

Reporting Title: Cortisol, Free and Total, S

Performing Location: Rochester

Ordering Guidance:

For confirming the presence of synthetic steroids, order SGSS / Synthetic Glucocorticoid Screen, Serum.

Cushing syndrome is characterized by increased serum cortisol levels. However, the 24-hour urinary free cortisol excretion is the preferred screening test for Cushing syndrome, specifically CORTU / Cortisol, Free, 24 Hour, Urine that utilizes liquid chromatography tandem mass spectrometry. A normal result makes the diagnosis unlikely.

The most common cause of increased plasma cortisol levels in women is a high circulating concentration of estrogen (ie, estrogen therapy, pregnancy) resulting in increased concentration of corticosteroid-binding globulin. This does not result in an increase in the free, bioactive cortisol fraction. For this reason, measurement of 24-hour urinary free cortisol (CORTU / Cortisol, Free, 24 Hour, Urine) or demonstration of absent diurnal variation (ie, by midnight salivary cortisol measurement SALCT / Cortisol, Saliva) are the preferred means of diagnosing spontaneous Cushing syndrome.

This test is not recommended for evaluating response to metyrapone; DCORT / 11-Deoxycortisol, Serum is more reliable.

A low plasma cortisol level does not give conclusive indication of congenital adrenal hyperplasia. DCORT / 11-Deoxycortisol, Serum; OHPG / 17-Hydroxyprogesterone, Serum; and DHEA_ / Dehydroepiandrosterone (DHEA), Serum provide a more accurate and specific determination of the enzyme deficiency.

Necessary Information:

Include time of collection.

Specimen Requirements:

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)

Collection Container/Tube: Red top (serum gel/SST are **not acceptable**)

Submission Container/Tube: Plastic vial

Specimen Volume: 1.85 mL

Collection Instructions:

- 1. Morning (8 a.m.) specimens are preferred. The 8 a.m. cortisol can be referred to as the a.m. cortisol and can be collected anywhere between 6 a.m. and 10:30 a.m. in the morning.
- 2. Centrifuge and aliquot serum into a plastic vial.

Additional Information: If multiple specimens are collected, send separate order for each specimen.

Specimen Type	Temperature	Time	Special Container
Serum Red	Ambient	28 days	
	Refrigerated (preferred)	28 days	
	Frozen	28 days	

Ask at Order Entry (AOE) Questions:

Test ID	Question ID	Description	Type	Reportable
CINP	COLT2	Collection Time in Military Time	Plain Text	Yes

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
84279	Cortisol, S, LC-MS/MS	Numeric	mcg/dL	2143-6
23606	AM Cortisol	Numeric	mcg/dL	9813-7
23607	PM Cortisol	Numeric	mcg/dL	9812-9
65423	Cortisol, Free, S	Numeric	mcg/dL	2145-1

LOINC® and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

Components:

Test Id	Reporting Name	CPT Units	CPT Code	Always Performed	Available Separately
CINP	Cortisol, S, LC-MS/MS	1	82533	Yes	Yes
CORTF	Cortisol, Free, S	1	82530	Yes	Yes

CPT Code Information:

82530

82533

Reference Values:

FREE CORTISOL

6-10:30 a.m. Collection: 0.121-1.065 mcg/dL

TOTAL CORTISOL

5-25 mcg/dL (a.m.)

2-14 mcg/dL (p.m.)

Pediatric reference ranges are the same as adults, as confirmed by peer-reviewed literature.

Petersen KE. ACTH in normal children and children with pituitary and adrenal diseases. I. Measurement in plasma by radioimmunoassay-basal values. Acta Paediatr Scand. 1981;70(3):341-345