



Identify the disease and manage
the complexity of thyroid care

Count on comprehensive testing from Quest Diagnostics



Get the insight you need to **diagnose** **and manage thyroid disorders**

Accurate testing from Quest Diagnostics can help you minimize complications for hypo- and hyperthyroidism

Due to multiple causes and manifestations, diagnosing and managing the complications of thyroid disease can be challenging. In the U.S., up to 20 million people have some form of the disease—yet 60% are unaware of their condition.¹

Thyroid testing from Quest can provide you with the insight you need to diagnose, treat, monitor, and prevent complications related to every type and etiology of the disease—including both Graves' and Hashimoto's diseases.

Know the risk factors, symptoms, and testing guidelines for **Graves' disease**

The most common cause of hyperthyroidism in the U.S. is Graves' disease²

The ambiguous nature of Graves' disease symptoms can result in misdiagnosis and treatment delays.³⁻⁵ Confirming the diagnosis—and ruling out other diagnoses—is key to minimizing complications.

Signs and symptoms⁶

- Nervousness or irritability
- Fatigue/muscle weakness
- Heat intolerance
- Trouble sleeping
- Hand tremors
- Irregular heartbeat
- Weight loss
- Frequent bowel movements/diarrhea
- Goiter
- Graves' ophthalmopathy

Risk factors⁶⁻⁹

- Age 20–40 years
- Family history
- Female sex
- Other autoimmune disorders
- Pregnancy
- Smoking
- Physical/emotional stress

Complications³⁻⁵

- Heart rhythm disorders
- Congestive heart failure
- Thyroid storm

10 million

people in the U.S. are affected by Graves' disease¹⁶

Graves' disease: a continuum of care

Screening²

Family/personal history

- Patients with other autoimmune disorders
- Family history of Graves' disease
- Presence of risk factors

- TSH test
- T3 and T4 test
- Radioactive iodine uptake (RAIU)

Diagnosis²

- Radioactive iodine uptake (RAIU) test
- TSI
- Thyroid scan (may be done together with the RAIU test if solitary nodule is suspected)

Monitoring²

- TSH test
- T3 and T4 test

ATA/AACE* recommended guidelines for testing:

- Every 1–2 months for those on radioactive iodine treatment (the most common form of treatment)
- Every 3 months for 1 year for patients in remission, and 6–12 months thereafter

* American Thyroid Association/American Association of Clinical Endocrinologists

Know when to test for **Hashimoto's disease**—and manage complications

The most common cause of hypothyroidism in the U.S. is Hashimoto's disease¹⁰

With multiple signs and symptoms, Hashimoto's disease can be difficult to diagnose, while managing the comorbidities of the disorder can be challenging.⁴ Confirming the diagnosis—and ruling out other diagnoses—is key to minimizing complications.

Signs and symptoms⁶

- Poor memory and concentration
- Hoarseness
- Slow pulse rate
- Delayed reflex relaxation
- Cold extremities/feeling cold
- Carpal tunnel syndrome
- Fatigue
- Weight gain and poor appetite
- Hair loss
- Shortness of breath
- Constipation

Risk factors^{6,11-15}

- Female sex
- Middle age (>50)
- Family history of thyroid or other autoimmune diseases
- Other autoimmune disorders

Complications¹⁰

- Goiter
- High levels of low-density lipoprotein
- Heart disease
- Enlarged heart
- Mental health issues
- Myxedema (in rare cases)
- Birth defects

14 million
people in the U.S. are affected by Hashimoto's disease¹⁶

Hashimoto's disease: a continuum of care

Screening¹⁰

Family/personal history

- Presence of, or family history of, autoimmune disease or thyroid disease
- Presence of risk factors

- TSH test (serum TSH measurement is the most sensitive test for hypothyroidism)
- T3 and T4 test

Diagnosis¹⁰

- TSH test (serum TSH measurement is the most sensitive test for hypothyroidism)
- T3 and T4 test
- Anti-thyroid antibodies (TPO can help predict progression from subclinical to overt hypothyroidism)

Monitoring¹⁰

- TSH test
- T3 and T4 test
- TPO

ATA/AACE* recommended guidelines for testing:

- TSH levels should be checked 4–8 weeks following initiation of therapy
- Routine TSH measurements should be done:
 - 6 months after initial treatment
 - Every 12 months thereafter, or more frequently if the clinical situation dictates otherwise

* American Thyroid Association/American Association of Clinical Endocrinologists

Know whether it's Graves' or Hashimoto's—with comprehensive testing for differential diagnosis

Quest Diagnostics offers a range of tests to help you not only diagnose thyroid disease, but also determine the exact form and cause, for better disease management.

