

*By Juliana Mazzeo, M.S., CDN, Medical Nutritionist*

[www.nymedicalnutrition.com](http://www.nymedicalnutrition.com)

**When you are not feeling like yourself, and you can't find the reason why, check out your thyroid. The thyroid gland controls so many of the body's functions – and if it's not working right, it can be corrected.**

The thyroid is one of the principal glands in the body's endocrine system. It is located at the base of the neck and functions as the accelerator for all metabolic reactions in the body. Its hormone secretions, T3 [triiodothyronine] and T4 [thyroxine], affect metabolism in every cell of the body, determining cellular differentiation, growth, and metabolism. The basic mechanism for controlling this system is activity conducted between the hypothalamus, an endocrine organ in the brain, and the pituitary gland, also in the brain. In this process, thyroid releasing hormones [TRH] and [TSH] thyroid stimulating hormones send signals so as to maintain the appropriate level of thyroid hormones [T3 and T4] in the body's cells. When the thyroid output is low, the pituitary will respond by increasing TSH levels; the reverse holds true when thyroid output is high.

### **Hypothyroidism**

The diseases of the thyroid are chronic conditions of a too low or too high level of thyroid hormones in the cells. Low output is most common and it is distinguished as primary, secondary and tertiary hypothyroidism. When the thyroid gland cannot produce enough hormones, it is called primary hypothyroidism. When the reason for the low output is a malfunction of the hypothalamus-pituitary process, it is considered secondary and tertiary hypothyroidism. Primary hypothyroidism is

easily detected by standard lab tests measuring TSH and T4 levels. However, many individuals have subtle and clinically significant conditions not detected by blood tests. A healthy functioning endocrine system is dependent not only on the output of hormone secretions by the glands, but also on the capacity of the cells to receive and absorb hormones. There is also a problem of the "conversion" of thyroxine T4 to T3 in many tissues. This conversion is not detected on a blood test. The conditions are known by various names: Wilson's Syndrome, or low T3 syndrome. In recent years, there has been an increase in thyroiditis or *Hashimoto* disease, a condition in which the body produces antibodies that attack the thyroid gland, thus reducing hormone output. This is known as an autoimmune disease whereby the individual has an actual allergy to his/her own tissues. The constant attack by the immune system on the thyroid gland prevents the healing and function of the thyroid. It is believed that many environmental toxins can attack the delicate thyroid. Some of these are the halogens: bromide, chloride and fluoride, found in everyday food and household products. General life stresses and traumas such as accidents, surgery, menopause, and childbirth also negatively affect the thyroid gland. A low thyroid condition often co-exists with other illnesses, sometimes partly causing them, sometimes, caused by them. A good example of this is rheumatoid arthritis. Even certain cancers can be attributed to low thyroid function. This may happen when the liver and lymphatic systems are weakened and allow excess hormones into cells, particularly breast and ovarian tissue. Other conditions aggravated by low thyroid function are anemia, Candida, malnutrition due to malabsorption, and depression due to a slowed down metabolism.

## What Are Some Of The Symptoms Associated With Low Thyroid Function?

Fatigue, hair loss, low cognitive function, coldness/low body temperature [ $<97.6^{\circ}\text{F}$  morning temps taken over several days], constipation, ankle swelling, hair loss in outer part of eyebrows, weight gain, muscle pain, PMS, elevated cholesterol, elevated homocysteine, eczema, dizziness upon standing, swollen eyelids and face, under eye bags, slow pulse rate, listless demeanor, hoarseness, loss of voice, low blood pressure and high diastolic blood pressure, slowed mental function, low sex drive, anxiety, migraines and sleep disturbances to name a few.

