



Making sense of your thyroid test markers

Thyroid Wellness



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There is no doubt that blood tests can be a little confusing and this is no exception when it comes to the key thyroid markers. This guide will briefly cover the different types of thyroid markers that you should be testing for and what optimal ranges you should be aiming for. I also provide a printable pocket guide that you can keep with you at all times to cross check against your results.

TSH –Thyroid Stimulating Hormone

TSH is the most common and sensitive marker of thyroid function. TSH is produced by the pituitary gland to regulate thyroid hormone produced by the thyroid gland. TSH increases when T4 levels drop too low and reduces when there is sufficient or too much T4.

If TSH is too high or too low, it can signify that there is a problem with the thyroid gland. In some instances, it can also signal a problem with the pituitary gland rather than the thyroid.

It is important to understand the difference between standard and functional laboratory ranges. Standard lab ranges are based on the average of people that have been tested (which generally are sick or unhealthy people). Personally, I wouldn't want to compare my levels to the average sick person, I am sure you wouldn't either. The functional ranges on the other hand are looking at the levels of healthy functioning individuals. Using the functional ranges provided in this document will give you really good overview of what to aim for. It is important to remember that these are indicators and that each person is unique. Working with the symptoms in conjunction with the lab results is the best way to understand how best to support any individual with thyroid problems.

Functional Range: 0.5 – 2 mIU/ml

Lab Range: 0.4 – 4.5/5.5 mU/ml

TT4 - Total Thyroxine

This measures both bound and unbound levels of thyroxine (T4) in the body. It is helpful to remember that thyroid hormone will always be bound to proteins whilst travelling through the bloodstream. It only becomes unbound when released to enter the cells.

Measuring total T4 hormone level is not going to paint an accurate picture of how much active thyroid hormone the body has available, but can definitely be helpful at certain times like pregnancy. The best way to assess thyroid function is to look at both T4 and T3 uptake. This will give you a better idea of how much thyroid hormone is actually entering the cells and thus an indication of active thyroid hormone available in the body.

FT4 – Free Thyroxine

Thyroxine (T4) is one of the two thyroid hormones produced by the thyroid gland, the other is triiodothyronine (T3). When it comes to T4, the key marker to test for is free T4 as this is going to report on the level of free or unbound thyroxine that is available in the body.

Low levels of FT4 may indicate that the thyroid is struggling to produce enough thyroid hormone and is therefore presenting as under-active (hypothyroid). This means that there is less thyroid hormone available to convert to the more biologically active T3.

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Low levels of FT4 can result in slower metabolism, weight gain, low mood, sensitivity to cold, brain fog and more.

Normal levels of FT4 coupled with high levels of TSH can be enough to identify hypothyroidism. It is also important to note that FT4 might be lower during pregnancy due to an increase in the amount of the protein carrier, thyroid binding globulin. This means that more thyroid hormone is bound and less free to become biological active in the cells. For this reason it is important to test both TT4 and FT4 during pregnancy.

Raised levels of FT4 can indicate an over-active thyroid and can present with weight loss, over-active metabolism, rapid heartbeat, feeling anxious or on edge and sensitivity to heat.

Elevated FT4 can also be an indication that someone is being overmedicated on thyroid hormone therapy.

Functional Range: 15 – 27 pmol/L
Lab Range: 9 – 23 pmol/L

FT3 – Free Triiodothyronine

T3 is around 300 percent more biologically active than T4 and therefore one of the best markers to measure to understand how much thyroid hormone is actually available in the body. Like with T4, most T3 is bound to protein in the blood, which means you want to focus on free T3, that is unbound to protein, and available to regulate metabolism.

When levels of FT3 are low, it can indicate that your body is either not producing enough thyroid hormone or that your body is not efficient at converting the inactive T4 to T3. This can present with someone struggling with fatigue, weight gain, cold extremities, low mood and brain fog.

Elevated FT3 can indicate an over-active thyroid and symptoms associated with this might be feeling anxious, jittery, increased appetite and feeling hot.

