



CADTH Reference List

# Screening for Thyroid Dysfunction Using Thyroid Stimulating Hormone Testing

December 2023

# Key Messages

## What Is the Question?

- We wanted to know whether there were any studies published since 2018 about the comparative benefits and harms of screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.
- We also wanted to know whether there were any evidence-based guidelines or recommendations published since 2018 about screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.

## What Did We Do?

- We compiled a reference list of clinical utility literature comparing screening for thyroid dysfunction using thyroid stimulating hormone testing with no screening. We also looked for evidence-based guidelines that provide recommendations about screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.
- A research information specialist conducted a search of peer-reviewed and grey literature sources published between January 1, 2018, and November 27, 2023. The main search concepts were thyroid function screening, asymptomatic, and universal thyroid screening. One reviewer screened titles and abstracts for inclusion based on predefined criteria. Full texts of study publications were not reviewed. Open access full-text versions of evidence-based guidelines were reviewed when available.

## What Did We Find?

- We found 1 systematic review published in 2019 about the clinical utility of screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.
- We found 1 evidence-based guideline published in 2019 about screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.

## What Does It Mean?

- The findings of this reference list suggest that there are limited recommendations and comparative evidence published after 2019 about screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults.

## Research Questions

1. What is the clinical utility of screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults?
2. What are the evidence-based guidelines regarding screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults?

## Methods

### Literature Search Methods

An information specialist conducted a literature search on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the International HTA Database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search approach was customized to retrieve a limited set of results, balancing comprehensiveness with relevancy. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. Search concepts were developed based on the elements of the research questions and selection criteria. The main search concepts were thyroid function screening, asymptomatic, and universal thyroid screening. A supplemental search was conducted with search concepts of thyroid function screening and asymptomatic, with CADTH-developed search filters applied to limit retrieval to guidelines. The search was completed on November 27, 2023, and limited to English-language documents published since January 1, 2018. Internet links were provided, where available.

### Selection Criteria

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in [Table 1](#). Open access full-text versions of evidence-based guidelines were reviewed when available.

**Table 1: Selection Criteria**

Criteria	Description
<b>Population</b>	Asymptomatic nonpregnant adults
<b>Intervention</b>	Screening for thyroid dysfunction using thyroid stimulating hormone testing
<b>Comparator</b>	Q1: No screening for thyroid dysfunction Q2: Not applicable
<b>Outcomes</b>	Q1: Clinical utility (e.g., morbidity, mortality, time to treatment, harms) Q2: Recommendations regarding best practices (e.g., appropriate patient populations, recommended screening techniques or approaches, screening algorithms)
<b>Study designs</b>	Health technology assessments, systematic reviews, randomized controlled trials, nonrandomized studies, evidence-based guidelines

## Results

One systematic review<sup>1</sup> was identified regarding the clinical utility of screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults. One evidence-based guideline<sup>2</sup> was identified regarding screening for thyroid dysfunction using thyroid stimulating hormone testing in asymptomatic, nonpregnant adults. No relevant health technology assessments, randomized controlled trials, or nonrandomized studies were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in [Appendix 1](#).

## References

### Health Technology Assessments

No literature identified.

### Systematic Reviews

1. Reyes Domingo F, Avey MT, Doull M. Screening for thyroid dysfunction and treatment of screen-detected thyroid dysfunction in asymptomatic, community-dwelling adults: a systematic review. *Syst Rev.* 2019;8(1):260. [PubMed](#)

### Randomized Controlled Trials

No literature identified.

### Non-Randomized Studies

No literature identified.

### Guidelines and Recommendations

2. Birtwhistle R, Morissette K, Dickinson JA, et al. Recommendation on screening adults for asymptomatic thyroid dysfunction in primary care. *CMAJ.* 2019. 1919:E1274-80. <https://www.cmaj.ca/content/cmaj/191/46/E1274.full.pdf>. Accessed 2023 Nov 28. [PubMed](#)  
Refer to Recommendation (p. E1275)

## Appendix 1: References of Potential Interest

### Non-Randomized Studies

#### *Alternative Outcome – Cascades of Care*

Ganguli I, Lupo C, Mainor AJ, et al. Assessment of Prevalence and Cost of Care Cascades After Routine Testing During the Medicare Annual Wellness Visit. *JAMA Netw Open*. 2020;3(12):e2029891. [PubMed](#)

### Guidelines and Recommendations

#### *Alternative Methodology – Consensus*

Alzahrani AS, Al Mourad M, Hafez K, et al. Diagnosis and Management of Hypothyroidism in Gulf Cooperation Council (GCC) Countries. *Adv Ther*. 2020;37(7):3097-3111. [PubMed](#)

#### *Unclear Methodology*

Roy Romanow Provincial Laboratory Testing Guidelines for the Diagnosis and Monitoring of Thyroid Disease. Saskatoon (SK): Saskatchewan Health Authority. 2018. <https://rrpl-testviewer.ehealthsask.ca/SCI/Sample%20Collection%20and%20Packaging%20Information/Testing%20Guidelines%20for%20the%20Diagnosis%20and%20Monitoring%20of%20Thyroid%20Disease%20v2.0.pdf>. Accessed 2023 Nov 28.

Refer to Clinical Aspects of Testing #1 (p. 1)

Thyroid Function Testing in the Diagnosis and Monitoring of Thyroid Function Disorder. Victoria (BC): BC Guidelines. 2018. <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/thyroid-testing>. Accessed 2023 Nov 28.

Refer to Key Recommendations (p. 1)

### Review Articles

Godbole NP, Koester M, Marcus EN. Hypothyroidism in Adult Women: The Utility of Targeted vs Universal Thyroid Screening. *Int J Womens Health*. 2023;15:1515-1522. [PubMed](#)

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