

TEST REPORT

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2018 08 01 300 B

Ordering Provider:
Getuwell Clinic

Samples Received
08/01/2018
Report Date
08/06/2018

Samples Collected
Blood Spot – 07/28/18 09:15

Patient Name: Elite Thyroid Profile
Patient Phone Number: 555 555 5555

Gender	Height	Waist	Basal Body Temperature
Male	5ft 9 in	34 in	98.6°
DOB	Weight	BMI	
01/01/1973 (45 yrs)	160 lb	23.6	

TEST NAME	RESULTS 07/28/2018	RANGE
Blood Spot Thyroids		
Thyroglobulin	53.2 H	3-40 ng/mL (optimal 3-10)
Total T4	7.3	5-10.8 µg/dL
Free T4	1.2	0.7-2.5 ng/dL
Free T3	3.4	2.4-4.2 pg/mL
TSH	1.7	0.5-3.0 µU/mL
TPOab	38	0-150 IU/mL (70-150 borderline)

<dl = Less than the detectable limit of the lab. N/A = Not applicable; 1 or more values used in this calculation is less than the detectable limit. H = High. L = Low.

Therapies

None

Disclaimer: Supplement type and dosage are for informational purposes only and are not recommendations for treatment. For a complete listing of reference ranges, go to www.zrtlab.com/reference-ranges.

TEST NAME	MEN
Blood Spot Thyroids	
Thyroglobulin	3-40 ng/mL (optimal 3-10)
Total T4	5-10.8 µg/dL
Free T4	0.7-2.5 ng/dL
Free T3	2.4-4.2 pg/mL
TSH	0.5-3.0 µU/mL
TPOab	0-150 IU/mL (70-150 borderline)

Lab Comments

BT-00000

Thyroglobulin is higher than reference range suggesting less than optimal consumption of iodine over the past several weeks, or blockage of iodine uptake or utilization by goitrogens found in common foods (e.g. cruciferous vegetables, soy), industrial contaminants (e.g. perchlorate, polybrominated and polychlorinated biphenyls), and cigarette smoke (thiocyanogens). Blood thyroglobulin is considered a good marker of the average iodine level over previous weeks. Excluding thyroid cancer, wherein thyroglobulin is usually very high, a high thyroglobulin ranging from >10-50 ng/ml suggests low iodine, inhibition of iodine uptake into the thyroid gland, or inhibition thyroglobulin iodination by thyroid peroxidase. Thyroglobulin is a tyrosine-rich protein produced exclusively in the follicular cells of the thyroid gland. Its synthesis is directed by TSH released from the hypothalamus in response to low circulating levels of T3 and T4. Following transport of iodine into the thyroid gland the iodide is converted by thyroid peroxidase and H₂O₂ to iodine, which then covalently binds to tyrosine residues on thyroglobulin. The iodinated thyroglobulin is stored in the colloidal lumen of the thyroid gland before it is eventually converted to thyroid hormones, T3 and T4. Poorly iodinated thyroglobulin is more likely to diffuse out of the lumen directly into the bloodstream instead of being stored for future thyroid hormone synthesis. A small amount of thyroglobulin is normally present in the bloodstream, but levels exceeding 10 ng/ml usually (excluding thyroid pathology) indicate low iodine levels in the bloodstream or normal iodine levels but poor uptake and utilization for thyroid hormone synthesis. Goitrogens present in many foods (e.g. thiocyanates and nitrates present in cruciferous vegetables and isoflavones such as genistein found in soybeans) and in some environmental chemicals (e.g. perchlorates, bisphenols) and medicines can inhibit the uptake or organification of iodine into thyroglobulin. If iodine levels in urine are low and thyroglobulin is elevated this would indicate an iodine deficiency that should be treated with iodine prophylaxis. If iodine is not low the higher thyroglobulin may be caused by goitrogens, or indicate thyroid gland dysfunction (e.g. goiter or thyroid nodules).

Total T4 is within observed range. While total T4 is a good marker of the thyroid glands ability to synthesize thyroid hormones (assuming no thyroid hormone therapy), it is not reflective of the bioavailable fraction of T4 available to target tissues throughout the body. Free T4 and free T3 are a better estimation of the bioavailable thyroid hormones. If symptoms of thyroid deficiency are problematic and other thyroid hormone markers are out of balance (e.g. low free T4, low free T3, high TSH, and/or high thyroglobulin), consider thyroid hormone therapy.

Thyroid hormones (free T4, free T3, TSH) and thyroid peroxidase antibodies are within normal ranges; however, this does not exclude the possibility of a functional thyroid deficiency if symptoms are problematic.