

Overview

The majority of cases of chronic primary adrenal insufficiency (Addison disease) in the U.S. are caused by autoimmune adrenalitis. In developing countries, tuberculous adrenalitis is still the most common cause.¹ Primary adrenal insufficiency must be differentiated from secondary (pituitary) causes of adrenal insufficiency, where Adrenocorticotrophic Hormone (ACTH) secretion is inadequate, and tertiary (hypothalamic) causes in which corticotropin-releasing hormone (CRH) is deficient.²⁻⁸

Clinical Utility

- Low plasma **aldosterone** concentrations (<100 pmol/L) are associated with primary and secondary aldosterone deficiencies.⁹
- Morning **cortisol** levels are a good screening test to rule out adrenal insufficiency and levels above 20 mcg/dL are considered normal. Lower values are not diagnostic of disease, but require further evaluation.¹
- Random **ACTH** levels are useful in the evaluation of primary adrenal insufficiency as they are frequently elevated above 50 pg/mL in the majority of cases.²
- **Cortisol** levels following 1 microgram ACTH injection should exceed 20 mcg/dL and lower levels strongly suggest adrenal disease.³
- Steroid cell antibodies (**Adrenal Total Abs**) are detectable by indirect immuno-fluorescence in 70% of patients with autoimmune adrenalitis and are helpful in the differential diagnosis of tuberculous adrenalitis.¹⁰
- Adrenal insufficiency is commonly found in lung and breast cancer patients,¹¹ and as a complication of HIV infection.¹²

Methodology

- 3104 Aldosterone**, Radioimmunoassay (RIA)
- 3128 Cortisol**, Immunochemiluminometric Assay (ICMA)
- 3102 Adrenocorticotrophic Hormone**, CL
- 3124 11-Deoxycortisol**, Radioimmunoassay (RIA)
- 3214 Renin Activity, Plasma**, Radioimmunoassay (RIA)
- 1130 Adrenal Total Abs**, Indirect Fluorescent Antibody (IFA)

Ordering Information & Specimen Requirements

Test Code	Test Name	Specimen Requirements
3104	Aldosterone	2 mL Serum; Refrigerated or Frozen. Patient should be fasting 12 hours prior to phlebotomy.
3128	Cortisol	3 mL Serum; Refrigerated or Frozen. Record time of collection on specimen container and requisition.
3102	Adrenocorticotrophic Hormone	1 mL Plasma EDTA; FROZEN. Split into 2 plastic vials and freeze within 1 hour.
3124	11-Deoxycortisol	1 mL Serum; Ambient, Refrigerated or Frozen.
3214	Renin Activity, Plasma	2 mL Plasma EDTA; FROZEN. Split into 2 plastic vials before freezing. Patient should not be on medications. Patient should be on a normal sodium diet for 48 hours prior to collection. Patient's posture, upright or recumbent, should be noted.
1130	Adrenal Total Abs	1 mL Serum; Ambient, Refrigerated or Frozen.
3113	Aldosterone/Renin Ratio	4 mL Plasma EDTA; FROZEN. Split into 2 plastic vials before freezing. Patient should not be on medications. Patient should be on a normal sodium diet for 48 hours prior to collection. Patient's posture, upright or recumbent, should be noted.
<p><i>Specify "Send (name of test) to Specialty Laboratories"</i> <i>For immediate attention and sample pick-up, call 800-421-4449.</i></p>		

References

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