## Diagnosis

Diagnosis of thyroid disease is done by measuring the levels of thyroid hormones in the blood or measuring the elements involved in the processes, which control the secretions of thyroid hormones. TSH and T4 levels are very poor measures of optimal thyroid function. The most accurate parameters of optimal thyroid function are Free T3 and Free T4. The reason being is that all hormones are protein bound, thus the free form gives us an accurate value of the amount of hormone that is available to the tissues, as opposed to the bound fractions. These ranges should be in the upper 1/3 level. However, if all these parameters fall within optimal ranges, it is best to check for thyroid antibodies such as Thyroid Peroxidase AB and Thyroglobulin AB to explain the patient's symptoms. *In a January 2001 press release, the American Endocrinology Association stated that a TSH of 3 or greater is considered hypothyroid.* Unfortunately, the old TSH value of 5.5 being the upper limit is still in use by laboratories. This means that most patients will be under treated and under diagnosed. Psychiatrists have shown that a low Free T3 is indicative of depression. Perhaps what patients are really lacking is thyroid medication, not anti-depressants. It is bewildering how easily doctors prescribe anti-depressants like they were candy, yet are so resistant to prescribe

thyroid hormone, which is naturally found in our bodies.

## Treatment

Standard treatment for hypothyroidism is **Synthroid® [generic name is Thyroxine], which is synthetic T4 and has never been approved by the FDA.** T4 is the inactive hormone and in order for this medication to work, it must convert to T3 at the cellular level. But this conversion rarely occurs optimally in the majority of people especially if the patient is deficient in Vitamin A [not beta carotene], iodine, selenium, Vitamin D and zinc. A deficiency of any one of these nutrients will inhibit the conversion of T4 to T3. This scenario translates to people being on Synthroid for decades and constantly complaining of “just not feeling right.” That is because their TSH may look “normal” but they are poor converters, and thus continue feeling poorly despite their *perfect* blood results.

According to a study in the *New England Journal of Medicine* [February 11, 1999], patients with hypothyroidism showed better improvements in mood and neuropsychological function when they received Armour® Thyroid rather than Synthroid® [Thyroxine]. **The article states that not all tissues that require thyroid hormone are equally able to convert Thyroxine to triiodothyronine [T3]. Armour Thyroid contains T3, T4, plus some T1 and T2, and therefore, no conversion is required.** Of the 17 parameters they looked at in the study, patients scored better on the Armour® Thyroid. Despite studies like these in mainstream medical journals, most physicians still only use Synthroid® exclusively and are so adamantly opposed to using Armour® Thyroid. For fifty years, Armour® was the only available treatment for hypothyroidism, because it contained both T4 and T3 and did not cause osteoporosis due to the protective T1 and T2 that is naturally found in human thyroid. Unlike Synthroid®, which lacks T1 and T2 and eventually causes osteoporosis. Another

treatment is synthetic T3, Cytomel® [Thyronine]. Dosages range from 5, 12.5 and 25 micro grams. Sometimes, Cytomel® is added to Synthroid®, which improves the patient's overall symptoms. Other more natural thyroid preparations that are free of binders, fillers cornstarch and preservatives are commonly obtained from compounding pharmacies and they include: Naturethroid®, Westhroid®, and Biothroid®. It is always best to use name brands because generic thyroid medications do not always have the same consistent potency.

## **Nutrients**

There are various nutrients that can be used to improve thyroid function. These include ample amounts of real vitamin A [Retinol], not from beta-carotene. Many individuals, including diabetics, children and the elderly cannot convert beta-carotene to vitamin A. True vitamin A comes exclusively from animal products [egg-yolk, butter, whole milk, liver and cod-liver oil]. Zinc, selenium and ample amounts of iodine are required for optimal thyroid function. Thyrophin PMG® by Standard Process is an excellent nutrient that supports thyroid function. Herbs such as Ashwaganda and rosemary, an excellent antioxidant that provides carnosic acid that is required at the binding sites where receptors combine and read the message of the DNA [the genetic material that codes the cell's function]. All thyroid patients need to be monitored and their particular symptoms considered before a treatment is administered.

