

# Adrenaline (Epinephrine) – [24 Hours Urine] Analysis

## Objective

The objective of this test is to measure the total excretion of adrenaline (epinephrine) in urine over 24 hours. It is commonly used in the evaluation of adrenal medulla function and diagnosis of conditions such as pheochromocytoma and adrenal tumors.

## Materials and Methods

### Materials:

- 24-hour urine sample from patient
- Acid preservative (e.g., hydrochloric acid) for urine collection
- High-performance liquid chromatography (HPLC) or fluorometric assay kits
- Standard laboratory equipment (measuring cylinders, pipettes, vials)

### Methods:

1. Sample Collection: Collect all urine voided over 24 hours in a container with acid preservative to prevent degradation of catecholamines.
2. Sample Preparation: Mix the urine thoroughly and record total volume.
3. Analysis: Measure adrenaline levels using HPLC or fluorometric techniques.
4. Quality Control: Include internal standards and calibration curves for accurate quantification.
5. Interpretation: Compare results against reference ranges and evaluate in context of suspected adrenal pathology.

## Results

- Normal range: Approximately 1–20 µg/24 hours (varies by lab)
- Elevated levels: Suggest pheochromocytoma, adrenal medulla hyperplasia, or severe stress response
- Decreased levels: Rare but may indicate adrenal insufficiency

## Conclusion

The 24-hour urinary adrenaline test is a key diagnostic tool for evaluating adrenal medulla activity and diagnosing catecholamine-secreting tumors. Results should be interpreted alongside clinical findings and other biochemical tests such as noradrenaline and metanephrines.