

Free T4



Does this test have other names?

Free thyroxine test

What is this test?

This test measures the level of free T₄, or free thyroxine, in your blood. A free T₄ test is used to find out how well your thyroid gland is working.

T₄ is 1 of 2 hormones produced by the thyroid, a butterfly-shaped gland in your neck. There are 2 forms of T₄. Some T₄ in your blood is bound to proteins, and some T₄ circulates freely, or unbound from proteins. Testing for unbound T₄ is more accurate than testing for bound T₄. The free T₄ test measures unbound T₄.

The other thyroid hormone is triiodothyronine, or T₃. T₄ is changed to T₃ so it becomes active and affects the tissues in the body. There are also 2 forms of T₃, bound T₃ and free T₃.

These hormones help regulate your body's metabolism. They go into action when prompted by thyroid stimulating hormone (TSH), which is released by the pituitary gland in your brain.

Why do I need this test?

You may need this test if your healthcare provider wants to find out whether you have a thyroid-related condition, such as hyperthyroidism, which means an overactive thyroid, or hypothyroidism, which means an underactive thyroid. If you do have a thyroid problem, you may have the test to keep track of changes or treatment.

Each condition has many different symptoms. If you have hyperthyroidism, you may often feel anxious and irritable, have trouble sleeping, and have an irregular or rapid heart rhythm. You may also feel quite tired and notice that you're losing weight even though your appetite has increased. You may also have sweating and increased heat sensitivity, changes to bowel habits, and changes to menstrual patterns, such as a lighter flow.

If you have hypothyroidism, you may notice weight gain, even if you aren't overeating. You may also be more sensitive to cold, have low energy, and notice changes to menstruation, such as heavier flow. You may also have muscle weakness, constipation, and dry skin and hair.

What other tests might I have along with this test?

You may have blood tests to measure T₃ and TSH. These hormones also play key roles in thyroid health. You may also have blood tests to measure the levels of certain antithyroid antibodies in your blood to get a more accurate diagnosis. And you may have imaging tests (ultrasound) of your thyroid gland.

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 free T₄ in adults is 0.8 to 1.8 nanograms per deciliter (ng/dL). A level of free T₄ that is higher than normal could mean you have an overactive thyroid. Conditions linked to hyperthyroidism include Graves disease, an autoimmune disorder.

Abnormally low free T₄ levels may signal hypothyroidism. This means your thyroid is not making enough hormones. An underlying condition, such as Hashimoto disease, another autoimmune disorder, could be the cause of an underactive thyroid.

How is this test done?

The test needs a blood sample, which is drawn through a needle from a vein in your arm.

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, such as phenobarbital, can affect your free T₄ levels. Severe chronic illnesses, such as chronic renal failure and cirrhosis of the liver, can also affect the test.

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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