## **Dosage and Length of Therapy**

Therapy is permanent if the patient has had their thyroid removed, thyroidectomy. For other conditions, length of therapy varies. Low dosages may work fine initially, but generally dosages will need to be increased. It is wise to begin slowly: .025mcg of Thyroxine, 30 mg of Armour Thyroid® or Cytomel® in increments of 5, 12.5 and 25 micro grams. Timing is very important. ***Thyroid medication must be taken in the morning on an empty stomach away from***

***food, fiber and other nutrients. Patient must wait one hour before eating or drinking any beverage, except water.*** When taking Armour® Thyroid, the dosage is twice per day, as T3 has a short half-life and thus needs to be taken again approximately 12 hours later to maintain a steady level of T3 in the body.

## **Interactions with Other Medications**

Coumadin® works better with thyroid medication. Lithium adversely affects thyroid function. HRT Premarin® [hormone replacement therapy, derived from the urine of a pregnant mare] increases estrogen dominance. It causes an increase in Thyroxin binding globulin, thereby decreasing the amount of thyroid available to the tissues. Oral contraceptives have a similar effect on thyroid function, as does pregnancy. That is why it is so important to monitor thyroid function during pregnancy. A low thyroid function in the mother-to-be has been shown to affect cognitive function in the infant. There are studies showing a link between autism and low thyroid function in the mother. Antidepressants such as the SSRIs [Selective Serotonin Reuptake Inhibitors] [Zoloft®, Prozac® etc.] all contain fluoride in their molecular structure. Fluoride competes with iodine uptake at the binding sites, therefore creating low thyroid function. This is one of the proposed mechanisms of how anti-depressants cause weight gain.

## **Common Foods That Depress Thyroid Function.**

Soy products i.e. Soy milk, soy formula, soy cheese, tofu, soy protein, texturized vegetable protein, meat substitutes made of soy etc. is the number one culprit of inhibiting thyroid function. Soy binds thyroid hormones making less available to the tissues. Soy is one of the most processed “foods” and should not even be given such a label. In addition, phytates which are found in all grains and cruciferous vegetables such as broccoli, Brussels sprouts, kale, mustard greens, cassava and peanuts all depress thyroid function. These foods bind iodine causing the thyroid to swell, hence the

term goiter. To ensure thyroid health and prevent thyroid problems, it is best to avoid soy altogether and to eat the other goitrogens containing foods cooked and in moderation.

### **A Note About Hyperthyroidism**

Too much thyroid hormone is also a disorder, although not as common. Its symptoms are palpitations, excess sweating, and weight loss, anxiety and in extreme cases, exophthalmia, a condition characterized by bulging eyes. Mainstream treatment for this condition is Tapazole® or radioactive therapy, which is quite a barbaric procedure when other options are available. This condition may be addressed nutritionally with some of the mentioned vegetables as well as Thyrophin PMG® by Standard Process, which assists the thyroid in achieving balance. There is also a very rare condition known as thyrotoxicosis, whereby the patient is both hyper and hypo at the same time. This is referred to as “tired but wired” - the patient is tired but cannot sleep.

In conclusion, the best way to recognize low thyroid is through a combined assessment of family history, and physical symptoms. Where there is a suspicion of low thyroid, we encourage patients to do a seven-day body temperature; a method developed by Dr. Broda Barnes, M.D. an expert in thyroid related conditions. An axillary temperature is taken first thing in the morning before arising out of bed. In menstruating females, it is best to take temperatures on the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> day of menses, not during ovulation, as temperatures are always higher during that time.

Make a list of all your symptoms and share them with your physician. You may want to locate a physician who is trained in treating the person as a “whole”, and will implement diet, nutritional supplements, lifestyle modifications and the right medications to treat/manage your condition. Your health is in your hands and it is empowering to know you have a say in your medical treatment.

### **Statistics**

*10% if the population has low thyroid function.*

*One of out of four menopausal women has low thyroid function.*

*20 million people are on thyroid medications.*

*Synthroid® [synthetic hormone] is one of the largest selling medications, AND it has never been approved by the FDA for treatment of thyroid disease.*

**Typically, low thyroid, and sub-clinical thyroid function is frequently undiagnosed, largely unsuspected and often left untreated. When treated by mainstream medical doctors who are confined to the restrictions and guidelines of HMOs, it is rarely treated optimally.**