Midlands Family Medicine
Let our family care for yours!

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Education

Serum Iron Studies

What are serum iron studies?

Serum iron studies are blood tests that:

- measure the amount of iron in your blood
- measure your body's ability to use iron.

There are many different types of iron studies. The 3 most common tests are discussed here:

- serum iron
- total iron binding capacity
- ferritin.

These are the tests usually used to look for problems with how your body uses iron.

Why is this test done?

Iron studies are usually ordered as part of a screening program to diagnose diseases before they become serious. The iron studies may help:

- find out why you are anemic
- diagnose some forms of autoimmune diseases or cancers.
- detect a problem such as hemochromatosis (a genetic disease that causes a dangerous buildup of iron in the body).

How do I prepare for this test?

- For 3 days before the tests avoid iron and vitamin C supplements and juices with vitamin C.
- You should fast overnight before you have this test. This means you should not eat or drink anything after midnight the night before your test. If you need to take medicines, you may take them with a small amount of water on the morning of your test.
- Talk to your health care provider if you have any questions.

How is the test done?

A small amount of blood is taken from your arm with a needle. The blood is collected in tubes and sent to a lab.

Having this test will take just a few minutes of your time. There is no risk of getting AIDS, hepatitis, or any other blood-borne disease from this test.

How will I get the test results?

Ask your health care provider when and how you will get the results of your test.

What do the test results mean?

The normal range for each of the three tests may vary from lab to lab. Normal ranges are usually shown next to your results in the lab report. Listed below are common normal ranges for each test.

Serum iron

For men and women the normal range is 20 to 150 ng/mL.

Total iron binding capacity (TIBC)

For men and women the normal range is 250 to 450 ng/mL.

Ferritin

- Males: 20 to 300 nanograms per milliliter (ng/mL)
- Females: 20 to 120 ng/mL

Results of these iron studies tests may mean the following:

- A **low serum iron level and low serum ferritin level** may be caused by iron deficiency anemia.
- A **high TIBC and low serum iron level** may be caused by iron deficiency anemia, pregnancy, and chronic blood loss.
- A **high serum iron level** may be caused by too much iron in your diet, vitamin B6 therapy, or some anemias caused by an inability to use iron.
- A **high ferritin level and a normal serum iron level** might indicate liver disease from infection or alcoholism, chronic inflammatory disease (such as arthritis or asthma), hypothyroidism, and type 2 diabetes.
- A **high ferritin level combined with a high serum iron level** may be a sign of hemosiderosis (an accumulation of iron in some of your tissues).
- A **low TIBC and high serum iron** may be a sign of sideroblastic anemia (a condition that prevents your red blood cells from using iron).
- A **high serum ferritin level, high serum iron, and low TIBC** may be caused by hemochromatosis.

What if my test results are not normal?

Test results are only one part of a larger picture that takes into account your medical history and current health. Sometimes a test needs to be repeated to check the first result. Talk to your health care provider about your results and ask questions.

If your test results are abnormal, ask your health care provider:

- if you need additional tests
- what you can do to work toward a normal value
- when you need to be tested again.

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