
Lab Dept: Chemistry

Test Name: T4 (THYROXINE) TOTAL, SERUM

General Information

Lab Order Codes: T4

Synonyms: T4 Total, Thyroxine

CPT Codes: 84436 – Thyroxine; total

Test Includes: Thyroxine concentration reported in ug/dL.

Logistics

Test Indications: Thyroxine (T4) is a hormone synthesized and secreted by the thyroid gland in response to the pituitary hormone, TSH. T4 is carried bound to Thyroxine Binding Globulin, and converted in the tissue to triiodothyronine (T3), the active hormone. The usefulness of the total T4 test has waned and Free T4 and TSH are recommended instead.

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: Red, marble or gold top tube
Alternate: Green top (Li Hep) tube

Note: Drawing 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) serum/plasma

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 (ug/dL):
	0 days - <1 year:	5.87 – 13.7
	1 – <9 years:	6.16 – 10.3
	9 – <12 years:	5.48 – 9.31
	12 - <14 years:	Female: 5.08 – 8.34
	12 - <14 years:	Male: 5.01 – 8.28
	14 - <19 years:	Female: 5.46 – 13.0
	14 - <19 years:	Male: 4.68 – 8.62
	Adult:	4.87 – 11.72

Critical Values:	N/A
Limitations:	Heterophile antibodies may interfere with immunoassay testing. Use of this T4 method for hypothyroidism screening in neonates has not been tested by Siemens.
Methodology:	Chemiluminescent Microparticle Immunosense (CMIA)
References:	DPC End User Procedure Manual Disk #0408111 (2005) 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, editors (2006) Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 4th Edition, Philadelphia: W.B. Saunders

Abbott Alinity i Total Reagent Instructions for Use, Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA, February 2018

Abbott Alinity i Total C4 Calibrator Kit Package Insert, Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA, February 2018

CALIPER Reference Interval Studies, access 10/27/2020

Bio-Rad Liquichek Immunoassay Plus Quality Control Package Insert, Bio-Rad Laboratories, Irvine, CA, April 2020

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

Updates:

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

2/9/2016: Update alt tube type

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

2/2/2020: Update container info.