Test Name	Test Code	Description	CPT Code(s)**
T3 Uptake	17732(X)	Measures available thyroid hormone binding sites	84479
T3, Free (FT3) [Non-Dialysis]	34429	Used to diagnose hyperthyroidism and to clarify thyroid status in the presence of a possible protein binding abnormality	84481
T3, Free, Tracer Dialysis	36598	Used to diagnose hyperthyroidism; can also be used to clarify thyroid status in the presence of possible protein-binding abnormalities	84480 84481
T3, Total	859	Used to diagnose and monitor treatment of hyperthyroidism; essential for recognizing T3 toxicosis	84480
T4, Free	866	Used to diagnose hypothyroidism and hyperthyroidism	84439
T4, Free, Direct Dialysis	35167	Useful in distinguishing euthyroidism from thyroid disease	84439
T4, Free, Direct Dialysis and LC/MS/MS	94196	Differentiates euthyroid hyperthyroxinemia from hyperthyroidism, as well as euthyroid hypothyroxinemia from hypothyroidism	84439
TRAb (TSH Receptor Binding Antibody)	5738	Used to diagnose and manage Graves' disease, neonatal hypothyroidism, and postpartum thyroid dysfunction	83519
Thyroglobulin Antibodies	267	Useful in the diagnosis and management of a variety of thyroid disorders, including Hashimoto's disease, Graves' disease, and certain types of goiter	86800
Thyroid Peroxidase and Thyroglobulin Antibodies	7260	Useful in the diagnosis and management of a variety of thyroid disorders, including autoimmune thyroiditis, Hashimoto's disease, Graves' Disease, and certain types of goiter	86376 86800
Thyroid Peroxidase Antibodies	5081	Assists in the diagnosis of thyroid diseases such as endemic goiter, Graves' disease, autoimmune thyroiditis, Addison's disease, insulin-dependent diabetes mellitus, Hashimoto's disease, and polyendocrine auto-immunopathies	86376
TSH	899	Detects TSH levels for differential diagnosis of primary, secondary, and tertiary hypothyroidism; also useful in screening for hyperthyroidism	84443
TSH with Reflex to Free T4	36127	Used to diagnose hypothyroidism and hyperthyroidism	84443 84439 if performed
TSI (Thyroid Stimulating Immunoglobulin)	30551	Assists in the diagnosis of thyroid diseases, including Graves' disease and Hashimoto's disease	84445

* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

† NCCI does not permit payment of CPT codes 84436 and 84479 with CPT code 84439. NCCI Policy Manual – Effective Jan.1. 2017, Chapter 10 - CPT Codes 80000 – 89999.

Get the insights you need from the lab that knows endocrinology

Count on actionable results to help you do your best for your patients

- Comprehensive endocrinology tests across disease areas, including tests for differential thyroid disease diagnoses
- Reliable and accurate result reporting aligned to endocrine guidelines
- Endocrinology interpretation guides and algorithms
- Medical and scientific expertise from Quest Diagnostics Nichols Institute and Athena Diagnostics



Please contact your Quest Diagnostics sales representative for more information about our thyroid testing.

To speak to an endocrinology specialist, call 1.866.MYQUEST (1.866.697.8378)

References

1. American Thyroid Association. General information/press room. Available at www.thyroid.org/media-main/about-hypothyroidism. Accessed February 8, 2017.
2. Bahn RS, Burch HB, Cooper DS, et al. Hyperthyroidism and other causes of thyrotoxicosis: management guidelines of the American Thyroid Association and American Association of Clinical Endocrinologists. *Endocr Pract.* 2011;17:456-520.
3. DeGroot LJ. Graves' disease and the manifestations of thyrotoxicosis. 2015. Available at www.ncbi.nlm.nih.gov/books/NBK285567. Accessed February 8, 2017.
4. Ginsburg J. Diagnosis and management of Graves' disease. *CMAJ.* 2003;168(5):575-585.
5. Stern RA, Robinson B, Thorner AR, et al. A survey study of neuropsychiatric complaints in patients with Graves' disease. *J Neuropsychiatry Clin Neurosci.* 1996;8(2):181-185.
6. Nussey S, Whitehead S. Chapter 3: The thyroid gland. *Endocrinology: An Integrated Approach*. Oxford: BIOS Scientific Publishers; 2001.
7. Pramyothin P, Leung AM, Pearce EN, et al. Clinical problem-solving. A hidden solution. *N Engl J Med.* 2011;365(22):2123-2137.
8. Ginsberg J, Lewanczuk RZ, Honore LH. Hyperplacentosis: A novel cause of hyperthyroidism. *Thyroid.* 2001;11:393-396.
9. Patil-Sisodia K, Mestman JH. Graves hyperthyroidism and pregnancy: A clinical update. *Endocr Pract.* 2010;16(1):118-129.
10. Garber JR, Cobin RH, Gharib H, et al. Clinical practice guidelines for hypothyroidism in adults: cosponsored by the American Association of Clinical Endocrinologists and the American Thyroid Association. *Endocr Pract.* 2012;18:988-1028.
11. Flynn RV, MacDonald TM, Morris AD, et al. The thyroid epidemiology, audit and research study; thyroid dysfunction in the general population. *J Clin Endocrinol Metab.* 2004;89:3879-3884.
12. Tamai H, Kasagi K, Takaichi Y. Development of spontaneous hypothyroidism in patients with Graves' disease treated with antithyroidal drugs: clinical, immunological, and histological findings in 26 patients. *J Clin Endocrinol Metab.* 1989;69(1):49-53.
13. Hancock SL, Cox RS, McDougall IR. Thyroid diseases after treatment of Hodgkin's disease. *N Engl J Med.* 1991;325(9):599-605.
14. Buisset E, Leclerc L, Lefebvre J-L, et al. Hypothyroidism following combined treatment for hypopharyngeal and laryngeal carcinoma. *Am J Surg.* 1991;162:345-347.
15. UCLA Endocrine Surgery Encyclopedia. Secondary hypothyroidism. Available at www.uclahealth.org/endocrine-center/hypothyroidism-secondary. Accessed February 8, 2017.
16. American Association of Clinical Endocrinologists. Hashimoto's thyroiditis. Available at www.aace.com/files/hashimotos.pdf. Accessed February 8, 2017.

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