

Cholinesterase (Blood)



Does this test have other names?

RBC cholinesterase, true cholinesterase, red cell cholinesterase, acetylcholinesterase, AChE, PCHE

What is this test?

This test looks for signs of chemical poisoning in your blood.

Cholinesterase is an enzyme that helps your nervous system work the way it should. Certain toxic chemicals in the environment can interfere with this enzyme and affect your nervous system.

These chemicals include organophosphates and carbamates. They are most often found in insecticides used in fields. They have also been used as chemical warfare agents. These chemicals can be found in common household insect sprays, too. They have been used in insecticides for more than 50 years.

If these chemicals get into your body, they can affect how you breathe and can cause general muscle weakness. They are called cholinesterase inhibitors. An overdose of these chemicals can be fatal.

Why do I need this test?

You may need this test if your healthcare provider thinks you have been overexposed to insecticides. Signs and symptoms of overexposure include:

- Slow heart rate
- Chest tightness
- Pupils in your eyes get smaller with eye pain or headache
- More saliva than normal
- Urinating more often than normal
- Trouble breathing
- Watery eyes or blurred vision
- Runny nose, coughing, or wheezing
- Vomiting and diarrhea

These signs and symptoms vary, based on:

- Your age
- Amount of the overdose
- What part of your body was exposed
- Type of chemical
- How you are exposed, such as by breathing, eating or drinking, or skin contact

You may also have this test if you have symptoms of nervous system problems. These include:

- Weakness when you bend your neck
- Problems with the nerves in your neck
- General muscle weakness
- You aren't able to breathe normally

This test is rarely used in an emergency because the results usually aren't available in time to suggest treatment. Instead, treatment of cholinesterase poisoning is usually based on symptoms.

What other tests might I have along with this test?

Your healthcare provider may also order other tests if you need treatment right away. These tests include:

- Drug screen
- Complete blood count, or CBC
- Electrolyte panel
- Blood culture

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 range of normal results varies greatly from lab to lab. But signs of poisoning may start to appear in ranges that are 40% to 80% of normal.

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?

Certain medicines can affect your results. These include birth control pills and medicines used to prevent malaria.

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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