



Subclinical Hypothyroidism

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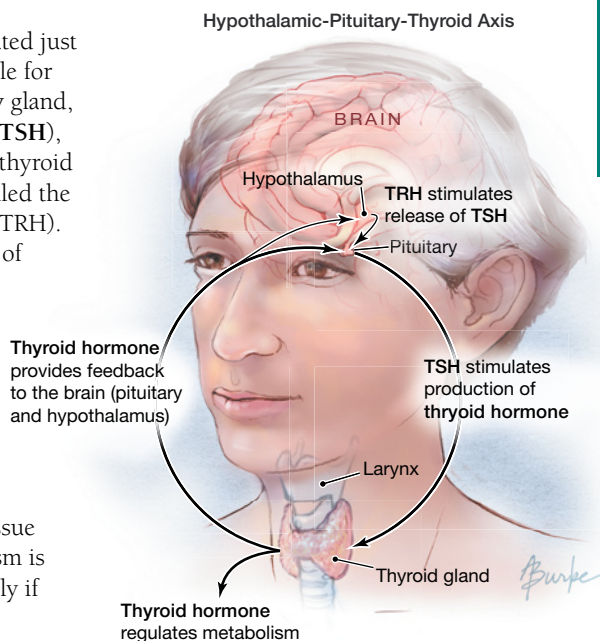
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Subclinical Hypothyroidism

The **thyroid gland**, a 2-inch-long, butterfly-shaped gland located just below the **larynx** (voice box), produces hormones responsible for one's **metabolism** (use of energy by the body). The **pituitary gland**, located at the base of brain, secretes thyroid-stimulating hormone (TSH), which makes the thyroid produce and release **thyroxine**, the main thyroid hormone. The pituitary is regulated by another area of the brain called the **hypothalamus**, which produces **thyrotropin-releasing hormone** (TRH). When thyroid function is too low, the pituitary increases its output of TSH to stimulate the thyroid to work harder. **Subclinical** (without obvious symptoms) **hypothyroidism** (low thyroid function) describes a situation in which thyroid function is only mildly low, so that the blood level of thyroxine remains within the normal range, but the blood level of TSH is elevated, indicating mild thyroid failure. **Overt hypothyroidism**, where the levels of thyroxine are actually below normal, is a more severe problem and may cause fatigue, weight gain, cold intolerance, dry skin, and an increased risk of heart problems. The September 22/29, 2010, issue of *JAMA* includes an article reporting that subclinical hypothyroidism is associated with an increased risk of coronary heart disease, especially if the levels of TSH are very high (10 mU/L or more).



DIAGNOSIS

Subclinical hypothyroidism is diagnosed using blood tests to measure the TSH and thyroid hormone levels. An increased level of TSH without a decreased level of thyroid hormone indicates the presence of subclinical hypothyroidism.

RISK FACTORS FOR DEVELOPING SUBCLINICAL HYPOTHYROIDISM

- **Hashimoto thyroiditis**—a common thyroid gland inflammation produced by antibodies against thyroid cells
- Recent treatment with
 - radioactive iodine—used for treatment of **hyperthyroidism** (an increased production of thyroid hormones)
 - interferon alfa**—an anticancer drug
 - interleukin 2**—a drug used to treat kidney cancer
- Irregular heart rhythm treatment with amiodarone
- Treatment with **lithium** (a mood-stabilizing drug)
- Recent pregnancy and child delivery

TREATMENT

Subclinical hypothyroidism can be treated with a single daily dose of thyroxine. This treatment requires monitoring of the thyroid hormone levels in the blood over several months. However, it is not certain whether it is necessary to treat subclinical hypothyroidism at all. The study in this issue of *JAMA* suggests that treatment might be warranted, especially if the blood TSH level is above 10 mU/L.

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FOR MORE INFORMATION

- National Institute of Diabetes and Digestive and Kidney Diseases
www.endocrine.niddk.nih.gov/pubs/Hypothyroidism/Hypothyroidism.pdf
- American Thyroid Association
www.thyroid.org

INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA's Web site at www.jama.com. Many are available in English and Spanish. A Patient Page on hypothyroidism was published in the December 10, 2003, issue and one on hyperthyroidism was published in the July 6, 2005, issue.

Sources: American Thyroid Association, National Institute of Diabetes and Digestive and Kidney Diseases, American Foundation of Thyroid Patients, Thyroid Foundation of America

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