MAYO CLINIC LABORATORIES

Test Definition: URAU

Urea, 24 Hour, Urine

Overview

Useful For
Assessment of protein intake and/or nitrogen balance

Special Instructions
- Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens

Method Name
Photometric

NY State Available
Yes

Specimen

Specimen Type
Urine

Necessary Information
1. 24-Hour volume (in milliliters) is required.
2. For any timed collection the volume and length of collection is required.

Specimen Required
Supplies: Sarstedt 5 mL Aliquot Tube (T914)
Container/Tube: Plastic, urine tube
Specimen Volume: 4 mL
Collection Instructions:
1. Collect urine for 24 hours.
2. Mix well before taking aliquot.
Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens for multiple collections.

Forms
If not ordering electronically, complete, print, and send a Renal Diagnostics Test Request (T830) with the specimen.

Urine Preservative Collection Options
Note: The addition of preservative or application of temperature controls **must occur within 4 hours of completion** of the collection.

Ambient (no additive)	No
Refrigerate (no additi	OK

Frozen (no additive)	OK
50% Acetic Acid	OK
Boric Acid	Preferred
Diazolidinyl Urea	OK
6M Hydrochloric Acid	OK
6M Nitric Acid	No
Sodium Carbonate	OK
Toluene	No

Specimen Minimum Volume

1 mL

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	14 days	
	Ambient	7 days	
	Frozen	30 days	

Clinical & Interpretive

Clinical Information

Urea is a low molecular weight substance (60 Da) that is freely filtered by glomeruli, and the majority is excreted into the urine, although variable amounts are reabsorbed along the nephron. It is the major end product of protein metabolism in humans and other mammals. Approximately 50% of urinary solute excretion and 90% to 95% of total nitrogen excretion is composed of urea under normal conditions. Factors that tend to increase urea excretion include increases in glomerular filtration rate, increased dietary protein intake, protein catabolic conditions, and water diuretic states. Factors that reduce urea excretion include low protein intake and conditions that result in low urine output (eg, dehydration).

Reference Values

> or =18 years: 7-42 g/24 hours

Reference values have not been established for patients who are less than 18 years of age.

Interpretation

Because multiple factors (glomerular filtration rate, dietary protein intake, protein catabolic rate, hydration state, etc.) can independently affect the urinary excretion of urea, all of these factors must be taken into account when interpreting the results.

Cautions

No significant cautionary statements

Clinical Reference

1. Lamb EJ, Jones GRD: Kidney function tests In: Rifai N, Horvath AR, Wittwer CT, eds. Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:498-500

2. Bankir L, Trinh-Trang- Tan MM: Urea and the kidney. In: Brenner BM eds. The Kidney. 6th ed. WB Saunders Company; 2000

Performance

Method Description

Kinetic test with urease and glutamate dehydrogenase. Urea is hydrolyzed by urease to form ammonium and carbonate. In the second reaction 2-oxoglutarate reacts with ammonium in the presence of glutamate dehydrogenase and the coenzyme reduced nicotinamide adenine dinucleotide (NADH) to produce L-glutamate. In this reaction two moles of NADH are oxidized to NAD[+] for each mole of urea hydrolyzed. The rate of decrease in NADH concentrations is directly proportional to the urea concentration in the specimen and is measured photometrically.(Package insert: Urea/BUN reagent. Roche Diagnostics; 07/2024)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

Same day/1 day

Specimen Retention Time

7 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

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This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

84540

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
URAU	Urea, 24 HR, U	48999-7

Result ID	Test Result Name	Result LOINC® Value
UREA	Urea, 24 HR, U	48999-7
TM33	Collection Duration	13362-9
VL31	Urine Volume	3167-4
URECN	Urea Concentration	63481-6