

## ORIGINAL ARTICLE

# The DSL Analog Free Testosterone Assay: Serum Levels are Not Related to Sex Hormone-Binding Globulin in Normative Data Throughout Childhood and Adolescence

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### SUMMARY

In this study we tested the performance of easy-to-use and rapid, commercially available immunoassays to measure free testosterone (fT) and sex hormone-binding globulin (SHBG). We asked whether fT and SHBG serum levels are age-dependent and whether or not there is a gender dependence of fT and SHBG in this age group. Finally, by measuring fT and SHBG in sera of a cohort of healthy children and adolescents using commercially available immunoassays, we established normative data for fT and SHBG in this age group: in boys fT levels increased significantly ( $r=0.83$ ,  $p<0.0001$ ) from 0.63 pmol/l (median) in the age group below 5 years to 56.9 pmol/l in the age group 16-20 years. In girls fT levels also increased with age ( $r=0.66$ ,  $p<0.0001$ ): from 0.72 pmol/l (median) in the age group below 5 years to 3.34 pmol/l in the age group 16-20 years. In contrast, SHBG serum concentrations significantly decreased with age in boys ( $r=-0.62$ ,  $p<0.0001$ ) but remained constant in girls ( $r=0.04$ , n.s.). Importantly, fT values were independent of SHBG levels as determined by our methods. In conclusion, fT can be measured in an acceptable quality using the DSL analog tracer-based immunoassay and normative data are now available. In addition, SHBG levels in healthy children and adolescents are also given and may permit for studies of pathophysiologic states in this age group. (Clin. Lab. 2001;47:73-77)