
Lab Dept: Chemistry

Test Name: TESTOSTERONE, TOTAL

General Information

Lab Order Codes: TESTO

Synonyms: Testosterone level

CPT Codes: 84403 – Testosterone; total

Test Includes: Total testosterone reported in ng/dL.

Logistics

Test Indications: Useful for assessing LH secretion and Leydig cell function; evaluating gonadal and adrenal function. For pediatrics, it assists in the detection of hypogonadism in males, pituitary or hypothalamic disease, adrenal hyperplasia, and virilizing tumors of the adrenal gland or ovaries in females. **Note: For children <1 year, order testing to be performed at Mayo Clinic Laboratories by LC-MS/MS.**

Lab Testing Sections: Chemistry – (Performed on Minneapolis Campus)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: Performed daily

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Preferred: SST (Gold, marble or red)
Alternate: Lavender (EDTA) tube

Draw Volume: 1.5 mL (Minimum: 0.3 mL) blood

Processed Volume: 0.5 mL (Minimum: 0.1 mL) serum

Note: Minimum volume does not permit repeat analysis

Collection: Routine blood collection

Special Processing: Lab Staff: Centrifuge specimen within one hour of collection. Remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at room temperatures. Do not exceed 8 hours at room temperature. Forward promptly.

Patient Preparation: None

Sample Rejection: Specimen not separated within 1 hour of draw; mislabeled or unlabeled specimens; gross hemolysis

Interpretive

Reference Range:

Male Ranges by Age (ng/dL):				
0 – 6 months:		8 – 300		
6 months – 9 years:		<4.33 – 35		
9 – 11 years:		<4.33 – 24		
11 – 14 years:		8 – 445		
14 – 16 years:		36 - 632		
16 – 19 years:		147 – 795		
Adult:		240 – 871		
Female Ranges by Age (ng/dL):				
0 – 9 years:		<4.33 – 62		
9 – 13 years:		<4.33 – 28		
13 – 15 years:		10 – 44		
15 – 19 years:		14 – 49		
Adult:		<4.33 – 50		
Tanner Stage	Mean Age Male (Years)	Males (ng/dL)	Mean Age Female (Years)	Females (ng/dL)

1	>14 days & prepubertal	<4.33 - 20	>14 days & prepubertal	<4.33 - 20
2	12	<4.33 - 25	10.5	<4.33 - 20
3	13.6	<4.33 - 543	11.6	<4.33 - 42
4	15	8 - 636	12.3	8 - 42
5	By age 18	99 - 760	14.5	<4.33 - 50

Critical Values: N/A

Limitations: A strong interaction with D- (-) Norgestrel (1000 ng/mL), 19-nortestosterone, and 11-Ketotestosterone was found. Do not use samples from patients receiving these compounds.

Testosterone Propionate, Ethisterone and 11b-Hydroxytestosterone also cause moderate interference and an alternate method should be used to quantify testosterone.

If testosterone results are inconsistent with clinical evidence, additional testing is recommended.

Methodology: Chemiluminescent Microparticle Immunoassay

References: Abbott Architect 2nd Generation Testosterone Package Insert (June 2016) Ref 2P13-27, Abbott Laboratories Diagnostics Divisions, Abbott Park, IL, 60064, USA

Abbott Alinity i Testosterone Reagent Kit Instructions for Use (February 2018) Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Abbott Alinity i Testosterone Calibrator Package Insert (March 2018) Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Bio-Rad Liquichek Immunoassay Plus Package Insert, Bio-Rad Laboratories, Irvine, CA, 92618, USA

CALIPER Reference Range Study (accessed 4/20/2018)

Updates:
 12/13/2010: Reference range updates.
 8/3/2016: Tube update, volume update.
 8/2/2017: Ref range update (Males >18 yrs), tube update.
 4/24/2018: Updated method, volumes and reference ranges.
 5/9/2018: Updated reference ranges by age.
 11/15/2018: Updated reference ranges.
 12/8/2020: Updated for method Abbott Alinity