URINE IODINE



This test was performed using ICP-MS, to estimate the nutritional status of the essential element iodide/iodine. Specific tissues in the body utilize iodine and iodide. Iodide, the reduced form of iodine, is highly concentrated in the thyroid gland where it is incorporated into thyroid hormones. Adequate iodide status is essential for the production of normal levels of thyroid hormones and the integrity of the thyroid and mammary glands. Thyroid hormones regulate growth and metabolic rate, body heat and energy production, and neuronal and sexual development. Iodine is concentrated in the breasts where it is associated with protection against fibrocystic breast disease and cancer. Iodine deficiency has been associated with impaired mental function, loss of energy due to hypothyroidism, and increased incidence of thyroid and breast cancer.

lodide/iodine status is greatly influenced by dietary intake, but also by exposure to goitrogens that inhibit the absorption and binding of iodine. Goitrogenic substances include chlorine (tap water, pools/hot tubs, cleaning products), fluoride (water, toothpaste, mouth wash, some medications) and bromide (pools/hot tubs, baked goods, soft drinks, pesticides, medications).

The urinary level of iodine has traditionally been utilized to assess dietary intake. A twenty-four hour collection is considered to be ideal, but compliance is often problematic. Alternatively, a random urine collection, preferably the first morning void, provides an indication of dietary intake when expressed per gram creatinine. The iodine excretion value presented on this report includes both iodine, and iodide oxidized to iodine. Based upon the urinary excretion and the entire clinical presentation, the attending practitioner will advise as to the significance of the reported results. If an oral dose of iodine/iodide was given prior to the urine collection, the results will be very high compared to the normal reference value. Doctor's Data, Inc. does not recommend random or less than 24-hour urine collections if one has taken a loading dose of iodine/iodide.

URINE CREATININE						
	RESULT mg/dL	REFERENCE INTERVAL	2SD LOW 1SD LOW	MEAN	1SD HIGH	2SD HIGH
Creatinine	62.2	30- 225				
SPECIMEN DATA						
Comments:						
Date Collected: Date Received: Date Reported:	02/20/2023 Method: ICP-I 02/23/2023 <dl: les<="" td=""> 03/01/2023 Loading Test</dl:>		MS/Creatinine: Jaffe method as than detection limit : NO	Collection Period Volume: Loading Dosage:	: Random	
Elements are reported as $\mu g/mg$ creatinine to account for urine dilution variations. Reference ranges are representative						
V02.06						

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IODINE LOW

This individual's urinary level of the essential element iodine is low. The urinary level of iodine is the traditional way to assess the dietary intake of the element. Iodine and iodide, the reduced form, are utilized preferentially by specific tissues. The iodine excretion value presented on this report includes both iodine and iodide oxidized to iodine.

lodine is an element that is essential for health and the main function of lodine is in the synthesis of thyroid hormone. Dietary iodine is taken up readily through the gut. In the thyroid gland, 4 atoms of iodine are incorporated into each molecule of thyroxine (T4) and 3 atoms into each molecule of triiodothyronine (T3). Thyroid hormones have a wide range of impact and are essential for neuronal development, sexual development, growth and for regulating metabolic rate, body heat, and energy. Deficiencies of the element may result in impaired thyroid hormone synthesis and/or thyroid enlargement (goiter). Current research shows evidence for iodine's antioxidant properties as a protector of the mammary gland. An iodine deficiency can alter the structure and function of breast tissue and may be associated with an increased incidence of breast and thyroid cancer. Many who suffer from sub-clinical iodine deficiency have impaired mental function and/or loss of energy due to hypothyroidism.

lodine deficiency and the treatment of goiter with iodide/iodine has been recognized since the early 19th century. At the beginning of the 20th century, there was a high prevalence of goiter in the states bordering the Great Lakes. Michigan and Ohio introduced a policy of adding potassium iodide to table salt. The rest of the United States quickly followed the policy. Despite the iodinization of salt, iodine deficiency continues to exist as a worldwide problem with an estimated twenty-nine percent of the world's population living in iodine deficient areas. Several possible reasons for the continued deficiency include the adoption of low sodium (salt) diets, and chronic exposure to goitrogens that inhibit the uptake and binding of iodine. Goitrogenic substances include: chlorine (pools, cleaning products, water supply), fluoride (water, toothpaste, dental treatments, mouthwash, medications), and bromide (soft drinks, baked goods, pesticides, pools/hot tubs, produce fumigant, medications). Another reason for continued iodine deficiency is the depletion of soil minerals due to erosion and poor farming techniques.

According to the World Health Organization (WHO), median urinary iodine values should be greater than 10 mcg/dL in "iodine sufficient" populations; this level appears to simply represent a level above which goiter is not present. Median values from NHANES I (1971-1974), NHANES III (1989-1991), NHANES 2000, and NHANES 2001-2002, suggest adequate iodine intake at values of 32 mcg/dL, 14.5 mcg/dL, 16.1 mcg/dl, and 16.8 mcg/dL respectively. The median value decreased about 50% and stabilized between 1971-1974 and 2001-2002. The sharp drop was concomitant with the significant reduction in consumption of iodized table salt.

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