients have been declared on the label. Contains no wheat, gluten, corn, nuts, peanuts, sesame seeds, sulphites, mustard, eggs, fish or shellfish.

**Adult Dosage**

Take 1 capsule daily with food, or as directed by a qualified health care practitioner. Take a few hours before or after taking other medications.

**Cautions**

**KEEP OUT OF THE REACH OF CHILDREN.** There is enough iron in this package to seriously harm a child.
Taking a daily prenatal multi-vitamin/mineral supplement along with this product may result in constipation, diarrhea, and/or vomiting due to the high intake of iron. Consult a health care practitioner prior to use if you are allergic to cow’s milk/dairy products.

Source

Lactoferrin - New Zealand bovine milk
Pharmaceutical synthesis

Main Application

Iron deficiency anemia
Anemia of pregnancy
Iron deficiency
Athletes with high iron requirements
Heavy menstrual flow

Disclaimer

The information and product descriptions appearing on this website are for information purposes only, and are not intended to provide or replace medical advice to individuals from a qualified health care professional. Consult with your physician if you have any health concerns, and before initiating any new diet, exercise, supplement, or other lifestyle changes.

Research

Background

Iron Deficiency

Iron is a fundamentally essential trace mineral in human nutrition. Atomic number 26 on the Periodic Table, it is involved in the entire process of respiration, particularly oxygen and electron transport, as well as possessing immune system and cognition-enhancing capabilities. Iron deficiency, which can lead to anemia, is the most common nutritional disorder in the world, with approximately 25% of the world’s population being iron-deficient. Even iron-deficiency states that do not lead to anemia may have sweepingly detrimental effects on human health, including compromised cognitive function, overall weakness and fatigue, and a weakening of the immune system.

Ortho-Iron for Maximum Absorption

The best dietary sources of iron are spinach, chard, thyme and turmeric. However, not all forms of dietary or supplementary iron are equally beneficial. One form, namely Ferric pyrophosphate, has been shown in animal studies to be more bioavailable than other more common forms of iron such as ferrous sulphate and sodium ferrous citrate. It is also more stable and is less prone to oxidation. Other nutrients have been shown to improve blood iron and hemoglobin levels as well. These include
lactoferrin – an iron carrying protein – and vitamin C, a well-known antioxidant that also improves iron absorption. Other nutrients such as vitamin B12, folate, vitamin B6 and copper can also ensure that other anemias related to the aforementioned nutrients do not go untreated. Ortho•Iron combines all of these important nutrients in a true orthomolecular formula to ensure maximal iron absorption and usage.

Iron for Energy

Hemoglobin is a protein component of red blood cells that is primarily responsible for the transport of oxygen from the lungs to the cells of the body, and iron is a central component of hemoglobin. When the body oxidizes food energy, electrons are transported across electron-carrier proteins called cytochromes. These electrons are combined with oxygen to produce water by the enzyme cytochrome oxidase. Both cytochromes and cytochrome oxidase are heavily dependent on iron for their synthesis and function. This makes iron fundamental to the electron transport reactions that produce energy in the mitochondria. Iron is also involved in the production of myoglobin, L-carnitine and aconitase, all of which also perform important functions with regard to energy production in the body.

Nerve Health & Immunity

In addition to its fundamental roles in energy production, iron is involved in DNA synthesis and may also play roles in normal brain development and immune function. Furthermore, iron is involved in the synthesis of serotonin, dopamine, norepinephrine and even collagen. The most well-known condition of iron deficiency is of course anemia, which is associated with feelings of weakness and fatigue. Other conditions associated with iron deficiency include Plummer-Vinson syndrome, a condition characterized by difficulty in swallowing solid food due to the presence of a thin, web-like membrane growing across the upper passageway of the esophagus. Those with Plummer-Vinson syndrome are at an increased risk of cancer of the esophagus and stomach, and iron supplementation has been shown to prevent this syndrome.

Who Is At Risk?

