



Ferritin Supplementation

DARTMOUTH

Iron is a micronutrient required for the formation of *hemoglobin*, an essential part of the red blood cells. Hemoglobin is responsible for red blood cells transporting oxygen to the muscles and carrying carbon dioxide away from the muscles. Iron is a component of myoglobin, in the muscles and important in the metabolism of carbohydrate and protein. **Ferritin** is a form of iron in bone marrow and indicate if the body's stores of iron are low.

Iron deficiency key points:

- Deficiency has a negative impact on athletic performance and overall health
- Deficiency is often a result of insufficient intake of dietary iron over a prolonged period, or regular losses of iron (via menses, sweat, injury and malabsorption).
- It is more common in these groups:
 - Females, especially active females
 - Adolescent
 - Vegetarians/vegans
 - Endurance athletes
- Deficiency can also be caused by:
 - Overall low-calorie intake
 - Poor absorption of iron due to interactions with medication (i.e., antacids, anti-inflammatories, etc)
 - Loss through sweat, feces, heavy periods, and urine during periods of heavy training

Symptoms of Iron Deficiency

- Fatigue
- Weakness
- Lack of stamina
- Delayed recovery
- Cold intolerance
- Shortness of breath
- Headaches
- Irritability
- Light headedness
- Compromised immunity

When do you need a supplement?

- After evaluation and recommendation by a medical provider.
- You should not consume supplemental iron unless indicated. Excessive iron intake can be associated with other health risks and should be avoided.
- Diagnosis of iron deficiency should include a dietary consult with the goal of moving athletes to a non-supplemental approach to preventing reoccurrence of deficiency.

Ferritin Level	What this means	Now what?
>50 ng/dl	Iron stores are optimal	✓ No action needed
30-50 ng/dL	Iron stores are border line low	<ul style="list-style-type: none"> ✓ Include more iron rich foods in your diet. ✓ Consume an over-the-counter multi-vitamin with iron supplement
<30 ng/dL	Iron stores are low	<ul style="list-style-type: none"> ✓ Include more iron rich foods in your diet ✓ Consume an iron supplement of 325 mg ferrous sulfate – 2x/day. This can be found over the counter at a pharmacy ✓ Recheck in 6 weeks.

What do look for in an iron supplement

1 mg of elemental iron is equivalent to 5 mg of ferrous sulfate. The average absorption of ferrous sulfate is 20%.

500-700 mg of ferrous sulfate = 100-150 mg of elemental iron

250-500 mg of ferrous sulfate = 50-100 mg of elemental iron

How to take your iron supplement

- ✓ With a meal
- ✓ With protein (especially animal protein, if possible)
- ✓ With vitamin C (oranges, orange juice, grapefruit, strawberries, etc.)
- ✓ Divide the doses, if possible, throughout the day
- ✓ Take before bed if the supplement causes nausea

Other key points to increase absorption:

- ✓ Do not take your iron supplement with a calcium supplement
- ✓ Do not take on an empty stomach

References

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Beth Wolfgram MS, RD, CSSD, CSCS
Sports Dietitian