
Lab Dept: Chemistry

Test Name: T3 (TRIIODOTHYRONINE) TOTAL - PATIENTS <1 YEAR

General Information

Lab Order Codes: TT3M

Synonyms: Total T3, Total Triiodothyronine

CPT Codes: 84480 - Triiodothyronine T3; total (TT-3)

Test Includes: Total T3 level reported in ng/dL.

Logistics

Test indications: Second-order testing for hyperthyroidism in patients with low thyroid-stimulating hormone values and normal thyroxine levels.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Clinic Laboratories (Mayo Test: T3)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 – 3 days

Special Instructions: See [Patient Preparation](#)

Specimen

Specimen Type: Blood

Container: SST (Gold, marble or red)

Draw Volume: 3 mL (Minimum: 2.25 mL) blood

Processed Volume: 1 mL (Minimum: 0.75 mL) serum

Collection: Routine blood collection

Special Processing: Lab Staff: Centrifuge specimen, remove serum aliquot to a screw-capped plastic tube. 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: Gross hemolysis; mislabeled or unlabeled specimens

Interpretive

Reference Range:

Age:	Reference Range (ng/dL):
0 – 5 days	73 - 288
6 days – 2 months	80 - 275
3 – 11 months	86 - 265
1 – 5 years	92 - 248
6 – 10 years	93 - 231
11 – 19 years	91 - 218
Adult (> or = 20 years)	80 - 200
Interpretation: Triiodothyronine (T3) values above 200 ng/dL in adults or over age related cutoffs in children are consistent with hyperthyroidism or increased thyroid hormone-binding proteins. Abnormal levels (high or low) of thyroid hormone-binding proteins (primarily albumin and thyroid-binding globulin) may cause abnormal T3 concentrations in euthyroid patients.	

Critical Values: N/A

Limitations: Triiodothyronine (T3) is not a reliable marker for hypothyroidism.

Therapy with amiodarone can lead to depressed T3 values.

Phenytoin, phenylbutazone, and salicylates cause release of T3 from the binding proteins, thus leading to a reduction in the total T3 hormone level at normal T3 levels.

Autoantibodies to thyroid hormones can interfere with the assay.

Binding protein anomalies may cause values that deviate from the expected results. Pathological concentrations of binding proteins can lead to results

outside the reference range, although the patient may be in a euthyroid state. Free T3 or free T4 testing is indicated in these cases.

Some patients who have been exposed to animal antigens, either in the environment or as part of treatment or imaging procedures, may have circulating anti-animal antibodies present. These antibodies may interfere with the assay reagents to produce unreliable results.

T3 has a 15-fold higher affinity for thyroid receptor compared to T4.

Methodology: Electrochemiluminescence Immunoassay

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

Updates: 01/09/23: Updated reference range data