



# Laboratory Service Manual

**Lab Dept:** Urine/Stool

**Test Name:** ARSENIC, TIMED URINE

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## **General Information**

**Lab Order Codes:** UAR

**Synonyms:** Arsenic, urine

**CPT Codes:** 82175 - Arsenic

**Test Includes:** Urine Arsenic concentration reported in mcg/specimen.

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## **Logistics**

**Test Indications:** Useful for detection of arsenic exposure.

**Lab Testing Sections:** Urine/Stool - Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test# 8644)

### **Phone Numbers:**

Minneapolis: 612-813-6280

Saint Paul: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 1 – 3 days, performed Monday - Saturday

**Special Instructions:** Submit an entire 24-hour urine collection. No preservative. Refrigerate specimen during and after collection.

**Note:** Starting and ending times of collection are required for a timed urine collection and must be documented electronically or on the proper request form.

See [Patient Preparation, Collection](#)

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## **Specimen**

**Specimen Type:** Urine, timed collection



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- Container:** Plastic leakproof container (No preservative). Urine GUARD® collection container is preferred for a timed urine sample. A plastic urine container(s) with no metal caps or glued inserts.
- Draw Volume:** Submit an entire 24-hour urine collection
- Processed Volume:** 10 mL (Minimum: 1 mL) urine aliquot of well-mixed 24 hour collection
- Collection:** For timed urine collections, empty the bladder, discard the voided sample, and note the start time. Collect all urine voided for the specified time period. At the end of the period, note the finishing time, add the last voided sample to the container by emptying the bladder. Bring the refrigerated container to the lab. Make sure all specimens submitted to the laboratory are properly labeled with the patient's name, medical record number and date of birth.
- Special Processing:** Lab Staff: Remove 10 mL (Minimum: 1 mL) aliquot from a well mixed 24 hour specimen. Measure total volume. Send specimen refrigerated in a plastic, 13 mL urine tube or a clean, plastic aliquot container with no metal cap or glued insert. Forward promptly.
- 24 hour volume is required on request form for processing.
- Patient Preparation:** Patient should not eat seafood for a 48 hour period prior to start of collection. [See Limitations](#)
- Sample Rejection:** Specimens other than acidified urine; mislabeled or unlabeled specimens
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## *Interpretive*

**Reference Range:**

All ages:	0 – 35 mcg/specimen
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The reference value is for a 24 hour collection.

Interpretation: Normally, humans consume 5 to 25 mcg of arsenic each day as part of their normal diet; therefore, normal urine arsenic output is <25 mcg/specimen. After a seafood meal (seafood contains a nontoxic, organic form of arsenic), the urine output of arsenic may increase to 300 mcg/specimen for 1 day, after which it will decline to <25 mcg/specimen.

Exposure to inorganic arsenic, the toxic form of arsenic, causes prolonged excretion of arsenic in the urine for many days.

Urine excretion rates >1,000 mcg/specimen indicate significant exposure. The highest level observed at Mayo Clinic was 450,000 mcg/specimen in a patient with severe symptoms of gastrointestinal distress, shallow breathing with classic "garlic breath," intermittent seizure activity, cardiac arrhythmias, and later onset of peripheral neuropathy.

**Critical Values:**

N/A

**Limitations:**

High concentrations of gadolinium and iodide are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen cannot be collected for 96 hours.

Consumption of seafood before collection of a urine specimen for arsenic testing is likely to result in a report of an elevated concentration of arsenic found in the urine, which can be clinically misleading.

**Methodology:**

Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)

**References:**

[Mayo Medical Laboratories](#) January 2011

**Updates:**

11/5/2009: Units updated from ug to mcg.  
1/5/2011: Reference range update