Putting Prevention into Practice
An Evidence-Based Approach

Screening for Thyroid Dysfunction

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▶ See related U.S. Preventive Services Task Force Recommendation Statement at http://www.aafp.org/afp/2015/0601/od1.html.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and the supporting documents on the USPSTF website (http://www.uspreventiveservicestaskforce.org). The practice recommendations in this activity are available at http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/thyroid-dysfunction-screening.

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CME This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz Questions on page 674.

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Case Study

A 40-year-old woman presents for a routine well-woman examination. She is not pregnant, is in good health, reports no symptoms, and her physical examination is unremarkable. After seeing a health news segment on television, she asks if she should have her thyroid function checked.

Case Study Questions

1. Based on the recommendations of the U.S. Preventive Services Task Force (USPSTF), which one of the following is most accurate for this patient?

- ❑ A. She should have her serum thyroid-stimulating hormone (TSH) level checked annually.
- ❑ B. She should have her serum thyroxine (T_4) level checked annually.
- ❑ C. There is not enough evidence to know whether screening for thyroid dysfunction will be of net benefit to her.
- ❑ D. She should not be screened for thyroid dysfunction because the harms outweigh the benefits.
- ❑ E. She should not be screened for thyroid dysfunction until she is 50 years of age.

2. The USPSTF found clear evidence that early screening for and treatment of subclinical thyroid dysfunction in nonpregnant asymptomatic adults is associated with clinically meaningful improvements in which of the following?

- ❑ A. Lipid levels.
- ❑ B. Blood pressure.
- ❑ C. Body mass index.
- ❑ D. Bone mineral density.
- ❑ E. None of the above.

3. Which of the following statements about subclinical hypothyroidism are correct?

- ❑ A. Studies have shown that more than one-third of persons with subclinical hypothyroidism spontaneously revert to a euthyroid state without intervention.
- ❑ B. There is general professional consensus that subclinical hypothyroidism can be accurately diagnosed with a single abnormal laboratory value.
- ❑ C. Most adults with subclinical hypothyroidism eventually develop overt thyroid dysfunction.
- ❑ D. There is a lack of professional consensus on the appropriate point for clinical intervention, particularly when a patient's TSH level is less than 10.0 mIU per L.

Answers appear on the following page.

Answers

1. The correct answer is C. The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for thyroid dysfunction in nonpregnant asymptomatic adults. The serum TSH test is the primary screening test for thyroid dysfunction. Follow-up testing of serum T_4 levels in persons with persistently abnormal TSH levels can differentiate between subclinical and overt thyroid dysfunction. The optimal age to begin and the optimal screening interval for thyroid dysfunction—if one exists—are unknown.

2. The correct answer is E. The USPSTF found adequate evidence that screening for and treatment of thyroid dysfunction in nonpregnant asymptomatic adults does not provide meaningful improvements in lipid levels, blood pressure, body mass index, or bone mineral density. It also does not improve quality of life or cognitive function, at least through the duration of available trials (i.e., one to two years).

3. The correct answers are A and D. Several studies have shown that about 37% of persons with subclinical hypothyroidism spontaneously revert to a euthyroid state without intervention after several years. Consensus is lacking on the appropriate point for clinical intervention for hypothyroidism, and no clinical trial data exist to support a treatment threshold to improve clinical outcomes. On the basis of expert opinion, a TSH level greater than 10.0 mIU per L is generally considered the threshold for initiation of treatment. TSH levels can vary considerably within individuals and across populations, and are highly sensitive to conditions other than thyroid dysfunction (such as acute illness and certain medications or hormones). These issues have led many professional groups to recommend repeating thyroid function tests if the results fall above or below a specified reference interval for confirmation of persistent dysfunction (e.g., over three- to six-month intervals) in asymptomatic persons before making a diagnosis, unless the serum TSH level is greater than 10.0 or less than 0.1 mIU per L. Only about 2% to 5% of persons with subclinical hypothyroidism develop overt thyroid dysfunction.

The views expressed in this work are those of the authors, and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the U.S. government.

SOURCES

Screening for thyroid dysfunction: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2015;162(9):641-650.

Rugge JB, Bougatsos C, Chou R. Screening and treatment of thyroid dysfunction: an evidence review for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2015;162(1):35-45. ■