



Cortisol

Synonyms

Clinical Indication

For the investigation of possible Addison's disease (primary adrenocortical insufficiency) or Cushing's disease. Monitoring steroid replacement in adrenal insufficiency.

Cortisol secretion is closely regulated by ACTH, which is secreted in an episodic manner superimposed on a circadian rhythm. Cortisol secretion occurs in parallel to the secretion of ACTH. Cortisol secretion is low in the evening and continues to decline into the first few hours of sleep, after which there is an increase. After waking, an individual's cortisol secretion gradually declines throughout the day, with fewer secretory episodes of smaller magnitude. ACTH (and thus cortisol) secretion is stimulated by stress.

Part of Profile / See Also

Request Form

Combined Pathology manual Blood form or ICE request

Availability / Frequency of Analysis

On request. If an ACTH is also requested the samples must be collected at Basildon or Southend Hospital and brought to the laboratory immediately.

Turnaround Time

Same day

Patient Preparation

Cortisol shows considerable diurnal variation and samples must be collected between 8.00am and 9.00am for meaningful results to be obtained.

Sample Requirements

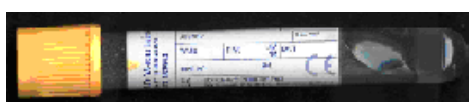
Specimen Type

Serum and plasma

Volume

2 ml

Acceptable Containers



Yellow top (SST) tube



Green top (lithium-heparin) tube



paediatric orange top (lithium-heparin)



paediatric green top (lithium-heparin)

Plain serum samples may also be used.

Reference Range & Units

Early morning sample: 185 - 624 nmol/L

Reference: Beckman method insert

Interferences

Please note that hydrocortisone, methylprednisolone, or prednisolone all cross-react with the cortisol assay.

Interpretation & Clinical

Critical Difference 58 nmol/L

Decision Value (if applicable)

Investigation of Addison's. Normal results do not exclude Addison's and a short synacthen test may be required.

Investigation of Cushing's. Normal results do not exclude Cushing's and a dexamethasone suppression test may be required.

References

Assay specific lower limits of normal for the cortisol response to ACTH will be changed to 450 nmol/L as determined in the paper: El-Farhan N., Pickett A., Ducroq D., Bailey C., Mitchem K., Morgan N., Armston A., Jones L., Evans C. and Rees D.A.

Method-specific serum cortisol responses to the adrenocorticotrophin test: comparison of gas chromatography mass spectrometry and five automated immunoassays. *Clinical Endocrinology* (2013) 78, 673–680

Test code

CORT

Lab Handling

Analysed from primary tube and stored at 4°C
Serum and plasma stable for 7 days at 2-8°C