
Lab Dept: Urine/Stool

Test Name: OXALATE, RANDOM URINE

General Information

Lab Order Codes: OXUR

Synonyms: Oxalate, Urine

CPT Codes: 83945 - Oxalate

Test Includes: Urine oxalate concentration reported in mmol/L, Urine creatinine reported in mg/dL and Oxalate/Creatinine ratio. See [Special Instructions](#)

Logistics

Test Indications: Monitoring therapy for kidney stones. Identifying increased urinary oxalate as a risk factor for stone formation. Diagnosis of primary or secondary hyperoxaluria.

Lab Testing Sections: Urine/Stool - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: ROXU)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 5 days, test set up Monday - Saturday

Special Instructions: Submit an entire random urine collection. No preservative. Refrigerate specimen during and after collection. No reference ranges are available.

A timed 24-hour urine collection is the preferred specimen for measuring and interpreting this urinary analyte. Random collections normalized to urinary creatinine may be of some clinical use in patients who cannot collect a 24-hour specimen, typically small children. Therefore, this random test is offered for children <16 years old.

Specimen

Specimen Type: Urine, random collection.

Container: Plastic leakproof container (No preservative)

Draw Volume:	Submit an entire random urine collection
Processed Volume:	7 mL (Minimum: 6 mL) urine from a well mixed random specimen
Collection:	Routine urine collection
Special Processing:	<p>Lab Staff: Mix random specimen well, remove 7 mL from random urine collection. No preservative. Send aliquoted specimen in a plastic, 10 mL urine tube or a clean, plastic aliquot container with no metal cap or glued insert.</p> <p>Send specimen refrigerated. Forward promptly.</p>
Patient Preparation:	Avoid taking large doses (≥ 2.0 g orally/24 hours) of vitamin C during specimen collection.
Sample Rejection:	Specimen collected or sent in a container with a metal cap is not acceptable, specimens other than urine, mislabeled or unlabeled specimens

Interpretive

Reference Range: No reference values are available for random specimens

Interpretation: An elevated urine oxalate (>0.46 mmol/day) may suggest disease states such as secondary hyperoxaluria (fat malabsorption), primary hyperoxaluria (alanine glyoxalate transferase enzyme deficiency, glyceric dehydrogenase deficiency), idiopathic hyperoxaluria, or excess dietary oxalate or vitamin C intake.

In stone-forming patients high urinary oxalate values, sometimes even in the upper limit of the normal range, are treated to reduce the risk of stone formation. The urinary oxalate creatinine ratio varies widely in young children from <0.35 mmol/mL at birth to <0.15 mmol/mL at 1 year to <0.10 mmol/mL at 10 years and <0.05 mmol/mL at 20 years of age (see table below).

Oxalate/Creatinine (mg/mg)

Age (yr)	95th Percentile
0-0.5	<0.175
0.5-1	<0.139
1-2	<0.103
2-3	<0.08
3-5	<0.064

5-7	<0.056
7-17	<0.048

Matos V, Van Melle G, Werner D et al: Urinary oxalate and urate to creatinine ratios in a healthy pediatric population. Am J Kidney Dis 1999;34:e1

Critical Values:

N/A

Limitations:

Ingestion of ascorbic acid (>2 g/day) may falsely elevate the measured urinary oxalate excretion. Do not collect in metal-capped containers.

Methodology:

Enzymatic Using Oxalate Oxidase

References:

[Mayo Medical Laboratories Web Page](#) August 2015