

TEST CHANGE

Catecholamines Fractionated by LC-MS/MS, Urine Free

0080407, CATE UF

Specimen Requirements:

Patient Preparation: Drugs and medications may affect results and should be discontinued for at least 72 hours prior to specimen collection, if possible.

Collect: 24-hour or random urine. Refrigerate 24-hour specimen during collection.

Specimen Preparation: Thoroughly mix entire collection (24-hour or random) in one container. Transfer a 4 mL aliquot to an ARUP [standard transport tube](#) ~~Standard Transport Tube~~. (Min: 2.5 mL)
Catecholamines are not stable above pH 7. The pH of such specimens must be adjusted by the addition of 6M HCl acid or sulfamic acid prior to transport. A pH less than 2 can cause assay interference. Specimen preservation can be extended to 1 month refrigerated by performing one of the following:
Option 1: Transfer a 4 mL aliquot to an ARUP [standard transport tube](#) ~~Standard Transport Tube~~ and adjust pH to 2.0-4.0 with 6M HCl. (Min: 2.5 mL) Option 2: Transfer a 4 mL aliquot to an ARUP [standard transport tube](#) ~~Standard Transport Tube~~ containing 20 mg sulfamic acid (ARUP Supply #48098), available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at (800-)522-2787. (Min: 2.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens preserved with boric acid or acetic acid. Specimens with pH greater than 7.

Remarks: Record total volume and collection time interval on transport tube and test request form.

Stability: Unpreserved: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Undefined Preserved: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Performed: Sun-Sat

Reported: 1-~~5~~4 days

Note: Secreting neuroendocrine tumors are typically associated with catecholamine concentrations several times higher than the upper reference intervals. Large elevations can be seen in life-threatening illnesses and drug interferences. Common reasons for slight and moderate elevations include intense physical activity, emotional and physical stress, drug interferences, and improper specimen collection. Medications which may physiologically interfere with catecholamines and metabolites include amphetamines and amphetamine-like compounds, appetite suppressants, bromocriptine, buspirone, caffeine, carbidopa-levodopa (Sinemet), clonidine, dexamethasone, diuretics (in doses sufficient to deplete sodium), ethanol, isoproterenol, methyldopa (Aldomet), MAO inhibitors, nicotine, nose drops, propafenone (Rythmol), reserpine, theophylline, tricyclic antidepressants, and vasodilators. The effects of some drugs on catecholamine results may not be predictable. References: 1) Optimal collection and storage conditions for catecholamine measurements in human plasma and urine. (Clinical Chemistry. 1993; 39:2503-8.); 2) Effect of urine pH, storage time, and temperature on stability of catecholamines, cortisol, and creatinine. (Clinical ~~Chemistry~~1998;44: 1759-62.)

CPT Codes: 82384

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Smaller increases in catecholamine concentrations (less than two times the upper limit) usually are the result of physiological stimuli, drugs, or improper specimen collection. Significant elevation of one or more catecholamines (three or more times the upper reference limit) is associated with an increased probability of a neuroendocrine tumor.

Per 24h calculations are provided to aid interpretation for collections with a duration of 24 hours and an average daily urine volume. For specimens with notable deviations in collection time or volume, ratios of analytes to a corresponding urine creatinine concentration may assist in result interpretation.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.~~

Reference Interval:

Test Number	Components	Reference Interval		
	Creatinine, Urine - per 24h			
		Age	Male (mg/d)	Female (mg/d)
		3-8 years	140-700	140-700
		9-12 years	300-1300	300-1300
		13-17 years	500-2300	400-1600
		18-50 years	1000-2500	700-1600
		51-80 years	800-2100	500-1400
		81 years and older	600-2000	400-1300
	Dopamine, Urine - per 24h			
		Age	ug/d	
		0-3 years	Not established	
		4-10 years	80-440	
		11-17 years	100-496	
		18 years and older	71-485	
	Norepinephrine, Urine - per 24h			
		Age	ug/d	
		0-3 years	Not established	
		4-10 years	7-65	
		11-17 years	12-96	
		18 years and older	14-120	
	Epinephrine, Urine - per 24h			
		Age	ug/d	
		0-3 years	Not established	
		4-10 years	1-14	
		11-17 years	1-18	
		18 years and older	1-14	
	Norepinephrine, Urine - ratio to CRT			
		Age	ug/g CRT	
		0-11 months	25-310	
		1-3 years	25-290	
		4-10 years	27-110	
		11-17 years	4-105	
		18 years and older	0-45	
	Dopamine, Urine - ratio to CRT			

		Age	ug/g CRT	
		0-11 months	240-1290	
		1-3 years	80-1220	
		4-10 years	220-720	
		11-17 years	120-450	
		18 years and older	0-250	
	Epinephrine, Urine - ratio to CRT			
		Age	ug/g CRT	
		0-11 months	0-380	
		1-3 years	0-82	
		4-10 years	5-93	
		11-17 years	3-58	
		18 years and older	0-20	

