**Graves' disease**

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- Tests and diagnosis
- Complications
- Treatments and drugs
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**Treatments and drugs**

There's no treatment to stop your immune system from producing the antibodies that cause Graves' disease. Treatments to control the signs and symptoms of Graves' disease are designed to decrease the production of thyroxine or to block its action. Graves' disease treatment includes:

- **Beta blockers.** These medications, which include propranolol (Inderal), atenolol (Tenormin), metoprolol (Lopressor) and nadolol (Corgard), often relieve hyperthyroid signs and symptoms, such as a rapid heart rate, nervousness and tremors. These medications aren't a cure for Graves’ because your body will still produce too much thyroxine, but beta blockers block some of the action of the thyroid hormone. Beta blockers are often used in conjunction with other forms of treatment.

- **Anti-thyroid medications.** These prescription medications, including propylthiouracil and methimazole (Tapazole), prevent your thyroid from producing excessive amounts of hormones. Typically, treatment with anti-thyroid medications continues for at least a year. For some people with Graves' disease, treatment with anti-thyroid medications for one to two years causes a long-term remission of the disease. However, relapse is fairly common. These drugs are often used along with radioactive iodine treatment or surgery to help control signs and symptoms.

- **Radioactive iodine treatment.** To make thyroid hormone, your body needs iodine and uses whatever form of iodine is available in your blood. If you take radioactive iodine, the iodine collects in your thyroid gland, and over time the radioactivity destroys the overactive thyroid cells. This causes your thyroid gland to shrink, and problems lessen gradually, usually over several weeks to several months.

  Because this treatment causes thyroid activity to decline, you'll likely later need thyroxine treatment to supply your body with normal amounts of thyroid hormones. Treatment doesn't require a hospital stay.

  Radioactive iodine treatment may increase your risk of new or worsened symptoms of Graves’ ophthalmopathy. This side effect is usually mild and temporary, but radioactive iodine therapy may not be recommended if you already have moderate to severe eye problems. After radioactive iodine treatment, any iodine not taken up into the thyroid gland is excreted in your urine and saliva.

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Additional resources:

- [Graves' disease: Treatments and drugs](http://www.mayoclinic.com/health/graves-disease/DS00181/DSECTION=treatments-and-drugs)
Surgery. If you can't tolerate an anti-thyroid drug and don't want to have radioactive iodine therapy, surgery to remove your thyroid gland (thyroidectomy) is an option. After the surgery, you'll likely need thyroxine treatment to supply your body with normal amounts of thyroid hormones.

Risks of this surgery include potential damage to your vocal cords and your parathyroid glands, tiny glands located adjacent to your thyroid gland. Your parathyroid glands produce a hormone that controls the level of calcium in your blood. Complications are rare under the care of a surgeon experienced in thyroid surgery.

Treating Graves' ophthalmopathy
If Graves' disease affects your eyes (Graves' ophthalmopathy), you can manage mild symptoms by using artificial tears liberally during the day and lubricating gels at night. If your symptoms are more severe, your doctor may recommend:

- **Medications.** Treatment with prescription corticosteroids, such as prednisone, may diminish swelling behind your eyeballs.

- **Orbital decompression surgery.** In this surgery, your doctor removes the bone between your eye socket (orbit) and your sinuses — the air spaces next to the orbit. This gives your eyes room to move back to their original position. Possible complications include double vision and lip numbness.

- **Eye muscle surgery.** The inflammation caused by Graves' disease can affect your eye muscles, making them too short to allow the eyes to align properly. In eye muscle surgery, your doctor cuts the muscle where it attaches to your eyeball and then reattaches it farther back. Sometimes, more than one operation is necessary.

- **Prisms.** You may have double vision either because of Graves' disease or as a side effect of surgery for Graves' disease. Though they don't work for everyone, prisms in your glasses may correct your double vision.

Orbital radiotherapy
Orbital radiotherapy was once a common treatment for Graves' ophthalmopathy. Orbital radiotherapy uses targeted X-rays over the course of several days to destroy some of the tissue behind your eyes. However, some studies have suggested that this treatment provides no benefit for people who have mild to moderately severe Graves' ophthalmopathy.

Your doctor may recommend orbital radiotherapy if your eye problems are worsening and prescription corticosteroids alone aren't effective or well tolerated.

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- Beta blockers
- Prednisone and other corticosteroids: Balance the risks and benefits

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