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**Lab Dept:** Chemistry

**Test Name:** RENIN

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***General Information***

**Lab Order Codes:** REN

**Synonyms:** Plasma Renin Activity

**CPT Codes:** 84244 - Renin

**Test Includes:** Plasma renin activity measured in ng/mL/hour.

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***Logistics***

**Test Indications:** Investigation of primary aldosteronism (e.g., adrenal adenoma/carcinoma and adrenal cortical hyperplasia) and secondary aldosteronism (renovascular disease, salt depletion, potassium loading, cardiac failure with ascites, pregnancy, Bartter's syndrome).

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Medical Laboratories (Test# 8060/PRA)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 2 - 5 days, set up Monday - Friday

**Special Instructions:** See [Patient Preparation](#)

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***Specimen***

**Specimen Type:** Whole blood

**Container:** Chilled syringe and transfer to a chilled Lavender top (EDTA) tube placed in an ice bath for transport to the lab

**Draw Volume:** 6 mL (Minimum: 4 mL) blood

**Processed Volume:** 2 mL (Minimum: 1.2 mL) plasma

**Collection:** Routine venipuncture using a chilled syringe. Transfer specimen into a chilled Lavender top tube. Mix chilled lavender top tube gently by inversion and place in an ice-water bath. Transport promptly to laboratory.

**Special Processing:** Lab Staff: **Do Not** leave blood at room temperature. Centrifuge for approximately 5 minutes in a refrigerated centrifuge. Remove plasma aliquot into a screw-capped round bottom plastic vial and freeze immediately. Ship frozen. Forward promptly.

**Patient Preparation:** Patient should be in a seated position for the specimen draw.

**Sample Rejection:** Clotted sample or any specimen other than EDTA plasma; gross hemolysis; mislabeled or unlabeled specimens

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***Interpretive***

**Reference Range:**

<b>Age:</b>	<b>Result in ng/mL/hour</b>
0 – 2 years:	4.6 (mean*)
3 – 5 years:	2.5 (mean*)

6 – 8 years:	1.4 (mean*)
9 – 11 years:	1.9 (mean*)
12 – 17 years:	1.8 (mean*)
*Mean data not standardized as to time of day or diet. Infants were supine, children sitting.	
<b>Na-depleted, upright (peripheral vein specimen)</b>	
18 – 39 years:	10.8 (mean) 2.9 – 24.0 ng/mL/hour (range)
≥40 years:	5.9 (mean) 2.9 – 10.8 ng/mL/hour (range)
<b>Na-replete, upright (peripheral vein specimen)</b>	
18 – 39 years:	1.9 (mean) ≤0.6 – 4.3 ng/mL/hour (range)
≥40 years:	1.0 (mean) ≤0.6 – 3.0 ng/mL/hour (range)

**Critical Values:**

N/A

**Limitations:**

Angiotensin converting enzyme (ACE) inhibitors have the potential to “falsely elevate” PRA. Therefore, in a patient treated with an ACE-inhibitor, the findings of a detectable PrA level or a low SA/PRA ratio do not exclude the diagnosis of primary aldosteronism. In addition, a strong predictor for primary aldosteronism is a PRA level undetectably low in a patient taking an ACE-inhibitor.

Not useful for determination of plasma renin concentration.

**Methodology:**

The renin in plasma is allowed to act on the plasma’s endogenous substrate, angiotensin, producing angiotensin I. This is measured by radioimmunoassay. Renin activity is expressed in ng of angiotensin produced per mL of plasma per hour of incubation.

**Contraindications:**

The plasma renin activity cannot be interpreted if the patient is being treated with spironolactone (Aldactone). Spironolactone (Aldactone) should be discontinued for 4 to 6 weeks prior to testing.

**References:**

[Mayo Medical Laboratory Web Page](#) January 2013

**Updates:**

2/26/2004: Test moved from Esoterix, Inc. to Mayo Medical Laboratories. Note: change in reference units from ng/dL/hr to ng/mL/hr.