

PLASTIC **EYE** SURGERY ASSOCIATES, PLLC

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HYPERTHYROIDISM AND GRAVES' DISEASE

Hyperthyroidism refers to a condition where too much thyroid hormone is found in the blood. There are many different causes. If a person takes thyroid hormone pills inappropriately, or in too strong a dose, hyperthyroidism may result. Sometimes, a nodule (usually a small, noncancerous tumor) within the thyroid gland itself starts "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 hormones (TSH) which acts on the thyroid to cause excess hormone production. In each case, an attempt is made to determine the cause of hyperthyroidism.

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 operation and cause excess hormone production. These abnormal antibodies can also react with proteins and tissues around the eye and cause swelling with bulging forward of the eyes, loss of eye muscle control, double vision, and rarely loss of vision. This eye condition is called proptosis or exophthalmos.

Sometimes antibodies are produced that 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 shinbones causing painful swelling. This uncommon event is called "pretibial myxedema."

Exophthalmos and pretibial myxedema do not occur in everyone who develops hyperthyroidism or Graves' disease, but other symptoms and signs resulting from elevated levels of thyroid hormone 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 do those who are older.

There are many ways to treat Graves' disease. 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 sometimes disappointing cure rates. Surgery to remove most of the thyroid is effective, but expensive and, at times, risky; however, partial surgical resection sometimes causes less secondary hypothyroidism (underaction of the thyroid gland). Radioactive iodine is safer and less expensive than surgery.

Recently, it has been shown that taking cortisone with radioactive iodine or early orbital irradiation might prevent the development of proptosis or exophthalmos in some patients. Such early intervention, however, is experimental and not routinely advised. Surgical techniques are available for the treatment of severe cases of exophthalmos.

Research on the immune system and thyroid disease is being done more now than ever before. This includes studies being conducted in our office. Hopefully, new findings will lead to new ways to treat the many manifestations of Graves' disease caused by what we believe is a faulty immune system.

MYASTHENIA GRAVIS

Roughly 10% of people with Graves' disease also develop a muscle weakness problem called Myasthenia Gravis. In this condition, the nerve impulses that stimulate the muscles take much longer to "build up a charge" to stimulate the muscles again. The result is that the muscles may seem to get weaker throughout the day or with repeated use. A common manifestation of Myasthenia

Gravis is difficulty climbing as many stairs as was once possible, not because of shortness of breath, but because of leg weakness. If you think you might have Myasthenia Gravis, discuss it with your primary ophthalmologist, primary physician, endocrinologist, or neuro-ophthalmologist.