You can also see high levels of FT3 in people on thyroid replacement therapy, especially if they are taking synthetic T3 like Cytomel (Liothyronine Sodium). This can be a helpful prompt for a medication review.

In my opinion it is always worth testing both FT3 and FT4 to get an accurate measure of thyroid function.

Functional Range: 5 - 7 pmol/L
Lab Range: 3 – 7 pmol/L

rT3 - Reverse T3

Reverse T3 is a natural way for your body to clear excess thyroid hormone. This however can increase significantly during periods of extreme stress, such as major trauma, surgery and chronic illness. This can definitely be a helpful marker to measure especially in cases of high stress, but also in instances, where the body is struggling to clear thyroid hormone. Personally, I pay more attention to the Reverse T3:T3 ratio, which should optimally be around 20.

Functional Range: 11 – 18ng/dl
Lab Range: 11 – 21 ng/dl

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Thyroid Antibodies

Antibodies are an indication that the immune system is over activated and potentially causing damage (as a protective measure) to a particular gland and tissue. In the case with the thyroid, the immune cells are infiltrating the thyroid gland and tissue, which ultimately causes damage. This can present as either Hashimoto's or Graves' Disease.

The three antibodies tested are:

TPO AB – THYROID PEROXIDASE

This is the standard antibody test for Hashimoto's disease and in my opinion something we should test for routinely! This can present as an under-active thyroid, but not in all cases. Thyroid peroxidase (TPO) is the enzyme responsible for the production of thyroid hormone and in the case of Hashimoto's disease the immune systems target of attack.

Did you know that it can take up to ten years or longer for the thyroid to become under-active even in the presence of elevated antibodies? This is why testing is so important.

Functional & Lab Range: < 34 kIU/L

TGB AB – THYROGLOBULIN ANTIBODIES

This is generally performed as part of the TPO Ab test and is definitely necessary too. I have seen many clients that don't have elevated TPO Ab, yet they present with elevated TGBAb, and therefore Hashimoto's disease.

Functional < 34kIU/L
Lab Range: < 115 kIU/L

TSI AB – THYROID STIMULATING

IMMUNOGLOBULIN

TSI Ab is used to identify hyperthyroidism or Grave's Disease.

Functional & Lab Range: < 1.3

OPTIMAL REFERENCE RANGES FOR TOP THYROID HEALTH		
TEST MARKER	STANDARD LAB RANGE	FUNCTIONAL / OPTIMAL RANGE
TSH	0.4 - 5.5 mIU/ml	0.5 - 2/2.5 mIU/ml
FREE T4	9 - 23 pmol/L	15 - 27 pmol/L
FREE T3	3 - 7 pmol/L	5 - 7 pmol/L
REVERSE T3	11 - 21 ng/dl	11 - 18ng/dl
TPO ANTIBODIES	<34 kIU/L	< 34 kIU/L
TG ANTIBODIES	<115 kIU/L	< 34 kIU/L

Education only resource

This guide is for educational purposes only. It is not intended as a substitute for the advice provided by your medical professional. If you have or suspect that you have a serious medical condition, contact your health care provider immediately. Always consult with a health care practitioner before beginning a new supplement, especially if you are pregnant, breastfeeding or taking any medication.

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About the author

Stiana Hubert is a Functional Medicine Nutritionist and member of the Institute of Functional Medicine. She is the founder of The Wellness Junction and passionate about helping women regain their health and vitality.

Her own journey with chronic illness and Hashimoto's has led her to become a specialist in thyroid and gut health and she now helps women around the world to improve their thyroid and gut function so that they can reclaim their health and vitality.

Stiana Hubert is a mother of two with a thriving practice who believes that every woman has the right to live a vibrant and energetic life and feel amazing.

The next step

Are you ready to feel like yourself again, be the mum and wife/partner you want to be, have energy and clarity of thought to show up as the best version of yourself?

Are you ready to commit to making positive changes to your life that will enable you live the life you dream of and the one you truly deserve?

If yes, then schedule your free 30-minute assessment call today. This will be the single biggest transformation process that will enable you embrace life with renewed perspective.

Book Now