

Theophylline



Does this test have other names?

Serum theophylline concentrations, blood theophylline level

What is this test?

This test measures the level of theophylline in your blood.

Theophylline is a chemical similar to caffeine. It's sometimes used as a medicine to treat lung conditions, such as asthma, COPD, and bronchiolitis. Sometimes it's prescribed to babies, especially premature infants, to help their breathing and lung function.

Theophylline reduces inflammation or irritation in lungs and airways, relaxes smooth muscles in the airways and digestive system, and stimulates the central nervous system. But theophylline can be harmful in high doses or if the theophylline level in your blood is too high, so your healthcare provider may want to test your level of theophylline.

Why do I need this test?

You may need this test if your healthcare provider gives you theophylline for a health condition. The test will help your provider determine the correct dose and see if you have too much theophylline in your body. Too much theophylline can be life-threatening. Symptoms of too much theophylline include:

- Vomiting, heartburn, and belly pain
- Rapid heart rate or other changes in heart rhythm
- Muscle aches and tremors
- Anxiety
- Trouble sleeping
- Restlessness
- Seizures
- High blood sugar
- Low potassium levels
- Low blood pressure

What other tests might I have along with this test?

You may need other tests if you have taken too much theophylline. These include:

- Tests to measure other substances in your blood, such as blood sugar and electrolytes
- Blood gas test to check the oxygen and carbon dioxide levels in your blood
- Liver function tests

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.

Results are given in micrograms per milliliter (mcg/mL). Safe levels for people taking theophylline are often 8 to 20 mcg/mL. Levels above 20 mcg/mL may be harmful and can happen if people take too many pills within a short time period. Such cases might include accidentally taking extra pills or having a prescription that was written for too high a dose. This may also happen if someone was using the medicine to attempt suicide.

A safe level for you depends on how much alcohol you drink, if you smoke, if you take herbal medicines, and how nutritiously you eat.

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 cause theophylline to break down more slowly in the body, which can lead to higher test results. These include:

- Cimetidine, used to treat problems related to stomach acid
- Birth control pills
- Certain antibiotics, such as erythromycin, clarithromycin, ciprofloxacin, and norfloxacin
- Fluvoxamine, a medicine for anxiety

Other medicines cause theophylline to leave your body more quickly. This leads to a lower test result. Smoking, drinking alcohol, or having a viral infection or heart failure can cause levels to suddenly go up or down.

How do I get ready for this test?

Tell your healthcare provider how much theophylline you have taken. Be sure your 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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