



Understanding Graves Disease

Patient Education Sheet

This sheet focuses on signs and symptoms of, and treatment options for, Graves disease.

An Overview of Graves Disease

- In Graves disease, the body's immune system responds to the thyroid gland as if it were a group of foreign cells. As a result, it sends antibodies to attack the thyroid cells. This is called an autoimmune condition because the immune system is attacking the body's own cells.
- In Graves disease, the antibodies that attack thyroid cells cause the thyroid cells to produce an abundance of thyroid hormone, leading to hyperthyroidism.

The Thyroid Gland—The Basics

- The thyroid is a butterfly-shaped gland located at the base of the neck that lies on either side of the windpipe. It produces and releases thyroid hormone.
- Thyroid hormone affects every cell in the body and controls most of the body's functions.
- The amount of thyroid hormone made by the thyroid gland is regulated by the pituitary gland and the hypothalamus in the brain.
- The pituitary gland releases thyroid-stimulating hormone (TSH), which signals the thyroid to produce more thyroid hormone. When the pituitary gland senses that there is the right amount of thyroid hormone in the body, it will decrease thyroid hormone production.
- Physicians can measure the health of the thyroid gland by measuring levels of TSH.
- Too little thyroid hormone production causes a condition known as hypothyroidism; too much thyroid hormone production causes a condition known as hyperthyroidism.

Hypothyroidism and Mild Thyroid Failure

- When a patient has hypothyroidism, he or she may feel tired and cold, have a slow heartbeat, or feel depressed.
- Mild thyroid failure is a mild form of hypothyroidism. In patients who have mild thyroid failure, the thyroid hormone levels are normal, but the TSH level is elevated.
- Patients with mild thyroid failure often do not show any obvious signs or symptoms, but untreated mild thyroid failure may lead to hypothyroidism.

Hyperthyroidism and Mild Hyperthyroidism

- Patients with hyperthyroidism may feel jittery and may experience nervousness, a rapid heartbeat, of unexplained weight loss.
- Patients with mild hyperthyroidism have normal thyroid hormone levels and a decreased TSH level. Untreated mild hyperthyroidism can progress to hyperthyroidism and may lead to potentially harmful cardiovascular disorders.

Diagnosing Thyroid Disorders

- Some people are more likely than others to develop thyroid disorders, including women (especially those age 30 and

older), people with a family history of thyroid disease, and people with autoimmune conditions, such as Addison disease, type 1 diabetes, pernicious anemia, rheumatoid arthritis, or lupus.

- To diagnose a thyroid disorder, a physician will conduct a physical examination to look for signs and symptoms of a thyroid disorder. The physician will examine the patient's neck, where the thyroid is located, to determine whether a goiter is present (a goiter is an enlarged thyroid gland). It may be enlarged because of several reasons, and it may shrink back to normal by itself.
- The physician will also examine the thyroid gland to determine whether there are thyroid nodules present. Thyroid nodules are lumps in the thyroid gland that may overproduce thyroid hormone. Thyroid nodules are often harmless, rarely cancerous, and tend to run in families. If the thyroid nodule is cancerous, the outcome with treatment is usually excellent. Weight, blood pressure, and pulse will be measured, and eyes, skin, heart, and the nervous system will be examined as well.
- A physician will also conduct laboratory tests, such as blood tests, to diagnose a thyroid disorder. The TSH test is the best test for determining thyroid function or the severity of hyperthyroidism. If the patient's TSH level is higher than normal, he or she may have hypothyroidism. If the patient's TSH level is lower than normal, he or she may have hyperthyroidism.
- Thyroid antibody tests will help a physician determine whether a patient's immune system is affecting thyroid function, as is the case with Graves disease. A radioactive iodine uptake test is used to test iodine absorption. The test begins with the patient swallowing a radioactive iodine pill; 6 to 24 hours later, the physician will determine how much of the radioactive iodine was absorbed.

Treating Hyperthyroidism Due to Graves Disease

- The first treatment option for hyperthyroidism is radioactive iodine therapy. The iodine goes directly to the thyroid gland and destroys thyroid cells, thereby decreasing the production of thyroid hormone.
- Other treatment options for hyperthyroidism include antithyroid drugs. Antithyroid drugs slow down the thyroid gland's production of thyroid hormone. Often, however, the hyperthyroidism will return after the medication is stopped and further treatment will be needed.
- Surgical removal of the thyroid gland is another option. This is the least frequently used option, but it may be recommended if the patient is pregnant. Surgery may also be recommended if the patient does not respond to, or is allergic to, antithyroid drugs, does not wish to have radioactive iodine therapy, or has a thyroid nodule.
- Often after being treated for hyperthyroidism, a patient will become hypothyroid and will require lifelong thyroid hormone replacement therapy with a synthetic hormone called levothyroxine sodium.

More Information

- Patients who have further questions should contact their physician.