



Testosterone

Synonyms

Total testosterone

Clinical Indication

In females, testosterone is produced in the ovaries and adrenal glands and is primarily measured to exclude androgen excess as a result of adrenal or ovarian tumours. In males, testosterone is usually measured as a part of the investigation of impotence/infertility or suspected hypopituitarism.

Used in the assessment of androgen status.

Part of Profile / See Also

Request Form

Combined Pathology manual Blood form or ICE request

Availability / Frequency of Analysis

On request.

Turnaround Time

Same Day (Monday – Friday)

Patient Preparation

Samples should ideally be collected early morning between 7 and 10 am in males. Patients should be fasting.

Sample Requirements

Specimen Type

Serum

Volume

0.5 ml

Container



Yellow top (SST) tube



Paediatric lithium heparin (Orange top – Sarstedt tube)



Paediatric lithium-heparin (Green top – BD Microtainer)

Reference Range & Units

Age	Testosterone (nmol/L)		Source
	Males	Females	
1 - 5 years	< 9.85	< 2.19	Caliper study
5 - 6 years	< 0.35	< 0.35	
6 - 8 years	< 0.62	< 0.62	
8 – 11 years	< 1.63	< 1.63	
> 11 years	6.1 – 27.1	< 2.4	

Tanner Stage	Testosterone (nmol/L)	
	Males (aged 7-18 yrs)	Females (aged 8-18 yrs)
1	Less than 0.09	< 0.21
2	< 15.0	< 0.36
3	2.3 - 27.0	< 0.82
4	6.2 - 26.5	< 0.93
5	6.5 - 30.6	0.16 - 1.33

Reference: Beckman method insert.

Interferences

None

Interpretation & Clinical

Decision Value (if applicable)

Female: Studies show that a total testosterone less than 5.0 nmol/L is rarely associated with serious pathology. Levels above 5.0 nmol/L may indicate a serious ovarian or adrenal disorder, but are also seen in some cases of PCOS. In such cases, raised androstenedione and raised DHEA-S suggest adrenal involvement, whereas increased androstenedione and normal DHEA-S suggest ovarian pathology.

Male: Please note diurnal rhythm: levels are highest at 7–11am and lowest around 6.00pm. Levels decrease with age (due to decrease in SHBG) and some normal men will have levels at the lower end of the reference range. Eating may transiently lower testosterone levels. If a patient has a low result the test should be repeated on a 9 a.m. fasting sample. Patients with testicular failure will have low testosterone levels with raised LH and FSH levels.

Testosterone levels may be low in erectile dysfunction BUT do not correlate with erectile dysfunction (or impotence / libido) i.e. may have normal levels.

References

Test code

TES

Lab Handling

Analysed from primary tube and stored at 4°C. Serum testosterone stable for 7 days at 4C.