

UNDERSTANDING YOUR THYROID TESTS

TSH – Thyroid Stimulating Hormone

This is the main test that is performed by doctors, however by itself it often isn't enough.

This hormone is produced by the hypothalamus and sends a message to the thyroid to provide more thyroid hormone (T4).

TSH is actually an indicated of what your hypothalamus is doing based on how it thinks your thyroid hormone levels are doing it. Because it's affected by a feedback loop, the meaning of TSH can often be confusing.

If TSH is high - this can be a sign that you are under-producing thyroid hormones and you are hypothyroid

If TSH is low - this can be a sign that you are over-producing thyroid hormones and are hyperthyroid, or that you are on too much supplemental thyroid hormone. Supplemental T3 or natural desiccated thyroid hormone with T3 can artificially suppress your TSH, so in the absence of symptoms it could be perfectly normal.

If your TSH is 'normal' - this could indicate that you do not have thyroid dysfunction. However it's possible to have some imbalanced in thyroid function even is TSH is normal. Look at the functional ranges, and consider digging deeper into the other tests to find out if thyroid problems are really the cause of your symptoms.

Lab range: 0.45-5.5 mIU/L

Optimal range: 1.8-2.5 mIU/L

T4 – The Storage Form of Thyroid Hormone

Once TSH signals to your thyroid to ramp up production of its hormones, it produces the four different types of thyroid hormone - T1, T2, T3, and T4. The primary output of your thyroid is T4, which is a storage form of the hormone. It is circulated throughout the bloodstream and stored in tissues so that it's available when needed.

If FT4 is high - it can indicate an overactive thyroid or hyperthyroidism

If FT4 is low - it can indicate an underactive thyroid or hypothyroidism

Lab range: 4.5-12 mcg/DL

Optimal range: 6.0-12.0 mcg/DL

Free T3 – The Gas

When each local area of your body determines that it needs more power, it converts storage T4 into Free T3, which is the active form of the hormone. These hormones attach to receptors inside of your cells to power your metabolic processes.

If FT3 is high - indicates that your thyroid is overactive or hyperthyroidism

If FT3 is low - you may not be converting T4 to FT3 very well and you could have hypothyroid symptoms even if your TSH and FT4 are within range.

Lab range: 2.3-4.2 pg/mL

Optimal range: 3.0-4.0 pg/mL

Thyroid Antibodies – Your Immune System’s Attack on Your Thyroid

The vast majority of thyroid conditions are autoimmune, which means your immune system is attacking your thyroid. The hypothyroid form of autoimmune thyroid is Hashimoto’s, and the hyperthyroid form is Graves’ Disease. Autoimmune conditions can come in clusters, and so it’s important to identify if you do have a tendency to autoimmunity and treat the driving factors such as gut issues (leaky gut), stress, insulin resistance, infections and nutrient deficiencies.

If you have one type of autoimmune condition you have an increased risk of developing more autoimmune conditions as you get older, unless the points I mentioned above are dealt with.

Thyroid antibodies can be present even before thyroid function starts to get affected. If you find this in your blood tests, don’t wait until the damage is done to start treatment - start working on the causes as soon as you can.

If you have a family history of thyroid disorders or autoimmune conditions it’s a good idea to get screened for antibodies.

There are two main types of thyroid antibodies. Thyroid peroxidase antibodies (TPOAb) attack an enzyme used to synthesize thyroid hormones and are commonly elevated in both Hashimoto’s and Graves’ Disease patients. Thyroglobulin Antibodies (TgAb), attack thyroglobulin, which your thyroid uses to produce its hormones. These are typically elevated in Hashimoto’s patients.

Thyroid Peroxidase (TPO) Ab optimal range: 0-15 IU/mL

Thyroglobulin Ab optimal range: 0-0.9 IU/mL

Reverse T3 – The Brakes

Reverse T3 is produced when your body wants to slow down the thyroid activity, usually in response to some form of stress in the body such as gut issues, mental stress, adrenal fatigue, infection, insulin resistance and too much or too little calories or carbohydrates.

If RT3 is high - you are likely converting too much T4 to RT3 and not enough to FT3, which can cause hypothyroid symptoms even if your TSH and T4 levels are optimal. In addition, I look at something called a RT3/FT3 ratio and I like that to be less than a 10:1 ratio.

All of these tests can be done by a Doctor (some may be claimable on Medicare), Naturopath or Nutritionist.

Other areas to look into

Fasting Insulin - blood test. Can be done by a Doctor, Naturopath or nutritionist.

Hormonal panel - Salivary hormones or Dutch panel (urine test) can be helpful to assess oestrogen levels and cortisol and provide greater insight than blood tests. They are best done 5-7 days after ovulation. Oestrogen metabolites is another option. A Naturopath or Nutritionist would refer you for this.

Food intolerance testing - many versions of this test is available.

Urinary Iodine - the most accurate way to test iodine is with a 24 hour iodine loading test. A spot iodine test could be helpful to start with. Can be done by a Doctor, Naturopath or nutritionist.

Urinary or serum selenium. Can be done by a Doctor, Naturopath or nutritionist.

Iron studies, in particular ferritin (iron stores). Can be done by a Doctor, Naturopath or nutritionist.