
Lab Dept: Chemistry

Test Name: FREE THYROXINE (T4)

General Information

Lab Order Codes: FT4

Synonyms: Free T4

CPT Codes: 84439 – Thyroxine; free

Test Includes: Free thyroxine concentration reported in ng/dL.

Logistics

Test Indications: Free Thyroxine (T4) is the portion of T4 that is not bound to transport proteins. It is metabolically active and is a precursor to triiodothyronine (T3). Free T4 levels correlate with T4 secretion and metabolism.

Lab Testing Sections: Chemistry

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 day

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Preferred: Green top (Li Hep) tube
Alternate: SST (gold, marble or red) tube, Lavender top (EDTA) tube, NaHep tube

Note: Collecting the alternate green tube will not allow for backup testing.

Draw Volume: 1.5 mL (Minimum: 0.6 mL) blood

Processed Volume: 0.5 mL (Minimum: 0.2 mL) plasma/serum

Collection:	Routine venipuncture
Special Processing:	Lab Staff: Centrifuge specimen, remove plasma/serum aliquot into a plastic sample cup. Store at 2-8 degrees Centigrade for up to 7 days.
Patient Preparation:	None
Sample Rejection:	Mislabeled or unlabeled specimen

Interpretive

Reference Range:	Age:	Range (ng/dL):
	0 – 14 days:	0.70 – 3.21
	15 – 29 days:	0.70 – 2.53
	30 days - <1 year:	0.70 – 1.7
	1 - <19 years:	0.70 – 1.37
	Adult:	0.70 – 1.48

Critical Values: N/A

Limitations: Elevated values may be seen in patients on thyroxine therapy. Heterophile antibodies may interfere with immunoassay tests. A number of drugs including phenytoin, carbamazepine, ibuprofen, and salicylate, may interfere with Free T4 results due to competition for TBG sites. Thyroid autoantibodies when present may cause elevated results.

Methodology: Chemiluminescent Microparticle Immunassay (CMIA)

References: National Committee for Clinical Laboratory Standards (NCCLS) (2002) Clinical Laboratory Technical Procedure Manuals; Approved Guideline-Fourth Edition GP2-A4

Bio-Rad Immunoassay Plus Control Product Insert

Burtis, CA, Ashwood, ER, Bruns, DE, ed (2006) Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 4th Edition, Philadelphia: W.B. Saunders

Jacobs and DeMott Laboratory Test handbook (2001) 5th Edition, Lexi-comp Inc

Updates:

7/22/2014: Method change, previously listed as Competitive Immunoassay/Competitive.

2/8/2016: Update alt tube types

12/4/2020: Updated for method Abbott Alinity, method Siemens Vista removed

2/2/2021: Updated container information

9/28/2021: Added EDTA as alternate

11/3/2021: Added NaHep as alternate

4/18/2022: Changed preferred tube to Green Li Hep