

**Reporting Title:** Testosterone, Total and Free, S**Performing Location:** Mayo Clinic Laboratories - Rochester Superior Drive**Ordering Guidance:**

This is a second-level test for suspected increases or decreases in physiologically active testosterone. The preferred test for assessment of active testosterone is TTBS / Testosterone, Total and Bioavailable, Serum.

**Necessary Information:**

Patient's age and sex are required.

**Specimen Requirements:****Supplies:** Sarstedt Aliquot Tube, 5 mL (T914)**Collection Container/Tube:** Red top (serum gel/SST are **not acceptable**)**Submission Container/Tube:** Plastic vial**Specimen Volume:** 2.5 mL**Collection Instructions:** Centrifuge and aliquot serum into a plastic vial**Forms:**

Specimen Type	Temperature	Time	Special Container
Serum Red	Refrigerated (preferred)	14 days	
	Frozen	60 days	

**Result Codes:**

Result ID	Reporting Name	Type	Unit	LOINC®
3631	Testosterone Free	Numeric	ng/dL	2991-8
8533	Testosterone, Total, S	Numeric	ng/dL	2986-8

LOINC® and CPT codes are provided by the performing laboratory.

**Supplemental Report:**

No

**Components:**

Test Id	Reporting Name	CPT Units	CPT Code	Always Performed	Available Separately
FRTST	Testosterone, Free, S	1	84402	Yes	No
TTST	Testosterone, Total, S	1	84403	Yes	Yes

**CPT Code Information:**

84402

84403

**Reference Values:**

## TESTOSTERONE, FREE

## Males (adult):

20-<25 years: 5.25-20.7 ng/dL  
25-<30 years: 5.05-19.8 ng/dL  
30-<35 years: 4.85-19.0 ng/dL  
35-<40 years: 4.65-18.1 ng/dL  
40-<45 years: 4.46-17.1 ng/dL  
45-<50 years: 4.26-16.4 ng/dL  
50-<55 years: 4.06-15.6 ng/dL  
55-<60 years: 3.87-14.7 ng/dL  
60-<65 years: 3.67-13.9 ng/dL  
65-<70 years: 3.47-13.0 ng/dL  
70-<75 years: 3.28-12.2 ng/dL  
75-<80 years: 3.08-11.3 ng/dL  
80-<85 years: 2.88-10.5 ng/dL  
85-<90 years: 2.69-9.61 ng/dL  
90-<95 years: 2.49-8.76 ng/dL  
95-100+ years: 2.29-7.91 ng/dL

## Males (children):

<1 year: Term infants

1-15 days: 0.20-3.10 ng/dL\*

16 days-1 year: Values decrease gradually from newborn (0.20-3.10 ng/dL) to prepubertal levels

\*Forest MG, Cathiard AM, Bertrand JA. Total and unbound testosterone levels in the newborn and in normal and hypogonadal children: use of a sensitive radioimmunoassay for testosterone. J Clin Endocrinol Metab. 1973;36(6):1132-1142

1-8 years: <0.13 ng/dL

9 years: <0.13-0.45 ng/dL

10 years: <0.13-1.26 ng/dL

11 years: <0.13-5.52 ng/dL

12 years: <0.13-9.28 ng/dL

13 years: <0.13-12.6 ng/dL

14 years: 0.48-15.3 ng/dL

15 years: 1.62-17.7 ng/dL

16 years: 2.93-19.5 ng/dL

17 years: 4.28-20.9 ng/dL

18 years: 5.40-21.8 ng/dL

19 years: 5.36-21.2 ng/dL

## Females (adult):

20-<25 years: <0.13-1.08 ng/dL

25-<30 years: <0.13-1.06 ng/dL

30-<35 years: <0.13-1.03 ng/dL  
35-<40 years: <0.13-1.00 ng/dL  
40-<45 years: <0.13-0.98 ng/dL  
45-<50 years: <0.13-0.95 ng/dL  
50-<55 years: <0.13-0.92 ng/dL  
55-<60 years: <0.13-0.90 ng/dL  
60-<65 years: <0.13-0.87 ng/dL  
65-<70 years: <0.13-0.84 ng/dL  
70-<75 years: <0.13-0.82 ng/dL  
75-<80 years: <0.13-0.79 ng/dL  
80-<85 years: <0.13-0.76 ng/dL  
85-<90 years: <0.13-0.73 ng/dL  
90-<95 years: <0.13-0.71 ng/dL  
95-100+ years: <0.13-0.68 ng/dL

**Females (children):**

<1 year: Term infants

1-15 days: <0.13-0.25 ng/dL\*

16 days-1 year: Values decrease gradually from newborn (<0.13-0.25 ng/dL) to prepubertal levels

\*Forest MG, Cathiard AM, Bertrand JA. Total and unbound testosterone levels in the newborn and in normal and hypogonadal children: use of a sensitive radioimmunoassay for testosterone. J Clin Endocrinol Metab. 1973;36(6):1132-1142

1-4 years: <0.13 ng/dL

5 years: <0.13 ng/dL

6 years: <0.14 ng/dL

7 years: <0.13-0.23 ng/dL

8 years: <0.13-0.34 ng/dL

9 years: <0.13-0.46 ng/dL

10 years: <0.13-0.59 ng/dL

11 years: <0.13-0.72 ng/dL

12 years: <0.13-0.84 ng/dL

13 years: <0.13-0.96 ng/dL

14 years: <0.13-1.06 ng/dL

15-18 years: <0.13-1.09 ng/dL

19 years: <0.13-1.08 ng/dL

**TESTOSTERONE, TOTAL****Males**

0-5 months: 75-400 ng/dL

6 months-9 years: <7-20 ng/dL

10-11 years: <7-130 ng/dL

12-13 years: <7-800 ng/dL

14 years: <7-1,200 ng/dL

15-16 years: 100-1,200 ng/dL

17-18 years: 300-1,200 ng/dL

> or =19 years: 240-950 ng/dL

Tanner Stages\*\*

I (prepubertal): <7-20

II: 8-66

III: 26-800

IV: 85-1,200

V (young adult): 300-950

Females

0-5 months: 20-80 ng/dL

6 months-9 years: <7-20 ng/dL

10-11 years: <7-44 ng/dL

12-16 years: <7-75 ng/dL

17-18 years: 20-75 ng/dL

> or =19 years: 8-60 ng/dL

Tanner Stages\*\*

I (prepubertal): <7-20

II: <7-47

III: 17-75

IV: 20-75

V (young adult): 12-60

\*\*Puberty onset (transition from Tanner stage I to Tanner stage II) occurs for boys at a median age of 11.5 (+/-2) years and for girls at a median age of 10.5 (+/-2) years. There is evidence that it may occur up to 1 year earlier in obese girls and in African American girls. For boys, there is no definite proven relationship between puberty onset and body weight or ethnic origin. Progression through Tanner stages is variable. Tanner stage V (young adult) should be reached by age 18.