

Hashimoto's Thyroiditis: An Overview

Haleema Farooq

1st Year MBBS, Islamabad Medical and Dental College, Islamabad, Pakistan

Key points:

- Introduction
- Causes
- Symptoms
- Diagnosis
- Prevention and control

Introduction

Hashimoto's thyroiditis, also known as chronic autoimmune thyroiditis or chronic lymphocytic thyroiditis, is an autoimmune disease that leads to the demolition of thyroid follicular cells through immune mediated processes.¹ It is considered as one of the most common autoimmune disorders. It is related to many different type of factors, namely; genetic factors, environmental factors and epigenetic influences.² Hashimoto's thyroiditis causes a chronic inflammation of the thyroid tissue, as well as hyperthyroidism in about 20-30% of patients.³ Women are more dominantly affected by this disease with the female to male ratio being at least 7-10:1.⁴ The chances of acquiring Hashimoto's increases with age, with most cases being found between the ages of 45-55. It has more likelihood of occurring in countries which are iodine sufficient.⁴

Causes

Hashimoto's is currently believed to linked to genetic susceptibility, environmental factors as well as that immune disorders contribute to its development.⁶ Hashimoto's Thyroiditis has been characterized by the lymphocytic infiltration of the thyroid

Parenchyma.⁴ Oversufficiency of iodine has also been linked with an increase of about 4-fold increment in Hashimoto's incidence.⁵ Some causes may include:

- Deficiencies of selenium
- Deficiency of iron
- Low vitamin D.⁶

Symptoms

The signs and symptoms of Hashimoto's are directly related to its evolution into hypothyroidism. Hashimoto's has an effect on the nervous system, cardiovascular system and gastrointestinal system. Some of the symptoms may include:

- Cool and dry skin: The skin is yellowish and thickened due to the buildup of hyaluronic acid and is dry due to atrophy of sweat gland
- Hoarse voice: This is due to the myxedema of the vocal cords
- Coarse hair
- Facial edema
- Coarse facial features
- Loss of body hair
- Constipation: This is due to decreased peristalsis

- Bradycardia.
- Fatigue
- Depression
- Memory loss.⁷

Diagnosis

Hashimoto's Thyroiditis can be diagnosed using ultrasounds. The ultrasound features of Hashimoto's include decreased heterogeneity, hyper vascularity as well as the presence of small cysts.⁸

Prevention and control

Stopping smoking can increase the chances of developing Hashimoto's Thyroiditis to a certain extent whereas drinking alcohol can increase the risk of developing Hashimoto's.⁹ Pro inflammatory food may induce dysbiosis which can cause intestinal inflammation and spread towards different organs, including the thyroid gland. Therefore, adding anti-inflammatory nutrients to the diet of a patient with Hashimoto's would help to alter the expression of inflammatory genes and help to restore hormonal balance. Some Anti-inflammatory nutrients include:

- Magnesium
- Dietary fibers
- Fatty acids
- Resveratrol
- Omega-3.¹⁰

References

1. Kaur J, Jialal I. Hashimoto thyroiditis. InStatPearls [Internet] 2025 Feb 9. StatPearls Publishing
2. Ralli M, Angeletti D, Fiore M, D'Aguanno V, Lambiase A, Artico M, De Vincentiis M, Greco A. Hashimoto's thyroiditis: An update on pathogenic mechanisms, diagnostic protocols, therapeutic strategies, and potential malignant transformation. *Autoimmunity reviews*. 2020 Oct 1;19(10):102649.
3. Ragusa F, Fallahi P, Elia G, Gonnella D, Paparo SR, Giusti C, Churilov LP, Ferrari SM, Antonelli A. Hashimoto's thyroiditis: Epidemiology, pathogenesis, clinic and therapy. *Best Practice & Research Clinical Endocrinology & Metabolism*. 2019 Dec 1;33(6):101367.
4. Antonelli A, Ferrari SM, Corrado A, Di Domenicantonio A, Fallahi P. Autoimmune thyroid disorders. *Autoimmunity reviews*. 2015 Feb 1;14(2):174-80.
5. Aghini Lombardi F, Fiore E, Tonacchera MA, Antonangeli L, Rago T, Frigeri M, Provenzale AM, Montanelli L, Grasso LU, Pinchera AL, Vitti PA. The effect of voluntary iodine prophylaxis in a small rural community: the Pescopagano survey 15 years later. *The Journal of Clinical Endocrinology & Metabolism*. 2013 Mar 1;98(3):1031-9.
6. Hu S, Rayman MP. Multiple nutritional factors and the risk of Hashimoto's thyroiditis. *Thyroid*. 2017 May 1;27(5):597-610.
7. Klubo-Gwiedzinska J, Wartofsky L. Hashimoto thyroiditis: an evidence-based guide to etiology, diagnosis and treatment. *Polish archives of internal medicine*. 2022 Mar 3;132(3):16222.
8. Anderson L, Middleton WD, Teefey SA, Reading CC, Langer JE, Desser T, Szabunio MM, Mandel SJ, Hildebolt CF, Cronan JJ. Hashimoto thyroiditis: Part 2, sonographic analysis of benign and malignant nodules in patients with diffuse Hashimoto thyroiditis. *American Journal of Roentgenology*. 2010 Jul;195(1):216-22.
9. Wiersinga WM. Clinical relevance of environmental factors in the pathogenesis of autoimmune thyroid disease. *Endocrinology and metabolism*. 2016 May 13;31(2):213.
10. Danailova Y, Velikova T, Nikolaev G, Mitova Z, Shinkov A, Gagov H, Konakchieva R. Nutritional management of thyroiditis of Hashimoto. *International journal of molecular sciences*. 2022 May 5;23(9):5144.