Pregnant and menstruating women are often at risk of iron deficiency (and consequently anemia), as are infants, adolescents, endurance athletes, and those under any other condition of growth and/or fatigue generating an increased cellular demand for oxygen. The loss of iron – and thus the need for supplementation – also occurs during conditions of blood loss such as uterine bleeding in post-menopausal women on hormone replacement therapy, gastrointestinal bleeding, and bleeding from trauma or surgery. Some iron loss can also occur through mucosal excretions and skin sloughing.

Iron Metabolism

The proper metabolism of iron is exceptionally important and highly biologically regulated due to the fact that the body has no way of excreting excess amounts of it. Iron absorption can vary considerably, ranging from 10-35% for someone with sufficient iron stores, to as high as 95% for those with iron deficiencies. Upon ingestion, iron shifts between its two oxidative states – ferrous (II) and ferric (III). This shift back and forth via single electron-transfer reactions, while making iron essential in the electron transport chain, can also generate reactive oxygen species hydroxyl radicals. It is in the form of ferric (III) however, that iron is bound to transferrin, a liver-generated protein that is primarily responsible for distributing iron throughout the bloodstream. It eventually enters the cell
mitochondria where it is combined with protoporphyrin to form heme for the purpose of hemoglobin synthesis. Between 70-90% of this tranferrin-bound iron is designated for hemoglobin synthesis, with the majority of the remainder used for the electron transfer chain.

Excess iron is stored in the body as ferritin, a unique protein whose main function is the storage of iron and is located mainly in the liver but also in the spleen, bone marrow, intestines and other organs. This iron can be released from ferritin and re-transported into the plasma by transferrin if the demand for hemoglobin is warranted. The body has a very limited capacity to excrete excess iron, with only tiny amounts being excreted through the kidneys, liver, bile ducts and gall bladder.

Research

Adolescent Girls

It has been reported that up to one-quarter of adolescent schoolgirls in North America are non-anemia iron-deficient. In one double-blind, placebo-controlled study, female adolescent subjects received either 650 milligrams of iron twice daily or a placebo for eight weeks in order to examine its effects on cognitive function. The subjects in the study group were reported to perform significantly better than those in the placebo group on learning and memory tests.

Infantile Breath Holding

Expiratory apnea or Breath Holding Spells (BHS) is a condition affecting infants that is characterized by spells of involuntary breath-holding, usually during a stressful event that elicits crying on the part of the child. In one study, the frequency of (BHS) spells diminished significantly with iron supplementation. Children with this disorder who were given 5 mg of iron per kg of bodyweight each day for 16 weeks experienced 88% complete or partial improvement – compared with 6% in the placebo group.

Iron Deficiency Can Contribute to Length of Hospital Stay

While there are no concise figures on iron deficiency, it is now generally accepted that it is more widespread than initially believed. One study revealed that functional iron deficiency existed in 35% of a group of 51 adult patients at the general intensive care unit of a teaching hospital over a six-week period. This was in spite of the fact that in this study, patients with recent massive hemorrhage or exchange transfusion, those who were pregnant or lactating, those older than 80 years, those with hematological malignant disorders and those with bone marrow depression were excluded. Furthermore, patients with functional iron deficiencies had to endure hospital stays that were more than twice as long as those without functional iron deficiencies.

Market Trends

Iron deficiency is can be a serious problem for some people. There are several forms of iron supplements and drugs available including ferrous gluconate, ferrous fumarate, ferrous sulphate, iron polysaccharide, carbonyl iron among others. Some iron supplements are better absorbed than others
and have less of a risk of causing stomach upset.

**AOR Advantage**

Ortho•Iron™ contains SunActive®Fe iron, a registered form of iron that animal studies have shown to be more bioavailable than other more common forms of iron such as ferrous sulphate and sodium ferrous citrate. SunActive®Fe has 84-94% absorbability, is much easier on the stomach than other forms of iron and is non-constipating.

**References**


**Abstract**

**Oral administration of lactoferrin increases hemoglobin and total serum iron in pregnant women.**


Paesano R, Torcia F, Berlutti F, Pacifici E, Ebano V, Moscarini M and Valenti P.

