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**Lab Dept:** Chemistry

**Test Name:** FREE THYROXINE (T4)

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***General Information***

**Lab Order Codes:** FT4

**Synonyms:** Free T4

**CPT Codes:** 84439 – Thyroxine; free

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

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***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

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***Specimen***

**Specimen Type:** Blood

**Container:** Preferred: Red, marble or gold top tube  
Alternate: Green top (Li or Na Heparin) tube, Lavender top (EDTA) 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

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***Interpretive***

**Reference Range:**

<b>Age:</b>	<b>Range (ng/dL):</b>
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