



## GRAVES' DISEASE & THYROID FOUNDATION

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### Graves' Disease by R.L. Bucher, M.D.

Hyperthyroidism refers to a condition where too much thyroid hormone is found in the blood. This can be caused by many things. If a person takes thyroid hormone pills inappropriately or in too strong a dose, exogenous hyperthyroidism may result. Sometimes a nodule (usually a small, non-cancerous tumor) within the thyroid gland itself may start "doing its own thing" and produces excess amounts of thyroid hormone. This is called an autonomous nodule. The thyroid gland may develop many nodules and secrete too much hormone - toxic nodular goiter. Rarely, a tumor of the pituitary gland or other tumors may make thyroid stimulating hormone (TSH) which acts on the thyroid to cause excess hormone production.

Perhaps the most common cause of hyperthyroidism is Graves' disease. This is thought to be an autoimmune disease where the body's immune system mistakenly produces proteins called antibodies that interfere with normal thyroid gland operations to cause excess hormone production. These abnormal antibodies can also

react with proteins in tissues around the eyes to cause swelling with bulging of the eyes, loss of eye muscle control, double vision and, rarely, loss of vision. This eye condition is called exophthalmos. Sometimes antibodies are produced which work against TSH, the pituitary hormone, by stimulating receptors on thyroid cells to produce thyroid hormone. These anti-TSH hormones may also react with tissue cells in the skin over the shin bones causing painful swelling. This unusual event is called pretibial myxedema.

Exophthalmos and pretibial myxedema do not occur in everyone who develops Graves' disease, but other symptoms and signs that are the direct result of elevated levels of thyroid hormone itself are fairly common. These include nervousness, tremor, weight loss, heat intolerance, rapid heart rate, insomnia, irritability, muscle weakness and irregular menstrual periods. Younger people tend to have more of

these symptoms than those who are older.

Treatment of Graves' disease remains a problem. Medications are available to ease some of the symptoms caused by excess thyroid hormone. Other medications can stop the thyroid from producing hormone, but these can cause side effects and must be taken for at least 18 months, with U.S. remission rates currently at 20-30%. Surgery to remove most of the thyroid is effective but expensive, and like all surgical procedures, comes with certain risks.

Radioactive iodine is a less expensive alternative to surgery. Recently, it has been shown that taking cortisone with radioactive iodine may prevent the development of exophthalmos in some patients. Surgical techniques are available for treatment of severe cases of exophthalmos.

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