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Graves disease

Graves disease is an autoimmune disorder that leads to overactivity of the thyroid gland (hyperthyroidism). An autoimmune disorder is a condition that occurs when the immune system mistakenly attacks healthy tissue.

Causes

The thyroid gland is an important organ of the endocrine system. The gland is located at the front of the neck above where the collarbones meet. This gland releases the hormones thyroxine (T4) and triiodothyronine (T3), which control body metabolism. Controlling metabolism is important for regulating mood, weight, and mental and physical energy levels.

When the body makes too much thyroid hormone, the condition is called hyperthyroidism. (An underactive thyroid leads to hypothyroidism.)

Graves disease is the most common cause of hyperthyroidism. It is due to an abnormal immune system response that causes the thyroid gland to produce too much thyroid hormone. Graves disease is most common in women over age 20. But the disorder can occur at any age and can affect men as well.

Symptoms

Younger patients may have these symptoms:

- Anxiety
- Breast enlargement in men (possible)
- Difficulty concentrating
- Double vision
- Eyeballs that bulge (exophthalmos)
- Eye irritation and tearing
- Fatigue
- Frequent bowel movements
- Goiter (possible)
- Heat intolerance
- Increased appetite
- Increased sweating
- Irregular menstrual periods in women
- Muscle weakness of the hips and shoulders
- Moodiness
- Nervousness
- Rapid or irregular heartbeat (palpitations or arrhythmia)
- Restlessness and difficulty sleeping
- Shortness of breath with activity
- Tremor
- Weight loss (weight gain in some cases)

Older patients may have these symptoms:

- Rapid or irregular heartbeat

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- Chest pain
- Memory loss
- Weakness and fatigue

Exams and Tests

The health care provider will do a physical exam and may find that you have an increased heart rate. An exam of your neck may find that your thyroid gland is enlarged (goiter).

Other tests include:

- Blood tests to measure levels of TSH, T3, and free T4
- Radioactive iodine uptake and scan

This disease may also affect the following test results:

- Orbit CT scan or ultrasound
- Thyroid stimulating immunoglobulin (TSI)
- Thyroid peroxidase (TPO) antibody
- Anti-TSH receptor antibody

Treatment

Treatment is aimed at controlling your overactive thyroid. Medicines called beta-blockers are often used to treat symptoms of rapid heart rate, sweating, and anxiety until the hyperthyroidism is controlled. Hyperthyroidism is treated with one or more of the following:

- Antithyroid medications
- Radioactive iodine
- Surgery

If you have had radioactive iodine treatment or surgery, you will need to take replacement thyroid hormones for the rest of your life. This is because these treatments destroy or remove the gland.

Some of the eye problems related to Graves disease usually improve when hyperthyroidism is treated with medications, radiation, or surgery. Radioactive iodine can sometimes make eye problems worse. Eye problems are worse in people who smoke, even after the hyperthyroidism is cured.

Sometimes prednisone (a steroid medication that suppresses the immune system) is needed to reduce eye irritation and swelling.

You may need to tape your eyes closed at night to prevent drying. Sunglasses and eye drops may reduce eye irritation. In rare cases, surgery or radiation therapy (different from radioactive iodine) may be needed to prevent further damage to the eye and loss of vision.

Outlook (Prognosis)

Graves disease often responds well to treatment. Thyroid surgery or radioactive iodine usually will cause an underactive thyroid (hypothyroidism). Without getting the correct dosage of thyroid hormone replacement, hypothyroidism can lead to:

- Depression
- Mental and physical sluggishness
- Weight gain

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When to Contact a Medical Professional

Call your health care provider if you have symptoms of Graves disease. Also call if your eye problems or other symptoms get worse or do not improve with treatment.

Go to the emergency room or call the local emergency number (such as 911) if you have symptoms of hyperthyroidism with:

- Decrease in consciousness
- Fever
- Rapid, irregular heartbeat

Alternative Names

Diffuse thyrotoxic goiter

References

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;17:457-520.

Cockerman KP, Chan SS. Thyroid eye disease. *Neurol Clin.* 2010;28:729-755.

Mandel SJ, Larsen PR, Davies TF. Thyrotoxicosis. In: Melmed S, Polonsky KS, Larsen PR, Kronenberg HM. *Williams Textbook of Endocrinology.* 12th ed. Philadelphia, PA: Elsevier Saunders; 2011:chap 12.

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