

Complement C3 (Blood)



Does this test have other names?

Complement component 3, C3

What is this test?

This test measures the amount of C3 proteins in your blood. These proteins are part of your complement system. This is an important part of your immune system. It helps kill bacteria and viruses that cause disease.

C3 protein is the most important and abundant protein in the complement system. It covers microbes to destroy them. The test measures complement C3 levels and how they compare with other parts of the complement system. With this information, your healthcare provider can diagnose and track treatment of certain diseases. One of the diseases that often causes abnormal C3 is systemic lupus erythematosus (SLE). Lupus is an autoimmune disorder.

Why do I need this test?

You may need this test if your healthcare provider thinks you may have lupus or another autoimmune disease. Symptoms of lupus may include:

- Rash in the shape of a butterfly across your cheeks
- Mouth or nose ulcers
- Hair loss
- Headache
- Light sensitivity
- Fever
- Joint pain and swelling
- Extreme tiredness
- Swelling around your eyes, and in your hands and feet
- Pain in your chest when breathing deeply

You may also have the test if you get repeated bacterial infections. And if you have been diagnosed with an autoimmune disease, you may have this test to track its progress.

What other tests might I have along with this test?

Your healthcare provider may also order a total complement activity test. This is also called CH50. This test measures all nine components of the complement system, from C1 to C9.

Healthcare providers often order a complement C4 test along with a complement C3 test. In certain diseases, both components are low. In other diseases, only one component is low. In lupus, both C3 and C4 levels are usually low.

If your healthcare provider thinks you may have lupus, you may have other blood tests to see how your immune system is working. These may include:

- Tests to measure antibodies in your blood
- Erythrocyte sedimentation rate (ESR) and C-reactive protein tests, which measure inflammation
- Panels of tests to see if your kidneys, liver, and muscles are affected

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

The normal range for a complement C3 blood test is 75 to 175 milligrams per deciliter (mg/dL), or 0.75 to 1.75 grams per liter (g/L).

Your complement levels will often rise very high just after an infection or injury. When your complement system responds to ongoing disease such as lupus, levels usually go down.

You can inherit a deficiency in your complement C3. But it's much more common to acquire a deficiency. If only your C3 complement level is low and all other complement components are normal, it's usually because of an inherited component deficiency. This makes it more likely that you will develop certain autoimmune disorders.

More often, you will have low levels of several complement components at once. This is the result of an acquired disease. If your C3 and C4 levels are reduced, this may be a sign that you have lupus. With lupus, your total complement level may be slightly lower. Low C3 and C4 levels may also be a sign of alcoholic liver disease. But this is less common.

Other conditions linked to low C3 levels include:

- C3 deficiency, a condition that causes recurrent bacterial infections
- Different forms of kidney disease

If you are being treated for a disease like lupus and your complement C3 and C4 levels go up, it is usually a sign that your treatment is working.

How is this test done?

The test is done with a blood sample. A needle is used to draw blood from a vein in your arm or hand.

Does this test pose any risks?

Having a blood test with a needle has some risks. These include bleeding, infection, bruising, and feeling lightheaded. When the needle pricks your arm or hand, you may feel a slight sting or pain. Afterward, the site may be sore.

What might affect my test results?

If the blood sample is mishandled, your C3 levels may be falsely low. If the C3 test is done as part of a total complement activity test, the test should be repeated if low levels are found.

How do I get ready for this test?

You don't need to prepare for this test. Tell your healthcare provider about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illegal drugs you may use.

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