



Hypothyroid

UNDERSTANDING THE MISUNDERSTOOD DISEASE

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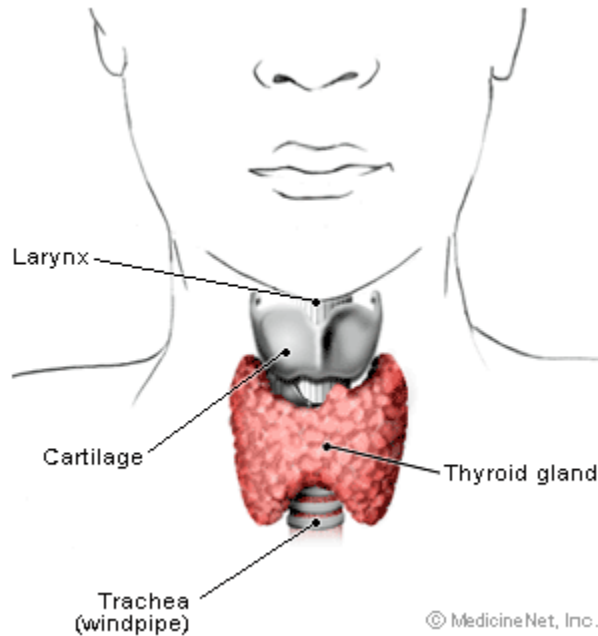
Thyroid Basics

Thyroid is a small butterfly-shaped gland that wraps around the windpipe. The cells inside the thyroid takes in the iodine, obtained through food, iodized salt, or supplements, and combines that iodine with the amino acid tyrosine. The thyroid then converts this into the hormones thyroid hormones called T3 and T4.

Once released by the thyroid, the T3 and T4 travel through the bloodstream. Under normal conditions, **80 percent of thyroid hormones are in the form of and T4 and 20 percent in the form of T3. T3 is the biologically more active and is several times stronger than T4.** The conversion of T4 to T3 takes place both inside the thyroid as well as in some organs other than the thyroid, including the hypothalamus, a part of your brain.

The thyroid gland acts like the body's barometer. Its main function is to help cells convert oxygen and calories into energy. It regulates:

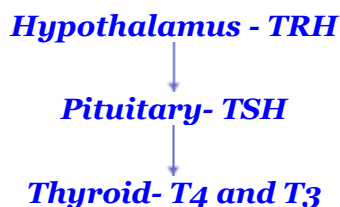
- Heart rate
- Blood pressure
- Body temperature
- Metabolism
- Growth



Thyroid hormone regulation- the chain of command

The thyroid itself is regulated by another gland that is located in the brain, called the pituitary. In turn, the pituitary is regulated in part by the thyroid (via a "feedback" effect of thyroid hormone on the pituitary gland) and by another gland called the hypothalamus.

The hypothalamus releases a hormone called thyrotropin releasing hormone (TRH), which sends a signal to the pituitary to release thyroid stimulating hormone (TSH). In turn, TSH sends a signal to the thyroid to release thyroid hormones. If a disruption occurs at any of these levels, a defect in thyroid hormone production may result in a deficiency of thyroid hormone (hypothyroidism).



The rate of thyroid hormone production is controlled by the pituitary gland. If there is an insufficient amount of thyroid hormone circulating in the body to allow for normal functioning, the release of TSH is increased by the pituitary gland in an attempt to stimulate more thyroid hormone production. In contrast, when there is an excessive amount of circulating thyroid hormone, TSH levels fall as the pituitary attempts to decrease the production of thyroid hormone. In persons with hypothyroidism, there is a persistent low level of circulating thyroid hormones.

