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Vargas-Uricoechea, H; Castellanos-Pinedo, A; Meza-cabrera, IA; Pinzón-Fernández, MV; Urrego-Noguera, K; Vargas-Sierra, H.

**Corresponding author:**  
Hernando Vargas-Uricoechea  
  
hernandovargas@unicauca.edu.co  
  
**Author Affiliation:**  
Universidad del Cauca.

**ADMINISTRATIVE INFORMATION**  
  
**Support -** Universidad del cauca.  
  
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**Amendments -** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 April 2025 and was last updated on 22 April 2025.

INTRODUCTION

**Review question / Objective** The objectives of this systematic review are to describe and analyze the change in the frequency of HT, through the positivity of thyroid Abs (TPOAb and/or TgAb), in those areas where USI programs have been implemented.

**Condition being studied** Hashimoto's thyroiditis (HT) is characterized by the loss of tolerance to thyroid autoantigens [thyroid peroxidase (TPO) and thyroglobulin (Tg)], usually identifying circulating antibodies (Abs) against these thyroid autoantigens (TPOAb and/or TgAb), together with a significant lymphocytic infiltration, causing an increased risk of hypothyroidism. Among the multiple mechanisms described for the development of HT is the nutritional status of several micronutrients, including iodine. Iodine deficiency or excess is associated with thyroid function disorders and, likely, thyroid autoimmunity. Thus, iodized salt intake [especially through universal salt iodization (USI) programs] may be influencing the prevalence of HT.

METHODS

**Search strategy** The following databases were consulted, as follows: Pubmed/Medline; ProQuest; Scopus; Biosis; Web of Science, and Google Scholar, for articles published from January 1965 to January 2025. The search terms were as follows: "iodine", "salt" "intake" "prevalence" AND Hashimoto's thyroiditis were used. Only English language articles were taken into account, and each of them was scrutinized according to the JBI Critical Appraisal Checklist. Solely those studies were included in which the design, study population, number of participants, country and evaluation post-USI (years), and the prevalence of thyroid Abs positivity were described. In total, 74 studies were identified; of which 31 evaluated thyroid Abs values after USI programs.

**Participant or population** General population. Only those studies were included in which the design, study population, number of participants, country and evaluation post-USI (years), and the prevalence of thyroid Abs (TPOAb and/or TgAb) positivity were described.

**Intervention** USI programs.

**Comparator** Studies that evaluated the pre- and post-USI-program effect over time, in relation to the prevalence of TPOAb and/or TgAb positivity.

**Study designs to be included** Clinical trials, meta-analyses, reviews, scoping reviews, and systematic reviews.

**Eligibility criteria** Studies correspond to iodine, salt intake and/or Hashimoto's thyroiditis, From January 1965 to January 2025.  
Humans.  
Any geographic area, continent, country.  
Language: english.

**Information sources** Pubmed/Medline; ProQuest; Scopus; Biosis; Web of Science, and Google Scholar.

**Main outcome(s)** Prevalence of TPOAb and/or TgAb positivity.

**Additional outcome(s)** None.

**Data management** The following data were collected: design, study population, number of participants, country, post-USI evaluation (years), and prevalence of TPOAb and/or TgAb positivity (95% CI). No statistical analysis or meta-analysis was performed due to the high heterogeneity observed among the studies included in this review. However, we developed a descriptive analysis to summarize and synthesize the most important characteristics of the selected studies (in a narrative approach).

**Quality assessment / Risk of bias analysis** Titles and abstracts of all studies were independently reviewed by three investigators using the Rayyan web tool (this further helped reduce selection bias). Full texts for the studies that met initial inclusion criteria were obtained and reviewed, and the data were extracted using a standardized template using a predefined data form created in Excel, and in cases where discrepancies arose in the extracted data, they collaboratively conducted a second round of extraction to validate the accuracy of the information. Each article was scrutinized according to the JBI Critical Appraisal Checklist; letters, commentaries, preprints, letters to the editor, and non-peer-reviewed articles, as well as conference abstracts, were also excluded.

**Strategy of data synthesis** Only English language articles were taken into account, and each of them was scrutinized according to the JBI Critical

Appraisal Checklist. Solely those studies were included in which the design, study population, number of participants, country and evaluation post-USI (years), and the prevalence of thyroid Abs positivity were described. In total, 74 studies were identified; of which 31 evaluated thyroid Abs values after USI programs.

**Subgroup analysis** Not applicable in this systematic review.

**Sensitivity analysis** Not applicable in this systematic review.

**Language restriction** English.

**Country(ies) involved** Colombia.

**Other relevant information** None

**Keywords** Iodine; salt; Hashimoto; prevalence; autoimmunity; thyroid.

**Dissemination plans** High-impact journal.

#### **Contributions of each author**

Author 1 - Hernando Vargas-Uricoechea - Conceptualization, methodology, investigation, resources, data curation, writing—original draft preparation, writing—review and editing.

Email: hernandovargas@unicauca.edu.co

Author 2 - Alejandro Castellanos-Pinedo - investigation, data curation, writing—original draft preparation, writing—review and editing.

Email: acaspinedo@yahoo.es

Author 3 - Ivonne A. Meza-Cabrera - Conceptualization, methodology, investigation, resources, data curation, writing—original draft preparation, visualization.

Email: imeza@unicauca.edu.co

Author 4 - María V. Pinzón-Fernández - Conceptualization, methodology, investigation, resources, data curation, writing—original draft preparation, visualization.

Email: mpinzon@unicauca.edu.co

Author 5 - Karen Urrego-Noguera - Conceptualization, resources, data curation, writing—original draft preparation, visualization.

Email: karenurrego@unicauca.edu.co

Author 6 - Hernando Vargas-Sierra - Conceptualization, data curation, writing—original draft, preparation, visualization.

Email: hdvargas@unicauca.edu.co