

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:

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 Minimum Volume:

1.2 mL

Specimen Type	Temperature	Time	Special Container
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Serum Red	Refrigerated (preferred)	28 days	
	Ambient	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	No

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
84279	Cortisol, S, LC-MS/MS Also used by tests: CINP	Numeric	mcg/dL	2143-6
23606	AM Cortisol Also used by tests: CINP	Numeric	mcg/dL	9813-7
23607	PM Cortisol Also used by tests: CINP	Numeric	mcg/dL	9812-9
65423	Cortisol, Free, S Also used by tests: CORTF	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	Orderable Separately
CINP	Cortisol, S, LC-MS/MS			Yes	Yes
CORTF	Cortisol, Free, S			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;70:341-345