



urine halides

Iodine is an essential element required for normal function of the thyroid gland, immune system, and the integrity of thyroid and breast tissue. Sub-optimal total body iodine status is associated with insufficient intake of the essential element and excessive intake of the highly antagonistic halides; bromide and fluoride. Iodine sufficiency and the retention of antagonistic bromide and fluoride can be readily assessed by analyses of iodine, bromine and fluoride in urine after administration of a loading dose of iodide/iodine.

Specific tissues in the body require adequate iodine and the reduced form of the element, iodide for normal metabolism and optimal health. Adequate iodide uptake and organification of iodine by the thyroid gland is required for the production, storage and release of thyroid hormones. Triiodothyronine (T3) regulates metabolism in several tissues by affecting energy production and neuronal and sexual development. Iodine insufficiency is associated with "sub-clinical" thyroid deficiency, weight gain, loss of energy, goiter and impaired mental function. Iodine is also concentrated in breast tissue where it elicits anti-proliferative effects and protection against fibrocystic breast disease and cancer. Iodine and organic iodine compounds are also concentrated and secreted by the gastric mucosa, salivary glands and the cervix.

Iodine status and metabolism is affected not only by iodine intake, which has decreased significantly, but also by intake and retention

of goitrogenic halides (bromide and fluoride). Excessive intake of the antagonistic halides can accumulate in tissues, displace iodine and compromise the production of thyroid hormones and the integrity of the thyroid and mammary glands. Antagonistic bromide is abundant in commercially produced baked goods, soft drinks, pesticides, brominated chemicals and some medications. Primary sources of fluoride include fluoridated water, beverages, toothpaste, mouthwashes and some medications.

The Urine Halides test provides comprehensive assessment of iodine sufficiency and retention of antagonistic halides in a single test. The test requires a spot urine specimen (first morning void preferred) for determination of baseline halide levels. An oral loading dose of iodine/iodide is ingested and all urine is collected for the subsequent 24 hours. Iodine and displaced bromide and fluoride are measured in the urine and the results for each element are reported as ug/gm creatinine and ug/24 hours. Iodine status is assessed by evaluation of

the percentage of the ingested dose that is excreted. Low iodine excretion is suggestive of greater bodily retention and need.

The specific halides are analyzed in urine using the most accurate methodology available for each element. Iodine and bromine are measured by ICP-MS under conditions that convert all iodide and bromide to the respective halogens (oxidized). Urinary fluoride is most accurately measured using an ion specific electrode.

URINE HALIDES

- **Comprehensive assessment of iodine sufficiency and antagonistic halides in a single test**
- **Requires a first morning void and a 24-hour urine collection**
- **State-of-the art analysis for each element in urine**
- **Patient-friendly report**



LAB#: U000000-0000-0
 PATIENT: Sample Patient
 ID: PATIENT-S-00091
 SEX: Female
 AGE: 64

CLIENT#: 12345
 DOCTOR:
 Doctor's Data, Inc.
 3755 Illinois Ave.
 St. Charles, IL 60174

Urine Halides; Pre & Post Loading

Iodine	µg/mg cr	mg/24 hr	Reference Range	
Sample 1 PRE	17		0.1- 0.45 µg/mg cr	Iodine levels include iodine and iodide oxidized to iodine. Excretion percentage is calculated by dividing the patient's mg/24hour iodine result by the iodine/iodide dosage (in mg) recorded on the requisition form, then multiplying by 100.
Sample 2 POST	43	25	0.1- 0.45 mg/24 hr	
% Excretion/24 hr		50%		

Bromine	µg/mg cr	mg/24 hr	Reference Range	
Sample 1 PRE	1.7		< 7 µg/mg cr	Bromine levels represent total bromine plus bromide, as measured by ICP-MS. Bromide is antagonistic to iodide, and is abundant in commercially produced baked goods, soft drinks, pesticides, brominated chemicals and some medications.
Sample 2 POST	2.8	8	< 7 mg/24 hr	

Fluoride	µg/mL	mg/24 hr	Reference Range	
Sample 1 PRE	1.3		< 1.1 µg/mL	Fluoride in urine is measured using an ion specific electrode. Fluoride is neurotoxic, compromises integrity of bone, and interferes with iodide metabolism. Primary sources of fluoride include fluoridated water, beverages, toothpaste/mouth washes, dental treatments and some medications.
Sample 2 POST	1.5	0.86	< 1.3 mg/24 hr	

Creatinine	Result	Reference Range	
Sample 1 PRE	38	35- 225 mg/dL	Urine Creatinine is used to account for urinary dilution effects in less than 24-hour collections and to assess the collection completeness in 24-hour collections. For estimation of glomerular filtration rate (GFR), a Creatinine Clearance test is recommended.
Sample 2 POST	570	600- 1900 mg/24hr	

Comments:
 #1 Date Collected: 12/28/2008 #2 Date Collected: 12/29/2008 Date Received: 12/30/2008
 #1 Collection Period: Random #2 Collection Period: 24 hr coll Date Completed: 12/31/2008
 #2 Volume: 3000 ml <dl: less than detection limit
 #2 Loading Dosage: 50 MG Method: I, Br by ICP-MS/ F by ISE
 Creatinine by Jaffe method

Reference ranges are representative of a healthy population under non-challenge or non-loading conditions. V04.07