

## TEST CHANGE

Chromium, Urine

0025068, CR-U

### Specimen Requirements:

Patient Preparation:	Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collections from patients with impaired kidney function should be avoided for a minimum of 14 days post contrast media exposure.
Collect:	24-hour or random urine collection. Specimen must be collected in a plastic container. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection.
Specimen Preparation:	Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Transport Temperature:	Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions:	Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid <u>preserved</u> urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element-free transport tube (with the exception of the original device).
Remarks:	Record total volume and collection time interval on transport tube and on test request form.
Stability:	Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Quantitative Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)
Note:	
CPT Codes:	82495
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	<p><u>Urine chromium concentrations</u> <u>Chromium urine levels</u> can be used to monitor short term exposure. The form of chromium greatly influences distribution. Trivalent chromium resides in the plasma and is usually not of clinical importance. Hexavalent chromium is considered highly</p>

toxic. Symptoms associated with chromium toxicity vary based upon route of exposure and dose and may include dermatitis, impairment of pulmonary function, gastroenteritis, hepatic necrosis, bleeding, and acute tubular necrosis.

The ACGIH Biological Exposure Index for total daily exposure of hexavalent chromium in is an increase of 10 ug/gCRT between pre-shift and post-shift urine is and collections. The ACGIH Biological Exposure Index for long- and short-term hexavalent chromium is an end-of-shift concentration of 0.730 ug/L measured gCRT at the end of the work week.

Elevated results may be due to skin or collection-related contamination, including the use of collection containers that are not certified to be trace element-free. If an elevated result is suspected to be due to contamination, confirmation with a second specimen collected in a certified trace element-free container is recommended.

**Methodology: Inductively Coupled Plasma - Mass Spectrometry (ICP-MS)**

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																							
	Chromium, Urine - per 24h	<u>Less than or equal to 0.0-2.0 microg/d</u>																							
	Chromium, Urine - per volume	<u>Less than or equal to 0.0-2.0 microg/L</u>																							
	Chromium, Urine - ratio to CRT	<u>Less than or equal to 0.0-10.0 microg/g CRT</u>																							
	Creatinine, Urine - per 24h	<table border="1"> <thead> <tr> <th>Age</th><th>Male (mg/d)</th><th>Female (mg/d)</th></tr> </thead> <tbody> <tr> <td>3-8 years</td><td>140-700</td><td>140-700</td></tr> <tr> <td>9-12 years</td><td>300-1300</td><td>300-1300</td></tr> <tr> <td>13-17 years</td><td>500-2300</td><td>400-1600</td></tr> <tr> <td>18-50 years</td><td>1000-2500</td><td>700-1600</td></tr> <tr> <td>51-80 years</td><td>800-2100</td><td>500-1400</td></tr> <tr> <td>81 years and older</td><td>600-2000</td><td>400-1300</td></tr> </tbody> </table>			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
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