



U.S. Preventive Services Task Force Literature Surveillance Report

Title: Screening for Thyroid Dysfunction

Literature surveillance date: May 2024

Recommendation Summary: In 2015, the Task Force concluded that the current evidence was insufficient to assess the balance of benefits and harms of screening for thyroid dysfunction in nonpregnant, asymptomatic adults (Grade: **I statement**).

Research Gaps from Previous Task Force Review: The 2015 recommendation was based on an evidence review with a search through July 2014. The Task Force identified important gaps and recommends research on the following:

- The benefits and harms of screening;
- The prevalence of unrecognized overt thyroid disease;
- The benefits and harms of treatment, particularly for overt thyroid disease; and
- The criteria for abnormal thyroid function.

Summary of New Evidence: Literature scans conducted in the MEDLINE and PubMed databases and the Cochrane Library were limited to English language, core and specialty journals, 2014 to present.

Systematic reviews

A 2019 review by the Canadian Preventive Services Task Force (CPSTF) was modeled on the prior USPSTF review on screening for thyroid dysfunction, including adoption of the analytic framework and key questions. The CPSTF bridged the USPSTF's prior search, looking at literature published between 2014 – 2018. The CPSTF review found no evidence on the benefits and harms of screening asymptomatic non-pregnant adults for thyroid dysfunction and no studies reporting on the benefits and harms of treatment for screen-detected overt thyroid disease or subclinical hyperthyroidism. All 22 included studies reported on the benefits and harms of treatment for subclinical hypothyroidism.¹

Primary studies

We identified no studies of screening for thyroid dysfunction.

Six articles on the effectiveness of treatment for subclinical hypothyroidism report outcomes from the Thyroid Hormone Replacement for Untreated Older Adults with Subclinical Hypothyroidism (TRUST) study, an RCT comparing treatment with levothyroxine versus placebo among adults aged 65 years and older in Switzerland and The Netherlands. Sample sizes range from 98 to 737, with followup time ranging from one to two years. Reported outcomes include hypothyroid symptoms or fatigue,² depressive symptoms,³ bone density,⁴ patient-reported thyroid-related quality of life,⁵ change in muscle mass and sarcopenia incidence,⁶ and changes in bone mass, bone geometry, and volumetric density.⁷

Six articles report harms of treatment for thyroid dysfunction. A 2015 retrospective cohort study of 4,000 patients with overt hyperthyroidism treated with radioiodine reports cerebrovascular events after 11.5 years of followup.⁸ The other five articles report harms for treatment of subclinical hypothyroidism. Sample size ranges from 251 to 733,208 and followup ranges from 5 to 9 years. Reported outcomes include all-cause mortality,^{9,10} major adverse cardiac events and hospital admissions,¹⁰ adverse events,^{2,5} and incident stroke.¹¹



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