LAB#: xxxxx
PATIENT: SAMPE REPORT NUT01
ID: xxxx SEX: Female
DOB: 10/09/1981

CLIENT#: xxxx
DOCTOR:
Regenerus Laboratories Ltd
Aero 14 Redhill Aerodrome Kings Mill Lane
Redhill, Surrey, RH1 5JY UNITED KINGDOM

Urine Halides

	µg/mg cr	Reference Range	
Iodine	0.066	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.

	µg/mg cr	Reference Range	
Bromine	0.78	< 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.

	µg/mL	Reference Range	
Fluoride	0.53	< 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.

	Result	Reference Range	
Creatinine	88.5	30- 225 mg/dL	**Urine Creatinine** is used to account for urinary dilution effects in less than 24-hour collections. For estimation of glomerular filtration rate (GFR), a Creatinine Clearance test is recommended.

Comments:
Date Collected: **04/03/2023** Collection Period: **Random**
Date Received: **04/05/2023** Volume:
Date Reported: **04/11/2023** Loading Test:

<dl: less than detection
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

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.

Iodine is an element that is essential for health and the main function of Iodine 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.

Iodine 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.

BIBLIOGRAPHY FOR IODIDE

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