Iodized table salt consumption among patients with Hashimoto's thyroiditis

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Dear Editor,

It is well known that, for thousands of years, salt has been used by humans for food preservation and seasoning, among other things. The addition of iodine, known as iodization, to salt (usually as potassium iodate) since 1924 has solved the problem of iodine deficiency in many countries around the globe [1]. However, in modern industrial societies, daily average salt intake has significantly increased [2], and, due to its sodium content, excessive chronic intake of salt has been linked to negative effects on blood pressure, vascular function, and the immune system [2]. As a result, the recommended maximum salt intake for normal, healthy adults has been set at 5.75 g daily, equal to 2.3 g of sodium [3]. On the other hand, as regards thyroid function, this amount of salt intake is not beneficial and is likely, in fact, to be harmful if the salt consumed is iodized table salt. This is because the daily consumption of 5.75 g iodized (50 ppm) table salt is equal to 287.5 µcg of iodine, approximately twice the recommended daily amount of 150 µcg for adults [4]. Moreover, this amount of iodine ingested via iodized table salt may increase even further during the day via the consumption of foods high in iodine, such as fish, sea vegetables, milk and dairy products, and grains (namely, bread). The above data are very important given that even small increases in iodine intake are associated with increased prevalence of thyroid autoimmunity (mainly Hashimoto's thyroiditis, HT). The latter is partly due to the fact that highly iodinated thyroglobulin (Tg) is more immunogenic than poorly iodinated Tg, causing, for example, the development of iodine-induced hypothyroidism among HT patients, particularly in areas where iodine deficiency has previously existed [1, 4–6]. In addition, HT is the most common cause of hypothyroidism in iodine-sufficient areas of the world [1, 5]. Based on the aforementioned, it is considered that persons with genetic

susceptibility to HT or/and patients with HT belong to the high-risk groups of the population for whom iodized table salt intake is probably harmful and therefore should not form part of their daily diet. Furthermore, measurement of urinary iodine could help in evaluating their dietary iodine intake [4]. Salt which contains minimal or no iodine, as, for example, unfortified sea salt or Himalayan salt, in small quantities, is, in my opinion, a safer choice for HT patients.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Lontiris MI, Mazokopakis EE (2017) A concise review of Hashimoto thyroiditis (HT) and the importance of iodine, selenium, vitamin D and gluten on the autoimmunity and dietary management of HT patients. Points that need more investigation. *Hell J Nucl Med.* 20(1):51–56
2. Agócs R, Sugár D, Szabó AJ (2019) Is too much salt harmful? Yes. *Pediatr Nephrol.* <https://doi.org/10.1007/s00467-019-04387-4>
3. Eckel RH, Jakicic JM, Ard JD, de Jesus JM, Houston Miller N, Hubbard VS et al (2014) 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation* 129(25 Suppl 2):S76–S99
4. World Health Organization (2007) Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers, 3rd edn. World Health Organization
5. Ragusa F, Fallahi P, Elia G, Gonnella D, Paparo SR, Giusti C, Churilov LP, Ferrari SM, Antonelli A (2019) Hashimoto's thyroiditis: epidemiology, pathogenesis, clinic and therapy. *Best Pract Res Clin Endocrinol Metab* 33(6):101367
6. Rayman MP (2019) Multiple nutritional factors and thyroid disease, with particular reference to autoimmune thyroid disease. *Proc Nutr Soc* 78(1):34–44

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