**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 Thyroxing 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**

<table>
<thead>
<tr>
<th>Age</th>
<th>Range (ug/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 days - &lt;1 year:</td>
<td>5.87 – 13.7</td>
</tr>
<tr>
<td>1 – &lt;9 years:</td>
<td>6.16 – 10.3</td>
</tr>
<tr>
<td>9 – &lt;12 years:</td>
<td>5.48 – 9.31</td>
</tr>
<tr>
<td>12 - &lt;14 years:</td>
<td><strong>Female</strong>: 5.08 – 8.34</td>
</tr>
<tr>
<td>12 - &lt;14 years:</td>
<td><strong>Male</strong>: 5.01 – 8.28</td>
</tr>
<tr>
<td>14 - &lt;19 years:</td>
<td><strong>Female</strong>: 5.46 – 13.0</td>
</tr>
<tr>
<td>14 - &lt;19 years:</td>
<td><strong>Male</strong>: 4.68 – 8.62</td>
</tr>
<tr>
<td>Adult:</td>
<td>4.87 – 11.72</td>
</tr>
</tbody>
</table>

Critical Values: N/A

Limitations: Heterophile antibodies may interfere with immunoassay testing. Use of this T4 method for hypothyroidism screening in neonates has not be tested by Siemens.

Methodology: Chemiluminiscent Microparticle Immunosense (CMIA)


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


Updates:

7/22/2014: Method update, previously listed as Competitive Immunoassay/Chemiluminescent.
2/9/2016: Update alt tube type
2/2/2020: Update container info.