

**Provider:**  
**Patient:**  
**Sample Type:**

**Sex:**  
**Date of Birth:**  
**Accession #:**

**Collected:**  
**Received:**  
**Completed:**

Tests	Results	Units	Interpretation	Reference Range
Thyroid Stimulating Hormone	4.20	μIU/mL		0.270 - 4.20
Free T3	>32.6	pg/mL	High	2.02 - 4.43
Free T4	>7.77	ng/dL	High	0.932 - 1.71
Triiodothyronine (T3)	>651	ng/dL	High	84.6 - 202
Thyroxine (T4)	4.51	μg/dL		4.50 - 11.70

Thyroid stimulating hormone (TSH) induces the production and release of thyroid hormones. T4 (thyroxine) and T3 (triiodothyronine) are thyroid hormones. Free T3 and T4 indicate the amount of thyroid hormone available to body cells. Thyroglobulin is the precursor for T3 and T4. Anti-thyroglobulin antibodies may occur when autoimmune thyroiditis is present; very rarely they may be associated with thyroid cancer. Anti-thyropoxidase (anti-TPO) antibodies can destroy thyroid tissues and are associated with autoimmune thyroiditis. Very high or low thyroid hormone values can induce arrhythmias, which may be life-threatening and very low levels, left untreated, may induce a coma.

Condition	TSH	Free T3	Free T4	Anti-Thyroglobulin antibodies	Anti-thyroid peroxidase antibodies
Adult reference values	0.27 - 4.20 μIU/mL	2.02 - 4.43 pg/mL	0.932 - 1.71 ng/dL	<= 115 IU/mL (Normal)	<= 34 IU/mL (Normal)
Hyperthyroid	Low	High	High	<= 115 IU/mL (Normal)	<= 34 IU/mL (Normal)
Primary Hypothyroid	High	Low	Low	<= 115 IU/mL (Normal)	<= 34 IU/mL (Normal)
Secondary Hypothyroid	Low	Low	Low	<= 115 IU/mL (Normal)	<= 34 IU/mL (Normal)
Possible Hashimoto's Disease	High	Low or Normal	Low	High	High
Possible Grave's Disease	Low	Normal or High	High	High	High

The chart includes common conditions associated with the patterns; these are presented as examples only. Review all symptoms and results with the ordering physician. Other medical conditions, medications, and nutritional status may all affect thyroid profile results.

Total T3 and T4 levels have not been included in the interpretation chart because they can be affected by levels of thyroid binding globulins which may be altered by comorbid liver disease (Huang 1995).

#### References:

- American Thyroid Association (2021) Thyroid Function Tests. <https://www.thyroid.org/thyroid-function-tests/> Accessed 06 August 2021.
- Drake T. (2019) Subclinical Hypothyroidism Balancing Act: Knowing When to Treat. Medscape. <https://www.medscape.com/viewarticle/919024> Accessed 09 August 2021.
- Huang MJ, Liaw YF. Clinical associations between thyroid and liver diseases. J Gastroenterol Hepatol. 1995 May-Jun;10(3):344-50.
- Lee S. (2020) Hyperthyroidism and Thyrotoxicosis. Medscape. <https://www.medscape.com/article/121865-overviewa1> Accessed 06 August 2021.
- Orlander P. (2021) Hyperthyroidism. Medscape. <https://www.medscape.com/article/122393-overview> Accessed 06 August 2021.