

Comprehensive Thyroid Report

Patient Name: [REDACTED]
 Patient DOB: [REDACTED]
 Gender: F
 Physician: Nour Zibdeh, RD

Date Received: 2/26/2016
 Report Date: 3/9/2016

Test Component	Flag	Result	Reference Range
TSH		0.602	0.358 - 3.74
T4, Total		9.5	4.5 - 12.5
T3, Free		3.4	2.2 - 4.0
T4, Free	H	1.49	0.76 - 1.46
Anti-TPO Ab		29.5	0.0 - 35.0
Anti-Thyroglobulin Ab		< 20	ND - 40
Thyroglobulin		4	<= 55
Thyroxine-binding globulin, TBG		16	14 - 31
Reverse T3		20.2	9.0 - 27.0

Reverse T3 performed at ARUP, Inc, 500 Chipeta Way, Salt Lake City, Utah 84108 CAP# 40963-01 CLIA# 46D0523979

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Test			Patient Results	Reference Value
TSH	μIU/mL	0.020 1.260 2.500 3.740 4.980	0.602	0.358 - 3.74
T4, Total	μg/dL	0.5 4.4 8.3 12.1 16.0	9.5	4.5 - 12.5
T3, Free	pg/mL	0.5 1.9 3.3 4.6 6.0	3.4	2.2 - 4.0
T4, Free	ng/dL	0.10 0.83 1.55 2.28 3.00	1.49	0.76 - 1.46
Anti-TPO Ab	IU/mL	10.0 20.0 30.0 40.0 50.0	29.5	0.0 - 35.0
Anti-Thyroglobulin Ab	IU/mL	+ 20 30 40 50 60	< 20	ND - 40
Thyroglobulin	ng/mL	0 20 40 60 80	4	<= 55
Thyroxine-binding globulin, TBG	μg/mL	0 11 23 34 45	16	14 - 31
Reverse T3	ng/dL	0.0 9.0 18.0 27.0 36.0	20.2	9.0 - 27.0

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Component Summaries

This information is provided for educational purposes.

TSH (Thyroid Stimulating Hormone)

This hormone (also known as thyrotropin) tells the thyroid to increase or decrease production of T4 or conversion to T3 depending on the amounts of T4 and T3 circulating in the bloodstream via an efficient feedback system. Levels of TSH are high when thyroid function is poor or inefficient (hypothyroidism) because TSH is released by a gland in the brain (pituitary) in an effort to increase thyroid function by increasing T4 or T3. Conversely, low TSH is seen in an overactive thyroid (hyperthyroidism). TSH is often considered the main thyroid hormone for diagnosing hypo- or hyperthyroidism.

T4, Total (Total Thyroxine)

Most T4 in the blood is bound to carrier proteins which makes it biologically inactive. Total T4 includes unbound (free) T4 plus T4 that is bound to carrier proteins in the blood.

T4, Free (Free Thyroxine)

Considered a precursor hormone, T4 is converted into T3 as required by cells throughout the body. Generally, this conversion of T4 to T3 occurs outside the thyroid gland, typically in the liver and kidneys. Although T4 is more abundant in the blood than T3, it is much less potent.

T3, Free (Free Triiodothyronine)

T3 is the main thyroid hormone in terms of biological activity that regulates metabolism and growth throughout the body. It is more potent than T4 and directly affects the heart, blood vessels, bone, muscle and brain. T3 increases a person's metabolic rate, controls body temperature, regulates neurotransmitter synthesis (mood), impacts heart rate and oversees the conversion of food into energy.

Tg (Thyroglobulin)

The main function of Tg is to store iodine, which is a necessary nutrient for the production of thyroid hormones T3 and T4. This test is particularly useful when monitored over time versus a single measurement and can sometimes be a useful tumor marker in patients with previous thyroid cancer.

TBG (Thyroid Binding Globulin)

TBG is a carrier protein for thyroid hormones so its role is to transport T4 and T3 through the bloodstream. The thyroid gland adjusts to changing levels of TBG in order to keep free T4 constant and it is particularly useful when thyroid (T4) levels do not necessarily correlate with clinical symptoms. TBG levels are largely affected by other hormones and many prescription drugs and is useful in diagnosing the reason behind abnormal thyroid hormone levels.

Anti-Tg (Antibodies to Thyroglobulin)

If antibodies to the protein thyroglobulin (a precursor to T4) are present in significant amounts, this suggests an abnormal immune response against your own body, also called autoimmunity. Specifically, anti-Tg suggests a person's immune system is attacking healthy tissue – in this case, the protein precursor to thyroid hormone.

Anti-TPO (Antibodies to Thyroperoxidase)

Thyroperoxidase (TPO) is an enzyme that initiates the synthesis of T4. Antibodies to TPO indicate autoimmunity where the body is attacking normal proteins in the blood (in this case, TPO). People with anti-TPO have a higher chance of developing hypothyroidism than those who do not have antibodies to TPO.

Reverse T3 (Reverse Triiodothyronine)

As the name implies, Reverse T3 opposes the biological action of T3. It slows metabolism and renders T3 in the body biologically inactive. The rate of rT3 production relative to T3 will increase in times of stress (high cortisol) and in the presence of nutrient deficiencies, inflammation or certain medications.