
Lab Dept: Chemistry

Test Name: T4 (THYROXINE) FREE (MAYO)

General Information

Lab Order Codes: FT4M

Synonyms: Free T4, Free Thyroxine

CPT Codes: 84439 - Triiodothyronine T3; free

Test Includes: Free T4 level reported in ng/dL.

Logistics

Test indications: Evaluation of suspected thyroid function disorders using free thyroxine measured together with thyroid-stimulating hormone.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Clinic Laboratories (Mayo Test: FRT4)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 – 2 days

Special Instructions: See [Patient Preparation](#)

Specimen

Specimen Type: Blood

Container: SST (Gold, marble or red)

Draw Volume: 3 mL (Minimum: 1.5 mL) blood

Processed Volume: 1 mL (Minimum: 0.5 mL) serum

Collection: Routine blood collection

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot to a screw-capped plastic vial. Store and ship at refrigerated temperatures.

Patient Preparation: For 12 hours before specimen collection do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.

Sample Rejection: Mislabeled or unlabeled specimens

Interpretive

Reference Range:

Age:	Reference Range (ng/dL):
0 – 5 days	0.9 – 2.5
6 days – 2 months	0.9 – 2.2
3 – 11 months	0.9 – 2.0
1 – 5 years	1.0 – 1.8
6 – 10 years	1.0 – 1.7
11 – 19 years	1.0 – 1.6
Adult: >20 years	0.9 – 1.7
Elevated values suggest hyperthyroidism or exogenous thyroxine. Decreased values suggest hypothyroidism.	
Free Thyroxine (FT4) works well to correct Total T4 values for thyroxine-binding globulin alterations, but may give misleading values when abnormal binding proteins are present or the patient has other major illnesses (euthyroid sick syndrome).	

Critical Values: N/A

Limitations: Of 26 commonly used pharmaceuticals tested in vitro, only furosemide caused elevated free thyroxine (FT4) findings at the daily therapeutic dosage level.

The test cannot be used in patients receiving treatment with lipid-lowering agents containing dextrothyroxine (D-T4). If the thyroid function is to be checked in such patients, the therapy should first be discontinued for 4 to 6 weeks to allow the physiological state to become re-established.

Methodology: Electrochemiluminescence Immunoassay

References: [Mayo Clinic Laboratories](#) (January 2021)

