

Georgia Hormones P.C.

Robert P. Goldman, MD

3400-A Old Milton Pkwy, Suite 360, Alpharetta GA 30005 770-475-0077

www.GeorgiaHormones.com

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THYROID BALANCE

The Thyroid gland is a small fleshy structure found on the front of the neck just above the collarbone and below the Adam's apple. Thyroid hormone controls basic body temperature and the rate at which we burn food and use oxygen. Thyroid problems are more common in women than in men. Here is why: In women, Progesterone stimulates Thyroid function around the body. Testosterone also has a similar effect in men. Women only produce Progesterone when they ovulate, produce an egg. As women age, ovulation becomes less frequent. The transition to menopause marks the end of ovulation, and with it, the near total loss of progesterone. As men age, Testosterone gradually declines, but still remains in significant amounts even into old age. This makes women more vulnerable to symptoms of a weak thyroid.

There are two main thyroid hormones. T4 is the main product of the thyroid gland. It is called T4 because each molecule of hormone has four Iodine atoms. The thyroid gland also makes a small quantity of T3. Each molecule of T3 has only three Iodine atoms. T3 is much more powerful than T4 and is destroyed much more quickly. T3 only lasts a few hours; T4 lasts for days. The thyroid makes mostly T4, which acts as a reserve hormone supply. In many tissues throughout the body, an enzyme called **deiodinase** removes one of the Iodine atoms, turning T4 into T3 for local tissue use. Most of the T4 and T3 travel around the blood attached to a protein called **Thyroid Binding Globulin (TBG)**. The unattached hormone is free of the TBG and can also be measured as **Free T4** and **Free T3**. All of the hormone together, both the free and that bound to TBG, are measured as **Total T4** and **Total T3**.

What other thyroid blood tests are usually obtained? The pituitary gland produces **TSH** or **thyroid stimulating hormone**. As the name implies, this hormone stimulates the thyroid gland to increase production. A high TSH often means the thyroid is under active and needs stimulation, while a low TSH can mean the thyroid is overactive. There are many older indirect thyroid function tests that are less commonly used these days.

What are the symptoms of Too Little thyroid hormone? Tiredness; **feeling cold** when others are warm; weight gain; depression; forgetfulness, sometimes called "Brain Fog"; **hair loss**; constipation; dry, coarse hair; loss of the outsides of the eyebrows; puffy face and eyes; thickened neck, called a Goiter; slow heartbeat; dry skin; **heavy menstrual periods**; and brittle nails.

Can someone have Too Much thyroid hormone? The thyroid gland can also make too much T4. This is **Hyperthyroidism or Graves Disease**. Although these patients can also be tired and confused, many of their symptoms are the opposite of low thyroid. Some are: nervousness, irritability and difficulty sleeping; bulging eyes with an unblinking stare; rapid heartbeat; increased sweating; feeling hot all the time and heat intolerance; unexplained weight loss; scant menstrual periods; frequent bowel movements, warm moist hands; and a fine tremor of the fingers and hands.

What usually causes Hyperthyroidism? This is usually the result of the body producing antibodies that attack the Thyroid gland. These antibodies can be measured as **TPO antibodies**. This condition was named after a Japanese doctor and is called **Hashimoto's Thyroiditis**. After the Hyperthyroid initial part of the disease, it is common that the gland gets worn out and goes into a hypothyroid or low thyroid phase.

Are their other causes of thyroid disease? Thyroid cancer is not a rare disease. Enlargement of the thyroid gland and severe forms of hyper and hypothyroidism must be thoroughly worked up, usually by an Endocrinologist, to ensure that there is no cancer, and to treat the cancer if one is found. Hashimoto's Thyroiditis can be very complicated, with rising and falling hormone levels that must be closely followed and treated.

But my doctor tested my thyroid and said it was normal? Many doctors measure only TSH. Although TSH is said by many authorities to be sensitive to thyroid levels, I have found that frequently not to be the case. I measure how the Pituitary is directing the Thyroid gland, **and** the Thyroid gland response. Every day, I find women with normal or even low TSH, who have low levels of total and free thyroid hormones. **Hashimoto's Thyroiditis** is actually quite common, being present in about 17% of women over 35 years old. The blood test is available and I find new cases every week, mostly with normal TSH levels.

Could I be Low Thyroid and still have "normal" blood tests? Laboratories call "normal" all values within 95% of the population. That means that only the lowest 2½ % and highest 2½% of values are considered abnormal. After reviewing thyroid tests on thousands of women, I have found that many women in the **lower 20-30% of tests have symptoms of Hypothyroidism**. These borderline low thyroid patients and their symptoms are frequently ignored. Safe, inexpensive, small amounts of bioidentical thyroid supplements help these women feel much better. Some people have inherited a form of **deiodinase** that is only partially effective. Although their thyroid gland is making sufficient T4, it may not be converted to T3 in sufficient amounts when and where needed. Few physicians, even Endocrinologists, check Total T3 and Free T3. Sometimes women have normal TSH and T4 but are low on T3.

What if I have a low level of T3? T3 is available as a bio-identical hormone. Under the brand name of Cytomel, it is available in two doses. Freeze dried pork thyroid is 80% T4 and 20% T3. It is also available in a variety of doses by generic manufacturers and under the brand name of Armour Thyroid. A compounding pharmacy can also make capsules of bioidentical T3 or a combination of T3 and T4. Since T3 lasts only a few hours, it may be necessary to take several doses spread throughout the day.

I'm under a lot of stress and I feel tired all the time. Constant stress can cause the Adrenal gland to produce excessive amounts of the stress hormones Cortisol and Adrenalin. Although the exact mechanism is not clear, an excess level of these hormones causes deiodinase to start removing the wrong Iodine from T4. This results in the creation of **Reverse T3**, an inactive form of T3. Instead of increasing energy in these times of stress, this actually results in less real T3 being available, which causes a **relatively low thyroid** or hypothyroidism. In the past, most times of severe prolonged stress was associated with a shortage of food. Mildly Hypothyroid people burn fewer calories and use less food. This is a good thing in times of famine and mild hypothyroidism actually would be a survival advantage. Conserving your body's fat and protein may be life saving in a severe famine. **But there is no famine and people crave comfort food when under stress.** Those elevated stress hormones cause a craving for fat and carbohydrate. This causes weight gain, only made worse by the stress induced slow metabolism. **The result is a feeling of fatigue, hunger and weight gain.** The treatment here is complex because the problem is excess stress. Watching calorie intake, exercise and other stress reduction activities such as Yoga, meditation, Hindu breathing techniques or changing to a less stressful life style can all be of help. Antidepressant medications may also help.

Summary: Thyroid hormone affects every cell in the body. Many things affect the thyroid and its hormones. Achieving thyroid balance involves consideration of ovarian and adrenal hormones, stress levels, possible antibody attacks, and inheritance of enzymes with reduced levels of efficiency. The thyroid hormones themselves affect body temperature, energy, thinking, metabolic rate, weight, bowel function, menstrual cycles, fertility, hair growth and appearance. The possible symptoms from mild thyroid imbalance are so varied that they can often be overlooked or misdiagnosed, especially if the blood work-up is incomplete. Because of the loss of Progesterone production, as women enter the menopausal transition, they are especially susceptible to low thyroid symptoms. In many patients, very small amounts of thyroid supplementation can make a huge difference in achieving thyroid balance.