Thyroid Lab Reference Guide

Functional Medicine Optimal Ranges & Interpretation

Understanding your thyroid labs is key to identifying root causes of fatigue, weight changes, anxiety, depression, temperature intolerance, and more. These optimal ranges are often narrower than conventional lab ranges and can help detect early dysfunction.

Core Thyroid Markers & Optimal Ranges

Marker	Functional Optimal Range	Purpose/What It Tells You
TSH (Thyroid Stimulating Hormone)	0.4 – 2.5 µIU/mL	TSH signals the thyroid to produce hormones. High = underactive thyroid; low = overactive.
Free T4 (FT4)	15 – 23 pmol/L	Storage form of thyroid hormone produced by the thyroid gland.
Free T3 (FT3)	5 – 7 pg/mL	The active thyroid hormone used by cells. Low levels = fatigue, brain fog, low metabolism.
Reverse T3 (RT3)	11 – 18 ng/dL	Blocks FT3. High RT3 may indicate stress, inflammation, or nutrient deficiencies.
Total T3 (TT3)	120 – 181 ng/dL	Total amount of T3 in the blood (bound + free). Gives insight into overall production.

Functional Ratios for Deeper Insight

Ratio	Optimal Value	Clinical Insight
FT3 / FT4	> 0.33	Reflects conversion efficiency from T4 to T3. Low ratio may indicate poor conversion due to inflammation, stress, liver dysfunction, or nutrient deficiencies.
TT3 / RT3	> 6	Assesses the balance between usable T3 and blocking RT3. A low ratio may indicate a functional hypothyroid state even if TSH is “normal.”

Things That Can Affect Thyroid Function

- **Nutrient Deficiencies**: Iron, selenium, zinc, B12, iodine
- **Chronic Stress**: Raises RT3, lowers FT3
- **Gut Dysbiosis**: Impairs hormone conversion and recycling
- **Liver & Detox Issues**: T4 is converted to T3 in the liver
- **Environmental Toxins**: Fluoride, mercury, and plastics may disrupt function
- **Autoimmunity (Hashimoto's)**: May require additional antibody testing (TPO, TgAb)

Next Steps if Labs Are Suboptimal

- Work with a provider trained in functional medicine
- Consider root causes: stress, diet, toxins, autoimmunity
- Support conversion: selenium, zinc, vitamin A, B vitamins
- Optimize gut and liver health
- Assess adrenal function and inflammation

Reminder

Always interpret labs in context with symptoms, history, and other biomarkers. Functional optimal ranges are not a diagnosis but a tool for earlier intervention and whole-body support.