
Lab Dept: Chemistry

Test Name: CORTISOL

General Information

Lab Order Codes: CORTI

Synonyms: N/A

CPT Codes: 82533 – Cortisol; total

Test Includes: Serum cortisol measured in mcg/dL.

Logistics

Test Indications: Useful for patients who are not, or are not suspected to be, taking exogenous glucocorticoids, namely: fludrocortisones, prednisolone, or prednisone. Cortisol is the primary adrenal glucocorticoid steroid hormone and is normally under feedback control by pituitary ACTH and the hypothalamus. Due to circadian variation, random single samples are of little value diagnostically. Reference values for 5 – 11 AM are published with results at Children's Hospitals and Clinics, and 5 – 11 PM reference values are appended as a comment. Cortisol is elevated in Cushing's Syndrome, hypoglycemia, stress and pregnancy.

Lab Testing Sections: Chemistry- Performed on the Minneapolis Campus

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: Performed daily

Special Instructions: N/A

Specimen

Specimen Type: Blood

Container: Preferred: Green top (Li Hep) tube
Alternate: SST (Red, marble or gold), Lavender top (EDTA) tube, NaHep tube

Draw Volume: 1.2 mL (Minimum: 0.6 mL) blood

Processed Volume: 0.4 mL (Minimum: 0.2 mL) serum
 Note: Minimum does not allow for repeat analysis.

Collection: Routine blood collection

Special Processing: Lab Staff: Centrifuge specimen, remove serum/plasma into aliquot tube. Store at refrigerated temperatures if testing is delayed. Ship at refrigerated temperatures.

Patient Preparation: None

Sample Rejection: Misabeled or unlabeled specimen; gross hemolysis

Interpretive

Reference Range:

AM Specimens Reference Ranges (5 – 11 AM):	
Age:	Range (mcg/dL)
0 – 24 months:	0.8 – 28.6 mcg/dL
2 – 10 years:	0.8 – 27.7 mcg/dL
11 – 18 years:	0.8 – 23.5
>18 years:	4.2 – 21.0
PM Specimen Reference Ranges (5 – 11 PM)	
0 – 24 months:	0.8 – 25.2
2 – 11 years:	0.8 – 20.2
11 – 18 years:	0.8 – 18.5
>18 years:	2.5 – 13.4
For results drawn outside of the AM/PM windows, use random cortisol ranges below.	
Random Cortisol Ranges (mcg/dL)	
2 – 14 days:	0.5 – 12.3
15 days - <1 year:	0.5 – 16.6

1 - <9 years:	1.7 – 10.8
9 - <14 years:	2.2 - 127
14 - <17 years:	2.8 – 16.4
17 – 19 years:	3.5 – 18.3
Adult:	2.9 – 19.4

Critical Values:

N/A

Limitations:

N/A

Methodology:

Chemiluminescent MicroParticle Immunoassay (CMIA)

References:

Abbott Architect Cortisol Reagent Package Insert (November 2015)
Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Abbot Alinity i Cortisol Reagent Instruction for Use (February 2018)
Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Abbott Alinity i Cortisol Calibrator Kit Package Insert (March 2018) Abbott
Laboratories Diagnostics Division, Abbott Park, IL, 60064, USA

Bio-Rad Lyphochek Immunoassay Plus Control Product Insert (January
2015) Abbott Laboratories Diagnostics Division, Abbott Park, IL, 60064,
USA

Tietz (1999) Textbook of Clinical Chemistry, 3rd edition, Philadelphia, WB
Saunders Co, pp 1543 - 1546

Jacobs & DeeMott (2001) Laboratory Test Handbook, 5th edition, Lexi-
Comp Inc, Hudson, Ohio, pp 154-155

CALIPER Reference Range Interval Studies (accessed 10/27/2020)

Updates:

2/9/2016: Update container types

5/15/2018: New test method, reference ranges

12/8/2020: Updated for method Abbott Alinity