

Cut-off values for nocturnal salivary testosterone to enable detection of early puberty



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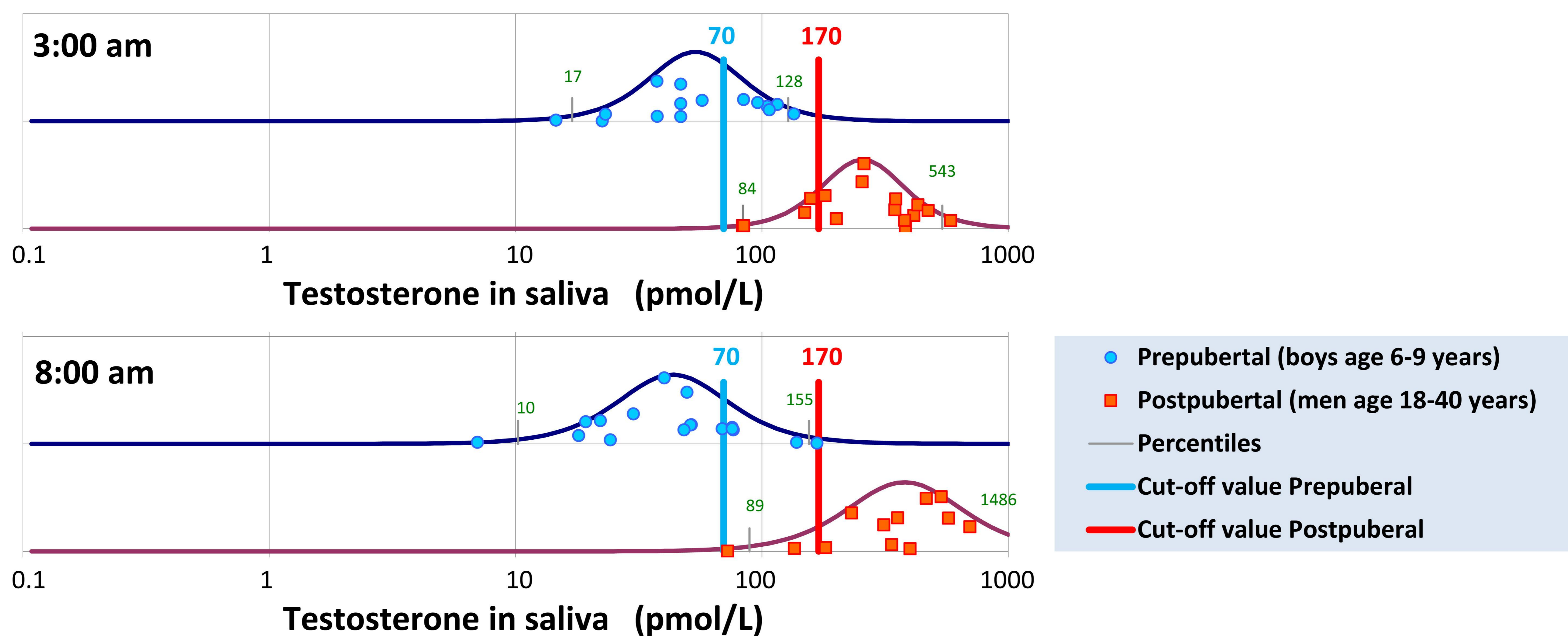
Introduction

- In the evaluation of suspected delayed puberty in boys, testosterone is one of the crucial hormones in assessing gonadal function.
- The unbound, free fraction of testosterone is considered to be the biological active fraction. Salivary testosterone reflects this free fraction.
- Testosterone levels demonstrate a diurnal pattern during pubertal development.
- Advantages of using salivary testosterone: non-invasive, easy, multiple and nocturnal sampling.
- To date no data are available regarding nocturnal salivary testosterone using LC-MS/MS.

Objective and method

- To establish cut-off values of nocturnal salivary testosterone in prepubertal boys and postpubertal men.
- 20 boys age 6-9 years, 19 men age 18-40 years.
- Collection of saliva at 03.00 a.m. and 08.00 a.m. using Eye Sponge Visitec.
- Analysis by LC-MS/MS.

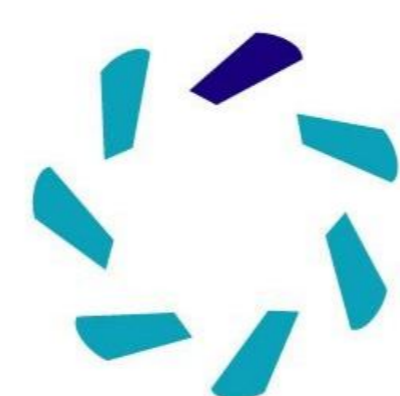
Results



- As these reference values overlap, cut-off values were determined.
- Based on these cut-off values 81% of samples can be correctly classified as being pre- or postpubertal.

Conclusion

- Nocturnal salivary testosterone can be measured in prepubertal boys and postpubertal men.
- Nocturnal salivary testosterone can be used to assess differences in testosterone levels during day and night.
- Cut-off values defining pre- and postpuberty were established, being 70 pmol/L and 170 pmol/L.
- Using these cut-off values, in 81% of patients pubertal status can be determined correctly using salivary testosterone.
- Future research should focus on defining cut-off values of nocturnal salivary testosterone during puberty and correlating this to Tanner stadia.



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