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Symptoms of Low Thyroid



Being one of the master regulators of body metabolism, symptoms of low thyroid function generate a global response. Symptoms include:

- **Fatigue and low energy, with need for daytime nap.**
 - **Depressed, down, or sad.**
- **Skin that becomes dry, scaly, rough, and cold.**
- **Hair becomes coarse, brittle, and grow slow.**
 - **Excessive unexplained hair loss.**
- **Sensitivity to cold in a room when others are warm.**
 - **Difficulty in sweating despite hot weather.**
- **Constipation that is resistant to magnesium supplementation.**
 - **Difficulty in losing weight.**
 - **Unexplained weight gain.**
- **High cholesterol resistant to cholesterol lowering drugs.**

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Diagnosis: Standard Laboratory Test

A popular way of diagnosing hypothyroidism is using **basal body temperature**. Dr. Broda Barnes, M.D, popularized this test. While using basal body temperature can be better than using the standard thyroid function test, it comes with certain disadvantages, including:

- Falsely elevated temperature when sleeping under eclectic blanket
- Poor compliance
- Accurate thermometer required

Most clinicians rely on blood test instead. **The traditional laboratory tests used to diagnose hypothyroidism are:**

- Total T4
- Total T3 and Free T3
- Thyroid Peroxidase Antibody
- TSH (Thyroid Stimulating Hormone)

Due to the complexity and inherent weakness of the traditional laboratory tests, **there is widespread difficulty in their interpretation.**

The key test is TSH. The lower the amount of thyroid hormone in the body, the more TSH will be produced and secreted by the pituitary to stimulate the thyroid gland to put out thyroid hormones. **A low TSH signals enough TSH on board, while a high TSH signals a deficiency of TSH in the body.**

For most traditional laboratories, the upper limits of normal TSH level is under 4.0 to 4.5. While those who have TSH higher than 4.5 is highly likely to have hypothyroidism, many more with TSH under 4.5 have sub-clinical hypothyroidism or under-active thyroid.. Many with a TSH under 4.0 are in fact symptomatic and may well be hypothyroid. In other words, **the traditions normal range is far too insensitive to detect hypothyroidism,** especially those in the sub-clinical stage of the disease with symptoms.

The myth that an elevated TSH level (the upper limits of normal range by normal laboratory reference range is under 4.5) is required, as prerequisite for diagnosis of hypothyroidism must be dispelled. There is little doubt that an elevated TSH signifies an under active thyroid as the pituitary gland secretes TSH in response to a low thyroid hormone level. The real question is - how high a TSH is considered high?



New Diagnostic Reference Standard for TSH

Increasingly, innovative doctors are also viewing high-normal or normal TSH levels (by traditional standards) as possible evidence of low-level hypothyroidism, especially if symptoms of hypothyroidism are present. .

Many patients with TSH level of 2.0 (not 4.5) or more have classic symptoms and signs of hypothyroidism. Even though their TSH is considered "normal" by traditional standards, many are suffering from under active thyroid or sub-clinical hypothyroidism. If your routine blood work comes back with a TSH of 2.0 and you have symptoms of hypothyroidism, ask your doctor! Chances are your thyroid gland is not working properly.

TSH alone, however, is not an accurate test of all forms of hypothyroidism but only primary hypothyroidism. Additional tests like Free T3 (FT3) and Free T4 (FT4) are required. Some doctors also test for elevated thyroid antibodies in addition to FT3 and FT4. Many patients, especially women with elevated antibodies are in the process of developing autoimmune thyroid disease. Early detection is important to effect appropriate treatment. Even with normal TSH levels, the majority of symptomatic women with elevated antibodies, low FT3 and low FT4 require thyroid hormone replacement to feel well.

Free T3 and Free T4

Thyroid gland produces four thyroid hormones called T1, T2, T3, and T4. The number indicates the number of iodine molecules attached to the molecule. T4 is what synthetic thyroid such as Synthroid has. T4 is a hormone precursor and is converted into T3, the form that performs most of the thyroid function in the body. Thinking that synthetic thyroid provides steady hormone levels, it is widely prescribed by doctors. Easily overlooked is the fact that many people cannot convert the T4 to T3. This is easily confirmed by measure free hormone level.

Free T3 and Free T4 are the only accurate measurement of the actual active thyroid hormone levels in the body. This is the hormone that is actually free and exerting effect on the cells. These are the thyroid hormones that count.

