



**CLIENT NOTICE**

**Change in Methodology for Measurement of Free Testosterone Levels**

Effective September 29, 2014, Gamma-Dynacare Medical Laboratories will be changing the methodology for free testosterone (FT) measurement. FT results will be calculated using Vermeulen’s equation<sup>1</sup>, incorporating the levels of serum total testosterone, sex hormone binding globulin (SHBG) and albumin. The current analog-based measuring method will be discontinued.

Calculation of FT, rather than measurement by analog methods, is recommended in the diagnosis and follow-up of androgen-related disorders<sup>2,3</sup>. Calculation of FT provides superior correlation with FT measured by the gold standard methodology of equilibrium dialysis.

New reference intervals for calculated FT are listed below; please note the significant difference between new and current intervals. Due to differences in methodologies and calibration, calculated FT values are expected to be several-fold higher versus those determined by analog method. Therefore, previously reported FT values cannot be compared to those obtained by calculation and re-establishment of baseline values will be required.

<b>Free Testosterone Reference Ranges</b>		
	<b>Calculated (new)</b>	<b>Analog-based measurement (old)</b>
<b>Male</b>	0-10 yrs: < 20 pmol/L 11-17yrs: During puberty, free testosterone levels increase from child to adult concentrations, depending on the Tanner stage. 18-49 yrs: 196 - 636 pmol/L >49 yrs: 179 - 475 pmol/L	0-10 yrs: < 2.0 pmol/L 11-18yrs: During puberty, free testosterone levels increase from child to adult concentrations, depending on the Tanner stage. 19-39 yrs: 31.0 - 94.0 pmol/L 40-59 yrs: 25.0 - 80.0 pmol/L > 59 yrs: 19.0 - 66.0 pmol/L
<b>Female</b>	0-10 yrs: < 20 pmol/L 11-16yrs: During puberty, free testosterone increases from child to adult concentrations depending on the Tanner stage. 17-29 yrs: < 56 pmol/L >29 yrs: < 30 pmol/L Note: FT results may be underestimated in pregnant patients due to interference by steroids (e.g. excess estradiol) binding to sex hormone-binding globulin.	0-10 yrs: < 2.0 pmol/L 11-18yrs: During puberty, free testosterone increases from child to adult concentrations depending on the Tanner stage. 19-39 yrs: < 8.9 pmol/L 40-59 yrs: < 7.0 pmol/L >59 yrs: < 5.4 pmol/L

For further information regarding testing for FT, please contact:

Hui Li, Ph.D., FCACB, DABCC, FACB  
 Clinical Chemist  
[lih@gamma-dynacare.com](mailto:lih@gamma-dynacare.com)  
 905-790-3515 x 5208

1. Vermeulen A, et al. *J Clin Endocrinol Metab*, 1999, 84:3666–72.
2. Bashin S, et al. *J Clin Endocrinol Metab*, 2010, 95:2536–59.
3. Rosner W, *J Clin Endocrinol Metab*, 2007, 92:405–13.