OPEN ACCESS Freely available online

Journal of Thyroid Disorders & Therapy

Perspective

Iodine Insufficiency is a Common Cause of Thyroid Issues

Carolin Geon*

Department of Biomedical Sciences, University of São Paulo, São Paulo, Brazil

ABOUT THE STUDY

Iodine deficiency is a prominent cause of thyroid problems around the world. Nepal is located in the Himalayan goitre belt, an endemic area of iodine shortage, with a high frequency of iodine deficiency illnesses such as goitre, cretinism, and hypothyroidism. Nepal has a remarkable public health tale to offer, having dramatically decreased iodine deficient illnesses *via* the efficient implementation of a nationwide salt iodization programme. Furthermore, a new difficulty has emerged with the increasing frequency of excess iodine situations. Thyroid dysfunction is increasing, and the rising proportion of hyperthyroidism is especially worrying.

The time has come to reassess salt iodization regulations and limit the growing incidence of thyroid dysfunction patients. Through coordinating the actions of all parties, as well as maintaining the ideal amount of iodine. Iodine insufficiency is one of the world's most serious nutritional issues. Since iodine, a vitamin, is essential for thyroid gland function, its insufficiency is the most prevalent cause of thyroid diseases globally. Hypothyroidism is a disorder caused by a reduction in thyroid hormone release from the thyroid glands.

Thyroid enlargement (goitre) is a classic symptom of iodine deficiency, but foetal consequences are more severe. In children, severe iodine deficiency produces cretinism, which is marked by significant mental retardation and brain damage, deaf-mutism, delayed growth and development, and stillbirths, whereas in pregnant women, stillbirths and miscarriages are common problems. Nearly one-third of the world's population lives in iodine-deficient areas. In 2007, the WHO reported that two billion people were deficient in iodine, including one-third of all school-aged children. Every year, more than 17 million newborns in South Asia are predicted to be born shielded from brain damage caused by iodine deficiency. Living in a location with low iodine soil and water is the most prominent risk factor for iodine deficiency, however goitrogens in vegetables may also interfere with iodine metabolism. Thyroid diseases are more frequent in women, and their frequency is significantly influenced by geography and the pattern of iodine deficiency. Iodine is required for the thyroid gland to create hormones. Thyroid hormones, and hence iodine, are required for mammalian existence. Dietary iodine intakes of 150-250 g per day are recommended for healthy adults. Iodine shortage produces a variety of negative consequences in humans owing to insufficient thyroid hormone synthesis, which is referred to as iodine deficiency illnesses. Urinary iodine concentration, goitre, and blood thyroglobulin levels are all used to assess iodine status. Worldwide, it is estimated that 2 billion people in both developed and developing nations are deficient in iodine.

In most nations, the best way to address iodine shortage in people is carefully regulated iodization of salt. Human breast milk (HBM) benefits neonates' health programming, growth, and neurodevelopment. Pregnant women should increase their iodine intake in order to create adequate thyroid hormones to fulfil foetal needs. The first metabolomic research of HBM in iodine-deficient women used a combined analytical multiplatform based on gas chromatography linked to mass spectrometry and ultra-high performance liquid chromatography coupled to quadrupole-time-of-flight mass spectrometry. Inductively coupled plasma triple quadrupole mass spectrometry was also used to determine the elemental makeup of HBM. Surprisingly, 31 metabolites with significant biological functions (for example, glycerophospholipids for neurodevelopment) were found to be changed in iodine-deficient women's HBM.

The primary metabolic processes that have been changed include lipid metabolism, the amino acid cycle, the tricarboxylic acid cycle, and glycolysis. Moreover, selenium, zinc, and copper concentrations were found to be considerably lower in the HBM of iodine-deficient women. The high global prevalence of iodine deficiency and autoimmune thyroid disorders, as well as the mental and physical consequences of these disorders, create a massive human and economic burden that, in large part, can be avoided through early detection and appropriate preventative or therapeutic measures. The availability of modern, sensitive, and precise laboratory testing technologies makes screening for these illnesses an efficient and successful platform.

Correspondence to: Carolin Geon, Department of Biomedical Sciences, University of São Paulo, São Paulo, Brazil, E-mail: Carolin@geon.br

Received: 01-Mar-2023, Manuscript No. JTDT-23-22252; **Editor assigned:** 03-Mar-2023, PreQC No. JTDT-23-22252 (PQ); **Reviewed:** 23-Mar-2023, QC No. JTDT-23-22252; **Revised:** 04-Apr-2023, Manuscript No. JTDT-23-22252(R); **Published:** 13-Apr-2023, DOI: 10.35248/2167-7948.23.12.286

Citation: Geon C (2023) Iodine Insufficiency is a Common Cause of Thyroid Issues. Thyroid Disorders Ther. 12:286.