

Health Matters

Great Smokies Medical Center of Asheville

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Hypothyroidism: Lacking in Metabolic Fire

The thyroid is a butterfly-shaped gland that is situated below and behind the larynx (Adam's apple) and in front of the windpipe (trachea). The pituitary gland produces thyroid stimulating hormone (TSH) that directs the thyroid gland to make thyroid hormone.

Thyroid hormone regulates the metabolic rate, the efficiency with which all the physical and chemical processes in the body transform foods into energy for both cellular building (anabolic) and cellular breaking down (catabolic) processes. If you were a car, your metabolic rate could be described as the gear you are in or your rpm's.

Deficiency of thyroid hormone is called hypothyroidism and it ranges from mild to severe. Inasmuch as thyroid hormone affects every organ, tissue, and cell in the body, disturbances in thyroid function result in many and varied symptoms. Some of the symptoms of hypothyroidism are the result of the build up of wastes in body tissues from sluggish metabolism.



Some hypothyroidism is called Hashimoto's thyroiditis, an autoimmune reaction caused by the body's antibodies attacking the thyroid gland.

Low thyroid function can also occur as a result of treatments for hyperthyroidism or thyroid cancer, including radioactive iodine and surgical removal of the thyroid gland.

Aging and toxicity, notably the toxicity from mercury, dioxin, Candida (yeast) toxins, and alcohol can also contribute. The use of some drugs, including lithium and amiodarone, has been associated with hypothyroidism. A pituitary problem can also cause thyroid imbalances. Diabetics have a higher incidence of hypothyroidism than the general population. Similarly, if you have hardening of the arteries or a recent heart attack, you may well be deficient in thyroid hormone. Because many of the symptoms of low thyroid hormone levels are of a general nature (fatigue, obesity, constipation, dry skin), the diagnosis can be overlooked,

often for years. If a person is deficient in thyroid hormone, the symptoms of deficiency will not respond satisfactorily to anything but appropriate replacement of the deficient hormone.

Subclinical hypothyroidism is a condition that occurs when many of the signs and symptoms of deficient thyroid hormone (see listing in this newsletter) are present, but the usual laboratory measurements of thyroid hormone are within the normal range. Special thyroid laboratory blood tests will often detect thyroid deficiencies in these individuals. Such patients may function or feel better if they take small doses of thyroid hormone. We are descendants of people who survived, in part, because the metabolic rate can be lowered during famines, allowing survival on fewer calories. Any stress, not just famine, can result in this lowering of the metabolic rate to conserve calories. And that response can persist even after the stress has disappeared. This response contributes to the obesity that is characteristic of hypothyroidism. For more information on the diagnosis and treatment of hypothyroidism, we suggest: [Hypothyroidism: The Unsuspected Illness](#); Barnes, Broda O., M.D. and Galton, Lawrence; and [Wilson's Syndrome The Miracle of Feeling Well](#); E. Denis Wilson, M.D.

The Signs and Symptoms of Hypothyroidism

The following symptoms are associated with hypothyroidism:

- Low body temperature
- Slow to waken in the morning
- Weight gain and difficulty losing weight
- Depressed mood
- Poor mental function
- Constipation
- Difficulty feeling warm, especially hands and feet
- Dry skin
- Orange discoloration of palms and soles
- Goiter
- Menstrual cycles irregularities
- Thinning or disappearance of outer third of eyebrows
- Edema (swelling) of face, tongue, ankles, and fingers
- Dry, lusterless, coarse, brittle hair
- Dry, brittle nails
- Migraines
- Hair loss
- Slow or absent reflexes on physical exam
- Personal history of high birth weight or family history of tuberculosis
- Hoarseness
- New onset of snoring
- Increased cholesterol levels

All content in this newsletter is intended to be informational and is not to be taken as medical advice or to replace medical care.

Health Matters Online

In response to your requests, Health Matters can now be viewed on our website www.gsmcweb.com, effective immediately. All past issues are archived and are available for viewing. Thanks for the many positive comments about our newsletter, Health Matters!

A Time-Honored Tradition in Treating Hypothyroidism by Dr. Wilson

The road one travels while treating hypothyroidism based on laboratory tests is strewn with potholes.

Every doctor who treats hypothyroidism sees discrepancy when comparing blood test results with how the patient reports feeling. This failure to find an explanation for a patient's symptoms may result in the physician determining that the patient has a psychosomatic illness.

Years ago, before blood tests and synthetic drugs were available, doctors relied on patients' histories and physical exams to diagnose and treat them. If patients presented with symptoms and

physical findings that fit the clinical picture of hypothyroidism, they would

"It may seem incredible that scientists can sit quietly on earth and follow the activity of the heart of a man walking on the moon and yet they have had so much difficulty in measuring the amount of thyroid hormone necessary for health and in developing effective and reliable tests to determine when thyroid function is inadequate."

