

Team Physician Statement on Iron Status Screening Scott M. Koehler, M. D.

We recommend considering a ferritin lab test or nutritional screening for iron in incoming athletes to evaluate for those athletes with low iron stores. Athletes have been shown to be at increased risk for iron deficiency, due to the 70% increased need for iron in the athlete combined with common dietary issues in young athletes. Adolescent athletes, female athletes, endurance athletes, vegetarian athletes, and athletes that lose weight are especially at risk. It has been estimated that 40% of adolescent female athletes have iron deficiency, but that less than half of these have anemia. Overall, greater than 25% of collegiate athletes have inadequate iron stores.

The 2009 consensus statement from the American Dietary Association and American College of Sports Medicine states that athletes should be periodically screened for iron status.

Tests for anemia such as hemoglobin and hematocrit are not accurate tests of an athlete's iron status because they are often falsely elevated in athletes due to relative dehydration and the hormones released by the body from exercise.

The amount of stored iron can be assessed by measuring serum ferritin levels. Commonly, ferritin values are reported as normal from 15-150 ng/ml. Athletes may begin to have symptoms (fatigue, decreased performance, etc.) if the ferritin falls below 30 ng/ml. We work with our iron deficient athletes to try to keep the ferritin above 40 ng/ml so there is a reserve of stored iron. The ferritin should not be checked during illness or infection.

In addition to the above summary, the studies referenced below have shown that:

- A serum ferritin lab test is typically used in college athletes, but the athlete can be screened by a dietary evaluation or consult with dietitian followed by lab testing if there is increased risk of iron deficiency.
- Since low iron stores take 3-6 months to recover if identified and treated, early identification of those at risk can help to avoid training and performance issues during the competitive season.
- Iron-depleted athletes have decreased maximal oxygen consumption (VO₂max)
- Iron deficiency anemia also has been shown to negatively affect psychomotor development, intellectual performance, and immune function
- Iron deficiency, with or without anemia, can impair muscle function and limit work capacity
- Iron deficiency anemia is one of the most common nutritional deficiencies

Key References:

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