



3959504

## ENVIRONMENTAL ANALYSIS

URINE, SPOT	Result	Range	Units	
<b>Creatinine, Spot Urine</b>	<b>8.9</b>	5.0 - 15.0	mmol/L	
<b>Bromine, Urine Spot</b>	<b>1968.35</b>	700.00 - 4800.	ug/gCR	
<b>Selenium, Urine Spot</b>	<b>24.78</b>	12.00 - 90.00	ug/gCR	
<b>Lithium, Urine Spot</b>	<b>6.66</b>	< 175.00	ug/gCR	
<b>Arsenic, Urine Spot (As)</b>	<b>15.60 *H</b>	< 15.00	ug/gCR	
<b>Cadmium, Urine Spot (Cd)</b>	<b>0.51</b>	< 0.80	ug/gCR	
<b>Mercury, Urine Spot (Hg)</b>	<b>0.00</b>	< 1.00	ug/gCR	
<b>Toxic Metals Comments</b>				

### ARSENIC

Associated with increased risk of: Vascular disease, Atherosclerosis, Cancers of skin, bladder and lung.

### Sources:

Environmental sources of arsenic exposure include food, water, soil, and air, esp. around arsenic-containing mineral ores. In industry, arsenic is a by-product of the smelting process for many metal ores such as lead, gold, zinc, cobalt, and nickel. Arsenic is used for purifying industrial gases (removal of sulfur), burning fossil fuels, electronics manufacturing (microwave devices, lasers, light-emitting diodes, photoelectric cells, and semiconductor devices), hardening metal alloys, preserving animal hides, bronze plating, and clarifying glass and ceramics.

Other potential sources of arsenic exposure are:

- Wood preservatives, insecticides, herbicides (weed killers and defoliants), fungicides, cotton desiccants, cattle and sheep dips, paints and pigments, antifouling paints, leaded gasoline, and fire salts (multicolored flame).
- Wine (grapes sprayed with arsenic-containing pesticides), Seafood (especially certain cold water and bottom-feeding finfish) and Seaweed.
- Smokers may also inhale small amounts of arsenic as a result of pesticide residue on tobacco leaves.
- Medicinals: Fowler's solution (potassium arsenite), antiparasitic drugs (carbasone), Donovan's solution, folk remedies ("Asiatic pill," kushtay, yellow root), kelp-containing health foods, some naturopathic remedies.

### Treatment:

Address underlying causes and consider EDTA chelation IV.

### Laboratory Information:

The given reference range applies only if 48hrs prior to the urine collection no fish, or algae products were consumed. Mineral waters high in arsenic may also raise urinary excretion levels. Consumption of any of these sources raises urine levels considerably, at least 2-3 times above the given range. Smoking may also raise urinary excretion levels or arsenic.

(\*) Result outside normal reference range

(H) Result is above upper limit of reference range



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## INTEGRATIVE MEDICINE

URINE, SPOT	Result	Range	Units
<b>URINE IODINE</b>	<b>76</b>		ug/L
<b>Urine Iodine Corrected</b>	<b>75.9</b>		ug/gCR
<b>Urine Iodine Comment</b>			

### RANDOM IODINE COMMENT:

Random Iodine levels are expressed as ug Iodine/g Creatinine (to correct for urine conc), with the following reference ranges;

> 100 ug Iodine/g Creatinine	Normal Iodine Level
51 - 100 ug Iodine/g Creatinine	Mild Deficiency
< 50 ug Iodine/g Creatinine	Moderate to severe deficiency

<b>Creatinine, Urine Spot.</b>	<b>8.9</b>	<b>5.0 - 15.0</b>	mmol/L	
URINE, 24 HOUR				
<b>24hr Urine Volume</b>	<b>1100</b>	<b>693 - 3741</b>	mL	
<b>Ur Iodine, Loading</b>	<b>11131</b>		ug/L	
<b>Ur Iodine Loading, Conc.</b>	<b>12.24</b>		mg/24hr	
<b>Ur Iodine Loading, Excreted</b>	<b>24.5 *L</b>	<b>&gt; 90.0</b>	% Excretion	
<b>Urine Iodine Loading comment</b>				

### IODINE LOADING TEST COMMENT:

Iodine/iodide is required in sufficient levels for adequate thyroid hormone production. Thyroid hormones are important for growth regulation, metabolic rate, energy levels and temperature control. Iodine deficiency may be associated with an enlarged thyroid gland (goiter), fatigue, reduced cognition, constipation, hair loss, low libido, slow pulse, brittle hair/nails, fibrocystic breasts and increased cancer risk. Many cases of hypothyroidism (low thyroid hormone levels) are due to low iodine in the diet. Iodine levels are influenced by diet and exposure to environmental factors, including toxins that compete for iodine metabolism, e.g. chlorine and bromide used in pools, spas, drinking water, pastries and breads, carbonated beverages, pesticides and medications.

As there is no optimal range for a random iodine test, the spot urine test is used to determine the patients pre-load test status.

The Loading Test then compares how much of the iodine/iodide dose is absorbed versus how much is passed out in the urine by the kidneys. The total amount passed in the urine is inversely related to the amount your body needs and determines if you have sufficient iodine or need supplementation.

For the Urine Iodine Loading Test, 50 mg of an iodine/iodide mixture is given as a loading dose and the amount of iodine excreted in the urine over the next 24 hours is measured.

### IODINE LOADING TEST REFERENCE RANGE

In an iodine sufficient state, approx. 90% of a mixture of a 50mg dose of iodine/iodide would be excreted (i.e. 45mg) and 10% of the iodine would be retained (i.e. 5mg).

Levels below 90% excretion would indicate an iodine deficient state.

Tests ordered:

1509us,24UVol,EnvPEI,GOG140,GOG246,IMPEI,UIodCom,uIodEx,UIodExL,UIodLC,UIodLCom,UR-IODINE,UR-IodineL,usCr