Broda Barnes, M. D.

then be prescribed the only agent available at that time, whole glandular thyroid from pig (porcine) thyroid. This preparation, known as U. S. Armour Thyroid, contains mostly T4 as well as some T3. A small but growing group of doctors have continued this tradition of listening

to patients' symptoms while carefully taking their history and performing a physical examination in addition to using blood tests. They have continued to treat hypothyroidism with natural, whole, desiccated glandular thyroid.

This natural time-tested approach more often results in improvement in mood and mental functioning—symptoms often not improved by the more commonly used prescription drugs.

An article in the [New England Journal of Medicine](#) reported research suggesting Synthroid use resulted in no improvement in 17 parameters measuring memory, mood, language, and learning. The use of Armour thyroid however, resulted in improvement in 6 of the 17 parameters. (*NEJM 1999;340:424-429, 469-470.*)

Diet and Thyroid

Kelp is seaweed and is rich in nutrients, including the mineral iodine, a necessary cofactor for the production of thyroid hormone. If you are not iodine sensitive, consider including seaweed in your diet.

Coconut oil is rich in medium chain fatty acids (MCFAs), also known as medium chain triglycerides (MCTs). It offers benefits to sufferers of hypothyroidism by increasing the metabolism as well as promoting weight loss.

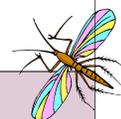
Food allergy is thought to play a role in hypothyroidism, especially those with autoimmune disorders. Food sensitivities are suspected to interfere with endocrine function through antibody formation.

Laboratory Testing of Hypothyroidism



Doctors have traditionally measured blood levels of thyroid stimulating hormone (TSH), T3 Uptake, Total T4 and Total T7 to both diagnose thyroid imbalances and monitor the effectiveness of thyroid hormone therapy regimens. The problem with this laboratory assessment is that most of the total T3 and T4 are bound to proteins that render them unavailable for use by the body. Alternatively, doctors can measure Free T3 and Free T4 that reveal the parts of Total T3 and Total T4 that are not bound to proteins and are thus biologically active. These more sensitive tests enable a doctor to more accurately and safely

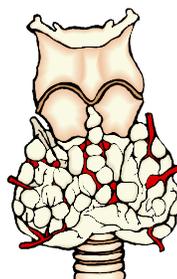
customize dosing of T3 and T4 to optimize functioning of the patient. We recommend having a TSH, Free T3, Free T4, and thyroid antibodies drawn as baseline to test for hypothyroidism. To monitor thyroid replacement therapy in a person taking thyroid hormone, the doctor can usually monitor with a simple free T3 or T4. The time of day that blood specimens are drawn is important. Have your thyroid blood level tests drawn about eight hours after taking your morning dose of thyroid upon waking and while fasting. That is about 3:00 p.m. to 4:00 p.m. for most people.



The Medical Treatment of Hypothyroidism by Dr. Wright

Hypothyroidism is treated by replacing thyroid hormone in pill form. Most physicians use synthetic, bio-identical T4 (Synthroid, Levoxyl, or Unithroid). T4, so named because each molecule contains four molecules of iodine, is a mostly inactive precursor hormone that is made in the thyroid gland. Before it can be useful in the body, T4 has to be converted into triiodothyronine (T3), the biologically active form of the hormone that contains three iodine molecules. The conversion of T4 to T3 occurs outside of the thyroid gland in the body's cells. For several reasons, including deficiency of zinc, copper, selenium, or iron, and excess cortisol (the adrenal stress hormone), many people can't efficiently convert T4

to T3. For such a person, taking Synthroid, Levoxyl, or Unithroid will not likely result in improvement, as the body cannot convert synthetic T4 to T3 any better than it can convert its own natural T4 to T3. Unfortunately, in this situation, the blood tests that doctors routinely use to check thyroid status may be normal, which could cause a physician to miss the diagnosis. The patient all too often ends up with the symptoms of hypothyroidism and the doctor's bill. Cytomel is a synthetic prescription form of T3, while Thyrolar contains both synthetic T4 and T3. Because *deficient* cortisol results in a



The Thyroid Gland

speeding up of the conversion of the inactive T4 thyroid hormone to the active T3 form, failing to treat adrenal fatigue either before or at the same time hypothyroidism is being treated can result in the patient feeling jittery or anxious, and then wrongly thinking thyroid is bad for them. What may really need addressing is the cortisol deficiency.

Because symptoms of hypothyroidism are also symptoms of other general syndromes and specific diseases and doses required to treat an individual can change from time to time, I recommend regular ongoing monitoring of thyroid blood levels.