

Information about pathology tests to help Australians take control of their health and make the right decisions about their care.

WHAT YOU SHOULD KNOW ABOUT YOUR THYROID FUNCTION TESTS

This is a group of tests that give information about how your thyroid is working.

Your doctor may order Thyroid Function Tests

- To help make a diagnosis if you have symptoms that could mean you have a thyroid disorder. (Thyroid Function Tests are not usually required if you do not have symptoms.)
- To monitor your thyroid over time if you are taking medication
- To check for a pituitary problem
- To check for fertility problems
- As a screen in pregnancy and for newborn babies

What your thyroid does

- Your thyroid is a small gland at the front of the base of your neck
- Its job is to take iodine from the food you eat and convert it to thyroid hormones, called T3 and T4
- It releases them into the bloodstream where they are transported around your body to control metabolism – the way your body uses energy
- This regulates things like your heart rate and body temperature

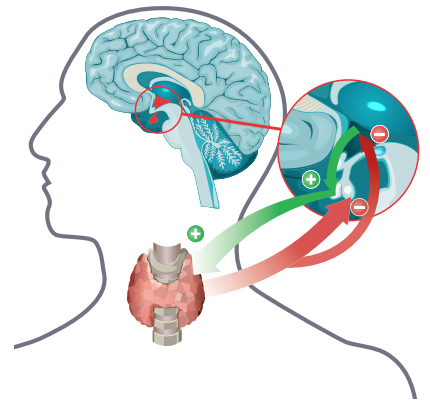
It's important that thyroid hormone levels are kept stable

There's a feedback mechanism to make sure levels don't get too high or too low.

The thyroid gland is under the control of the pituitary gland which is at the base of your brain.

When T3 and T4 levels fall, the pituitary gland sends out TSH – thyroid stimulating hormone - to signal to the thyroid to step up the production of hormones. If T3 and T4 levels are too high, the pituitary gland slows production of TSH.

In healthy people this system regulates itself perfectly. However, in thyroid or pituitary diseases the system becomes unbalanced.



Some thyroid problems

Hypothyroidism

Low levels of hormones – weight gain, lack of energy and depression

Hyperthyroidism

High levels of hormones – weight loss, anxiety and heat intolerance

The three main thyroid hormones are:

TSH (Thyroid stimulating hormone)

T3 (Triiodothyronine)

T4 (Thyroxine)



What happens in the lab?

In the blood samples sent to the lab we measure TSH, Free Thyroxine (FT4) and Free Triiodothyronine (FT3). ('Free' thyroid hormones means they aren't bound to proteins and are the active form.) Each substance gives different information. TSH and FT4 are more commonly ordered. FT3 is often only ordered if TSH and FT4 tests suggest hyperthyroidism.



What can your results tell you?

TSH	FT4	FT3	INTERPRETATION
High	Normal	Normal	Mild Hypothyroidism
High	Low	Low or normal	Hypothyroidism
Low	Normal	Normal	Mild Hyperthyroidism
Low	High or normal	High or normal	Hyperthyroidism
Low	Low or normal	Low or normal	Non-thyroidal illness: rare pituitary hypothyroidism

What if you have abnormal results?



Interpreting the many variations in test results is complex. An abnormal result may not mean you have anything to worry about.

Other health conditions, extreme stress and pregnancy affect the levels of thyroid hormones, as well as medications.

Talking with your doctor about what your results mean for you is important.

What are reference intervals (reference ranges)?



Your results are shown in your report as a comparison against a set of numbers called reference intervals or reference ranges. This is the range of test results considered 'normal' for the general population.

If a result in your report is outside this range it can be flagged as high (H) or low (L). This does not necessarily mean that anything is wrong. It depends on your personal situation. Your results need to be interpreted by your doctor.

What happens next?



Your doctor may want to repeat tests over time to monitor your thyroid.

They may order an ultrasound of your thyroid.

If you are prescribed treatment, thyroid tests will need to be repeated to monitor how well it is working. If you are being assessed for thyroxine treatment, you need only a T4 test.

Rarely, your results may indicate a pituitary problem and you may need further, different tests.



5 questions to ask your doctor

Why does this test need to be done?

Do I need to prepare (such as fast or avoid medications) for the sample collection?

Will an abnormal result mean I need further tests?

How could it change the course of my care?

What will happen next, after the test?

Having a medical test



The choice of tests your doctor makes will be based on your medical history and symptoms. It is important that you tell them everything you think might help.

You play a central role in making sure your test results are accurate. Do everything you can to make sure the information you provide is correct and follow instructions closely.

Talk to your doctor about any medications you are taking. Find out if you need to fast or stop any particular foods or supplements. These may affect your results.



For more detailed information on these and many other tests go to labtestsonline.org.au
You'll also find a short animation on Thyroid Function Tests and another on reference intervals.



Reviewed by Dr Kevin Carpenter FFS_c(RCPA) FHGSA; 3 March 2020

Please use this QR code to access more information



www.labtestsonline.org.au

Australasian Association for Clinical Biochemistry and Laboratory Medicine

PO Box 7336 5/85 Bourke Rd Alexandria NSW 2015

Established in 2007 to help Australians understand their pathology tests, Lab Tests Online^{AU} is now the primary national source of consumer information on pathology testing. Information is written and edited by practising pathologists and scientists, some of them leading experts, which ensures accuracy and integrity.

- Funded by the **Australian Government**, we are not-for-profit and independent of any commercial interests.
- We are managed by the Australasian Association for **Clinical Biochemistry and Laboratory Medicine (AACB)**, the principal professional association dedicated to the advancement of clinical biochemistry and laboratory medicine in Australasia.
- We are supported by the **Royal College of Pathologists of Australasia**.
- As the consumer pathology testing support resource for **My Health Record**, there is a direct link to the LTO^{AU} website embedded in the pathology results pages of every registered person's online record.



Australian Government
Department of Health



My Health Record