

The Natural Pharmacy Newsletter

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In The News

The Frustrations of Trying to Obtain Proper Thyroid Balance

Out of all the patients that I work with, the ones with thyroid disorders are the most difficult to properly adjust. I don't believe that there is anyone, including myself, that has a good handle on how to properly treat conditions of the thyroid. Can patients experience symptoms of low functioning thyroid have "normal" TSH levels? Is proper thyroid balance important in balancing sex hormones? Is iodine important to proper thyroid function? Can a low functioning thyroid contribute to weight gain? The answer is yes to all of these questions.

I've recently read two articles that have shed more light on the proper functioning of the thyroid gland. In the remainder of this article, I'd like to share some of this information with you.



The thyroid gland is located in the front of the neck and consists of two lobes weighing approximately 1 ounce. It is responsible for making thyroid hormones including triiodothyronine (T3) and thyroxine (T4). The thyroid hormones help regulate metabolism and how cells use and store energy. Thyroid hormones also play an important role in body temperature,

protein metabolism, muscle strength, skin moisture levels, menstrual cycles, weight, cholesterol levels, brain development, breathing, heart rate, mood, and nervous system function.

The pituitary gland controls thyroid hormones by releasing thyroid stimulating hormone (TSH). When blood levels of T4 are low, the pituitary releases more TSH to stimulate the thyroid to make more T4. Disorders of the thyroid occur in approximately 5% of women and 0.5% of men and as many 10% of the population are unaware that they have a thyroid disorder.

If T4 levels are less than optimal, the reason for suboptimal production should be determined prior to starting therapy. Reasons for low T4 production include: genetic defects, autoimmune reactions, toxicity, insufficient substances to make T4, and stress.

It takes sufficient amounts of iodine and tyrosine to make T4. Areas of the country where soil is depleted of minerals such as inland states, may have more individuals low functioning thyroid due to low amounts of available iodine. Bromide, which is used in the making of bread, competes with iodine at cellular binding sites. Increasing iodine intake may cause the more toxic bromide to be excreted into the urine and facilitate the production of T4.

If thyroid hormone is less than optimal, replacement may be required. T4 (Synthroid or l-thyroxine) is the

replacement of choice by the Endocrine Society. This choice was made, however, prior to discovery that T4 is converted to the more active hormone T3. This therapy assumes that patients properly convert T4 to T3 which is not always the case. A patient can have "normal" and even optimal TSH and T4 levels and still experience symptoms of a low functioning thyroid. This condition leads to a functional hypothyroid condition-labs look fine-symptoms persist. This condition can occur when stress increases production of reverse T3 (rT3) from T4 at the expense of T3. T3 is more potent than rT3 and can result in a patient experiencing many of the symptoms associated with low functioning thyroid. If this condition is due to excessive stress, treatment should be centered around shifting the production of T3 from rT3 by adding essential nutrients like zinc and selenium. It should also be addressed with lifestyle changes-mild exercise.

When thyroid replacement is initiated, it would seem to make sense to use a combination T4/T3 product and not entirely depend on the body to convert T4 to the more active T3. Thyroid, USP (Armour Thyroid, WestThroid, NatureThroid, or compounded Thyroid, USP) would seem to be a more appropriate choice than T4 (Synthroid, l-thyroxine) alone.

Low vitamin D levels can also lead to symptoms that mimic a low functioning thyroid. Vitamin D levels may have to be in the 50-70 ng/mL range for optimal thyroid receptor response. The normal range for vitamin D is considered to be 32-100 ng/mL For patient north of the Mason-Dixon line or those that regularly use sun screens, low vitamin D levels may be a consideration.

Iron deficiency, assessed by measuring serum ferritin, can result in hypothyroidism. If ferritin is low, iron replacement using ferrous gluconate, chelated iron, or ferrous glycinate may be beneficial. This may be a consideration particularly in women that tend to be anemic due to heavy menses.

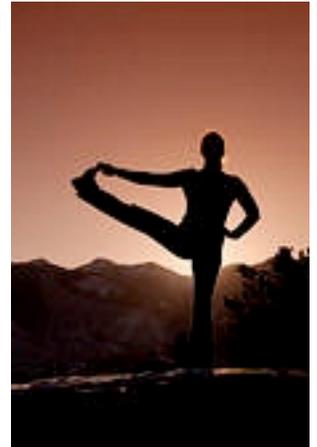
Hashimoto's thyroiditis is an autoimmune disease that affects approximately 14 million Americans. Women are affected seven times more than men and the most common age at diagnosis is between the ages 40-60. Individuals that have other autoimmune

disorders are more likely to acquire Hashimoto's thyroiditis. This disease occurs when the body makes antibodies that attack the thyroid gland resulting in decreased levels of thyroid hormone. The exact cause of this disease is unknown but genetics, stress, infection, iodine intake, and medications may be involved.

Grave's disease is another autoimmune thyroid disorder that results in increased thyroid function (hyperthyroidism). Grave's disease is the most common cause of hyperthyroidism and affects approximately 2-3% of the population. This condition is considerably more common in women than men. The symptoms of this thyroid disease include: fatigue, muscle weakness, anxiety, irritability, weight loss, hand tremors, rapid and irregular heart beat, and menstrual irregularity. Grave's disease may also cause protrusion of the eye, a condition called exophthalmos. Although the exact cause of Grave's disease is unknown, it is believed that genetics and environmental factors are involved. There is also an increased risk in those individuals with a family history of the disease, those that smoke, are pregnant, or are under stress.

L-Carnitine may be useful in both hyper and hypothyroid patients. Reduced levels of carnitine have been demonstrated in both hyper and hypothyroid patients. This may contribute to the muscle weakness noted with these diseases. Hyperthyroid patients also excrete more carnitine than the control patients and these levels normalize when thyroid function is treated. Carnitine seems to lessen the symptoms of hyperthyroidism and may be useful in treating thyroid storm-a severe hyperthyroid condition.

As autoimmune thyroid disease has been increasing, iodine intake in the U.S. has been decreasing. In one study, the use of iodine was studied in Hashimoto's thyroiditis patients. The group that used iodine supplementation had a significantly lowered level of



anti-thyroglobulin antibodies. The iodine supplement we recommend is Iodoral which contains 5mg. of elemental iodine and 7.5mg. of potassium iodide. A 24 hour urine collection after a loading dose of iodine may be used to determine the iodine status in patients.

In this article we have examined some of the factors involved in hyper and hypothyroid conditions. As you can see, the thyroid is essential to many of the body's functions.. When we take genetic uniqueness, characteristics of the thyroid that we have yet to discover, and the interplay between other parts of the endocrine system, it becomes easy to see why diseases of the thyroid are difficult to manage. Various complementary interventions such as l-carnitine, vitamin D, and iodine may be useful in treatment. When considering traditional treatment it may also be beneficial to consider medications that contain a combination of T4 and T3 rather than T3 alone.

Jim Paoletti, R.Ph., Hypothyroidism, Functional Hypothyroidism, and Functional Metabolism, International Journal of Compounding, Vol. 12, No. 6, November/December 2008

Nieske Zabriskie, ND, Autoimmune Disorders: Supporting Thyroid Function, Vitamin Research News, Vol. 24, No. 5, May 2010

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