MAYO CLINIC
Mayo Medical Laboratories

TEST CHANGE

NOTIFICATION DATE: February 10, 2016
EFFECTIVE DATE: February 15, 2016

TESTOSTERONE, TOTAL AND FREE, SERUM
Test ID: TGRP

EXPLANATION: A component of Mayo Medical Laboratories test TGRP, Testosterone Total and Free will undergo a reference range change. In November 2015, Mayo Medical Laboratories implemented a new version of the free testosterone by equilibrium dialysis. This method showed a 27 percentage low bias to the previous method. Since that change, our laboratory has determined that our reference ranges for adult males was set too low. Additional studies have led to an adjustment of our reference ranges for Free Testosterone.

CURRENT REFERENCE VALUE	NEW REFERENCE VALUE
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.	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.

TESTOSTERONE, FREE

Males (adult):

20 - <25 years: 1.76-20.33 ng/dL
25 - <30 years: 1.61-19.65 ng/dL
30 - <35 years: 1.51-18.57 ng/dL
35 - <40 years: 1.39-17.69 ng/dL
40 - <45 years: 1.26-16.81 ng/dL
45 - <50 years: 1.14-15.93 ng/dL
50 - <55 years: 1.02-15.05 ng/dL
55 - <60 years: 0.89-14.17 ng/dL
60 - <65 years: 0.77-13.30 ng/dL
65 - <70 years: 0.64-12.42 ng/dL
70 - <75 years: 0.52-11.54 ng/dL
75 - <80 years: 0.40-10.66 ng/dL
80 - <85 years: 0.30-9.78 ng/dL
85 - <90 years: 0.30-8.90 ng/dL
90 - <95 years: 0.30-8.02 ng/dL
95-100+ years: 0.30-7.14 ng/dL

Males (children):

1-8 years: < or =.30 ng/dL
9 years: <0.30-0.45 ng/dL
10 years: <0.30-2.06 ng/dL
11 years: <0.30-4.64 ng/dL
12 years: <0.30-7.89 ng/dL
13 years: <0.30-11.52 ng/dL
14 years: <0.30-15.23 ng/dL
15 years: 0.32-18.72 ng/dL
16 years: 0.58-18.72 ng/dL
17 years: 0.94-18.72 ng/dL
18 years: 1.43-21.03 ng/dL
19 years: 1.83-20.86 ng/dL

Females (adult):

20 - <25 years: <0.30-1.06 ng/dL
25 - <30 years: <0.30-1.03 ng/dL
30 - <35 years: <0.30-1.00 ng/dL
35 - <40 years: <0.30-0.97 ng/dL
40 - <45 years: <0.30-0.95 ng/dL
45 - <50 years: <0.30-0.92 ng/dL
50 - <55 years: <0.30-0.89 ng/dL
55 - <60 years: <0.30-0.86 ng/dL
60 - <65 years: <0.30-0.83 ng/dL
65 - <70 years: <0.30-0.80 ng/dL
70 - <75 years: <0.30-0.77 ng/dL
75 - <80 years: <0.30-0.74 ng/dL
80 - <85 years: <0.30-0.71 ng/dL
85 - <90 years: <0.30-0.68 ng/dL
90 - <95 years: <0.30-0.66 ng/dL
95-100+ years: <0.30-0.64 ng/dL

Females (children):

1-7 years: < or =0.30 ng/dL
8 years: <0.30-0.34 ng/dL
9 years: <0.30-0.46 ng/dL

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 to 15 days: 0.20-3.10 ng/dL*
16 days to 1 year: Values decrease gradually from newborn (0.20-3.10 ng/dL) to prepubertal levels
1-8 years: <0.04-0.11 ng/dL
9 years: <0.04-0.45 ng/dL
10 years: <0.04-1.26 ng/dL
11 years: <0.04-5.52 ng/dL
12 years: <0.04-9.28 ng/dL
13 years: <0.04-12.6 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: 0.06-1.08 ng/dL
25 - <30 years: 0.06-1.06 ng/dL
30 - <35 years: 0.06-1.03 ng/dL
35 - <40 years: 0.06-1.00 ng/dL
40 - <45 years: 0.06-0.98 ng/dL
45 - <50 years: 0.06-0.95 ng/dL
50 - <55 years: 0.06-0.92 ng/dL
55 - <60 years: 0.06-0.90 ng/dL
60 - <65 years: 0.06-0.87 ng/dL
65 - <70 years: 0.06-0.84 ng/dL
70 - <75 years: 0.06-0.82 ng/dL
75 - <80 years: 0.06-0.79 ng/dL
80 - <85 years: 0.06-0.76 ng/dL
85 - <90 years: 0.06-0.73 ng/dL
90 - <95 years: 0.06-0.71 ng/dL
95-100+ years: 0.06-0.68 ng/dL

Females (children):
<1 year: Term infants
1 to 15 days: 0.06-0.25 ng/dL*
16 days to 1 year: Values decrease gradually

10 years: <0.30-0.59 ng/dL 11 years: <0.30-0.72 ng/dL 12 years: <0.30-0.84 ng/dL 13 years: <0.30-0.96 ng/dL 14 years: <0.30-1.06 ng/dL 15-18 years: <0.30-1.09 ng/dL 19 years: <0.30-1.08 ng/dL	from newborn (0.06-0.25 ng/dL) to prepubertal levels 1-4 years: <0.04 ng/dL 5 years: <0.04-0.07 ng/dL 6 years: <0.04-0.14 ng/dL 7 years: <0.04-0.23 ng/dL 8 years: <0.04-0.34 ng/dL 9 years: <0.04-0.46 ng/dL 10 years: <0.04-0.59 ng/dL 11 years: <0.04-0.72 ng/dL 12 years: <0.04-0.84 ng/dL 13 years: <0.04-0.96 ng/dL 14 years: <0.04-1.06 ng/dL 15-18 years: <0.04-1.09 ng/dL 19 years: 0.06-1.08 ng/dL *Citation: J Clin Endocrinol Metab 1973;36(6):1132-1142

QUESTIONS: Contact your Mayo Medical Laboratories' Regional Manager or
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