

Overview**Useful For**

As a partial assessment of the kidney's ability to concentrate urine

Method Name

Refractometer

NY State Available

Yes

Specimen**Specimen Type**

Urine

Specimen Required

Container/Tube: 16x100 mm polypropylene tube

Specimen Volume: 5 mL

Collection Instructions:

1. Collect a random urine specimen.
2. Keep specimen frozen.

Forms

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

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	Frozen (preferred)	7 days	
	Refrigerated	7 days	

Clinical and Interpretive**Clinical Information**

Specific gravity (SG), the ratio of the mass of a solution compared to the mass of an equal volume of water, is an estimate of the concentration of substances dissolved in the solution.

Urine SG can be used to assess the kidney's ability to concentrate or dilute urine. However, because protein, glucose, and contrast dye have molecular masses that are relatively large compared to other major components of urine (eg, sodium, chloride, potassium), they disproportionately affect SG. In these cases, urine osmolality is a better measure of urine concentration.

Reference Values

1.002-1.030

Interpretation

Low specific gravity (SG) (1.001-1.003) may indicate the presence of diabetes insipidus, a disease caused by impaired functioning of antidiuretic hormone (ADH). Low SG also may occur in patients with glomerulonephritis, pyelonephritis, and other renal abnormalities. In these cases the kidney has lost its ability to concentrate due to tubular damage.

High SG may occur in patients with adrenal insufficiency, hepatic disease, congestive heart failure, or in patients experiencing excessive water loss due to sweating, fever, vomiting, or diarrhea.

Cautions

Urine with contrast dye, glucose, or excessive protein should not be evaluated with this test.

Urine osmolality is a better measure of urine concentration.

Clinical Reference

1. Schumann GB, Schweitzer SC: Examination of urine. In Clinical Chemistry, Theory, Analysis and Correlation. Edited by LA Kaplan, AJ Pesce. Third edition. St. Louis, Mosby-Year Book Inc. 1996 pp 1118-1119

2. Modern Urine Chemistry (Manual). Edited by HM Free. Bayer Corp, Eighth printing. 1996 pp 36-37

Performance

Method Description

Refractometer

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Sunday; Continuously

Analytic Time

Same day/1 day

Maximum Laboratory Time

Same day/1 day

Specimen Retention Time

1 day

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. For assistance, contact [Customer Service](#).

CPT Code Information

81003

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
SGU	Specific Gravity	5810-7

Result ID	Test Result Name	Result LOINC Value
SGU	Specific Gravity	5810-7