



Education

Graves' Disease

What is Graves' disease?

Graves' disease is the most common type of hyperthyroidism. Hyperthyroidism is a condition in which the body has too much thyroid hormone.

Graves' disease is more common in women than men. It usually occurs in young and middle-aged women. It is unusual for people to become extremely sick because of Grave's disease.

How does it occur?

The precise cause of Grave's disease is still unknown. The disease appears to be an autoimmune disease. This means that the body's defenses against infection attack the body's own tissue. In the case of Graves' disease, the body appears to be making antibodies that cause the thyroid gland to make more hormone than normal. As a result, the body has too much thyroid hormone.

The thyroid gland is key to maintaining normal metabolism. Metabolism is the rate at which the body's cells do their work. Metabolism regulates your heart rate, the amount of calories you burn when you are resting, your energy level, and other body functions. When thyroid function becomes abnormal, the effects on your body can be dramatic.

What are the symptoms?

The most common symptoms of Graves' disease are:

- weight loss
- rapid heart rate
- anxiety
- feeling hot
- perspiring a lot.

Many people feel nervous or not able to control their emotions. Some feel muscle weakness, especially in the thigh muscles when going up stairs. A few people notice a swelling in their neck because of an enlarged thyroid. An enlarged thyroid gland is called a goiter.

About half of all people with Graves' disease develop eye symptoms. These symptoms include eyes that protrude more than usual from the sockets, and eyelids that do not completely close over the eye. Even if the eyes are not protruding, they may appear to be bulging because the eyelid closes over less of the eye and the white of the eye is visible all around the iris (the colored part of the eye). Dryness and irritation of the eyes are common. Sometimes the eye muscles are affected, which may limit movement of the eyeballs. This problem with the eyes is called exophthalmos. Sometimes just one eye has symptoms, but usually both eyes are affected.

How is it diagnosed?

Your health care provider will do a thorough medical history and physical exam, including an exam of your eyes. He or she will look for enlargement of your thyroid gland, a pulse rate faster than normal, and elevated blood

pressure. Your provider will test the strength of the muscles of your upper arms and upper legs and look for trembling of your hands.

Your provider will measure the level of thyroid hormone in your blood. He or she will also check for antibodies in the blood that attack the thyroid gland.

Additional tests may be done to check the thyroid gland.

- A test called a radioactive iodine scan, or RAI uptake, shows if there are areas of the thyroid gland making more or less hormone than normal. For this test you will be given a very tiny amount of a radioactive form of iodine. Because the body uses iodine to make thyroid hormone, the radioactive iodine attaches to thyroid hormone being made in the thyroid gland. A scan to look for radioactivity in the thyroid gland then shows areas of the gland making thyroid hormone. (The iodine becomes nonradioactive in 3 days.) Sometimes a radioactive chemical similar to iodine may be used instead of iodine.
- A scan of the thyroid gland with ultrasound is another way to look at the thyroid gland. The ultrasound scan can show cysts or tumors in the gland and can be used to measure the size of the gland.

How is it treated?

No treatment is yet available to stop the production of the antibodies that seem to cause hyperthyroidism. However, treatment can help you have more normal levels of thyroid hormone and control your symptoms.

The two anti-thyroid drugs commonly used to decrease the production of thyroid hormone are PTU (propylthiouracil) and methimazole (Tapazole). At first you may need to take the medicine up to 3 times a day. Your health care provider will check the effect on your thyroid hormone levels every 2 to 4 weeks. Depending on which medicine you are taking, after several weeks you may have to take it just 1 or 2 times a day.

The anti-thyroid drugs can cause a decrease in your white blood cells. For this reason your health care provider will check your white blood cell count before you begin taking the drugs and then recheck it during your drug therapy.

The medicines used only to control symptoms are a type called beta blockers. Propranolol (Inderal) is the beta blocker usually used. It slows heart rate, lowers blood pressure, and may help calm feelings of anxiety. Beta blockers do not affect the production of thyroid hormone.

Sometimes steroid medicine (prednisone) is used to treat eye problems caused by hyperthyroidism. For reasons that are not understood, nonsmokers get better results from treatments for eye problems than smokers. The eyes need to be kept moist, so your health care provider may recommend that you use eyedrops.

If your symptoms are severe or continue for a long time, your health care provider may suggest destroying at least some of the hormone-producing cells in the thyroid gland. This can be done two ways. The method with the least complications uses radioactive iodine to kill some of the cells in the thyroid gland. This poses no significant radiation risk to you and requires only a couple of days of treatment. After this treatment, however, if too many thyroid cells are destroyed by the radioactive iodine, you may need to take thyroid hormone for the rest of your life.

The other alternative for severe or long-term hyperthyroidism is surgical removal of your thyroid gland. Because there are so many important structures in the area of the thyroid gland, serious complications can arise from the surgery. You can reduce the risk by selecting an experienced thyroid surgeon who does the surgery often. After surgery, you will need to take thyroid hormone for the rest of your life.

How long will the effects last?

Often Graves' disease is brought under control after about 8 weeks of treatment with anti-thyroid drugs, although usually you will need to keep taking the medicine for at least a year. The disease could come back again, so your health care provider will need to continue to see you and check your thyroid hormone levels.

If you have a treatment that destroys thyroid cells, you may need to take thyroid hormone the rest of your life.

What can I do to prevent Graves' disease?

There is no known way to prevent Graves' disease.

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