

Complement C4 (Blood)



Does this test have other names?

Complement component 4, C4

What is this test?

This test measures the amount of C4 proteins in your blood. These proteins are part of your complement system, an important part of your immune system that helps kill disease-causing bacteria and viruses.

By measuring complement C4 levels, especially in how they compare with other parts of the complement system, your healthcare provider can diagnose and keep track of the treatment of certain diseases. One of the diseases that commonly involves abnormal C4 levels is systemic lupus erythematosus, or lupus, an autoimmune disorder.

Why do I need this test?

You may need this test if your healthcare provider suspects you have an autoimmune disorder, especially lupus. Symptoms of lupus may include:

- Rash in the shape of a butterfly across your cheeks
- Mouth or nose ulcers
- Hair loss
- Joint pain and swelling
- Low fevers
- Anemia
- Headaches
- Sun or light sensitivity
- Extreme tiredness
- Swelling around your eyes, and in your hands and feet
- Pain in your chest when breathing deeply
- Fingers and toes going numb or turning blue with cold or stress

Your healthcare provider may also order this test if they have concerns about your kidney function or if you have signs of chronic hepatitis. If you have already been diagnosed with an autoimmune disease, you may have this test to check its progress.

What other tests might I have along with this test?

Your healthcare provider may also order a total complement activity test, or CH50. This test measures all 9 components of the complement system, from C1 to C9.

Healthcare providers often order a complement C3 test along with a complement C4 test. In certain diseases, both components are low. But in others, only 1 component is low. In lupus, both C3 and C4 levels are usually low.

If your healthcare provider suspects lupus, you may have a number of other blood tests to see how your immune system is functioning. These may include:

- Tests to measure antibodies in your blood
- Erythrocyte sedimentation rate and C-reactive protein tests, which measure inflammation
- Panels of tests to determine whether your kidneys, liver, and muscles are involved

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 C4 blood test is 16 to 48 milligrams per deciliter (mg/dL), or 0.16 to 0.48 grams per liter (g/L).

Your complement levels will often shoot up dramatically just after an infection or injury. When your complement system is activated in response to ongoing disease, such as lupus, levels usually go down.

You can inherit a deficiency in your complement C4. But it is much more common to acquire a deficiency. If only your C4 complement level is low, and all other complement components are normal, it is usually because of an inherited component deficiency.

More often, you will have lowered 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. Usually your total complement level is also slightly lower in this situation. Low C3 and C4 levels may also be a sign of alcoholic liver disease, but this is less common.

A deficiency in complement C4 levels has been linked to different forms of kidney disease and chronic hepatitis. It has also been found in a number of childhood diseases, including:

- Henoch-Schonlein purpura, a type of inflammation of the blood vessels
- Childhood diabetes mellitus

If you are being treated for a disease like lupus and your complement C4 levels go up, it may be 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 carries 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 C4 levels may be falsely low. If the C4 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. Be sure your healthcare provider knows 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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