Iron deficiency anemia (IDA) during pregnancy continues to be of world-wide concern. IDA is a risk factor for preterm delivery and subsequent low birth weight, and possibly for poor neonatal health. Iron supplementation in pregnancy is a widely recommended practice, yet intervention programs have met with many controversies. In our study, 300 women at different trimesters of pregnancy were enrolled in a trial of oral administration of ferrous sulfate (520 mg once a day) or 30% iron-saturated bovine lactoferrin (bLf) (100 mg twice a day). Pregnant women refusing treatment represented the control group. In this group hemoglobin and total serum iron values measured after 30 d without treatment decreased significantly, especially in women at 18-31 weeks of pregnancy. In contrast, after 30 d of oral administration of bLf, hemoglobin and total serum iron values increased and to a greater extent than those observed in women treated orally for 30 d with ferrous sulfate, independently of the
trimester of pregnancy. Unlike ferrous sulfate, bLf did not result in any side effects. These findings lead us to hypothesize that lactoferrin could influence iron homeostasis directly or through other proteins involved in iron transport out of the intestinal cells into the blood.

A micronised, dispersible ferric pyrophosphate with high relative bioavailability in man.


Fidler MC, Walczyk T, Davidsson L, Zeder C, Sakaguchi N, Juneja LR, Hurrell RF.

Ferric pyrophosphate is a water-insoluble Fe compound used to fortify infant cereals and chocolate-drink powders as it causes no organoleptic changes to the food vehicle. However, it is only of low absorption in man. Recently, an innovative ferric pyrophosphate has been developed (Sunactive Fe trade mark) based on small-particle-size ferric pyrophosphate (average size 0.3 microm) mixed with emulsifiers, so that it remains in suspension in liquid products. The aim of the present studies was to compare Fe absorption of micronised, dispersible ferric pyrophosphate (Sunactive Fe trade mark) with that of ferrous sulfate in an infant cereal and a yoghurt drink. Two separate Fe absorption studies were made in adult women (ten women/study). Fe absorption was based on the erythrocyte incorporation of stable isotopes ((57)Fe and (58)Fe) 14 d after the intake of labelled test meals of infant cereal (study 1) or yoghurt drink (study 2). Each test meal was fortified with 5 mg Fe as ferrous sulfate or micronised, dispersible ferric pyrophosphate. Results are presented as geometric means. There was no statistically significant difference between Fe absorption from micronised, dispersible ferric pyrophosphate- and ferrous sulfate-fortified infant cereal (3.4 and 4.1 % respectively; P=0.24) and yoghurt drink (3.9 and 4.2 % respectively; P=0.72). The results of the present studies show that micronised, dispersible ferric pyrophosphate is as well absorbed as ferrous sulfate in adults. The high relative Fe bioavailability of micronised, dispersible ferric pyrophosphate indicates the potential usefulness of this compound for food fortification.

Iron absorption and bioavailability in rats of micronized dispersible ferric pyrophosphate.


Sakaguchi N, Rao TP, Nakata K, Nanbu H, Juneja LR.

Unlike commercial ferric pyrophosphate, micronized dispersible ferric pyrophosphate (MDFP: Sun-Active Fe) does not precipitate and is completely dispersible in liquid form. MDFP shows a sharp particle size distribution at a nanometer level, which is several times smaller than that of commercial ferric pyrophosphate. The bioavailability of MDFP was compared to ferric pyrophosphate, sodium ferrous citrate, and ferrous sulfate by three bioavailability tests in rats; namely the serum iron concentration curve, the hemoglobin regeneration efficiency, and Association of Official Analytical Chemists’ hemoglobin repletion test. The high area under curve value, a lag in peak time, and continued high serum iron concentration by MDFP over the other iron compounds indicates a sustained release of iron in the serum iron concentration curve method. MDFP showed the highest hemoglobin regeneration efficiency among all the iron compounds tested. The relative biological value of MDFP per unit of ferrous sulfate in each bioavailability test showed a high value as compared
to other iron compounds. The above results suggest that MDFP is an ideal compound with high bioavailability for iron fortification in various liquid applications.