New Laboratory Reference of Hypothyroidism

- 1. If your FT4 is less than 0.7 (normal 0.7 to 2.0).**
- 2. If FT3 is less than 2.3 (normal 2.3 to 4.2).**
- 3. If your TSH is above 2.0**





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Treatment

The traditional standard treatment for hypothyroidism for decades is synthetic T4 hormone levothyroxine, such as Levoxyl and Synthroid.

Amour Thyroid contains natural thyroid hormones. Natural hormones also have T1 and T2 in addition to T3 and T4. Armour thyroid is a natural desiccated thyroid. It was the only available treatment for hypothyroidism for some 50 years. Because of concern about their variable potency, these extracts have been considered obsolete for some time.

Armour thyroid needs to be taken twice a day to provide the adequate and consistent blood level of T3, which is shorter than that of T4. Repeat blood test should be performed after six weeks and dosage adjusted accordingly to maintain TSH under 0.5. Free T3 and Free T4 should be maintained above the median but below the upper end of the laboratory normal reference range.

Optimum FT3 and FT4 anti-aging range for healthy young adults is towards the top end of normal range, while for the elderly is towards the middle of normal range. Once TSH, free T3 and free T4 targets are reached, annual checkup is warranted. Overweight and thyroid resistant patients might need to have their dosage increased.

While synthetic thyroid hormone made in the laboratory by drug companies usually contain T3 (Cytomel) and T4 (levothyroxine) or combinations (Thyrolar) of these two. **Patients with hypothyroidism show greater improvements in mood and brain function if they receive treatment Armour thyroid rather than Synthroid (thyroxin).** Research reported in the New England Journal of Medicine in February of 1999 found that a majority of patients, however, might feel better on a combination of hormones such as combination of T3 and T4 instead of single T4 alone.

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Diet for the thyroid

1. Eliminate Refined Sugars:

Use **RAW HONEY, BLACK STRAP MOLASSES, AND MAPLE SYRUP.**
Natural sweeteners provide nutrients that help aid in thyroid functioning

2. Eliminate Trans-Fatty Acids:

“Good Fats”- Needed for adequate thyroid functioning:

Monounsaturated Fats (ie Olive Oils)

PolyUnsaturated Fats (ie Flaxseed oil, Fish Oil, Vegetable Oils)

**“Bad Fats”- Eating Bad Fats causes nutritional deficiencies in
Vitamins A,D,E,K which disrupts the homeostasis of thyroid balance**

Saturated Fats (ie Animal Fats, Butter, Coconut Oil)

Trans-Fatty Acids (Margarine, Candy, Bakery Products, French fries, Processed Peanut Butter)

3. Eat Organic Food: Part of the reason there has been such a rise in chronic illness is due to food being contaminated with hormone-disrupting substances. These substances bind to the body's own hormone receptor and has hormonal effect in the body and accumulates in fatty tissues and is very difficult for the body to expel . The chemicals listed below is a BRIEF list that has disruptive effects on thyroid functioning.

Chemicals:

Alkylphenols (BHT &BHA)
Bisphenol A
Pesticides
Synthetic Estrogen
Phthalates

Uses of Chemicals:

Food Preservatives
Coat in Cans
Keeps crops free of insects
Fatten Animals
Bottled Water

4. Eliminate Artificial Sweeteners:

Aspartame-also known as NutraSweet, Equal-is an aspartic acid that acts as a neurotransmitter that kills brain neurons and releases excess free radicals which is very toxic to those suffering from Thyroid disease.

5. Eat a Balanced Diet:

Thyroid imbalances are more prone to occur when eating an inadequate diet. An adequate balance provides the body with the necessary raw materials to promote balance in the hormonal system.

Vitamins required for thyroid functioning:



1. THYROID SUPPORT COMPLEX
2. ZINC
3. IRON-C
4. MAGNESIUM

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Final thoughts:

Hypothyroidism is an under diagnosed and misunderstood disease. Being diagnosed myself in 2003, I feel and understand the frustration that this condition brings. My field of research and experience in Hypothyroidism has led me to places where the eyes don't see but where the body can only feel. Stand up with integrity and take control knowing that you are not alone. Let's get the conversation started and as I pass on to you what I have learnt, I hope each and everyone of you will share with your friend next to you what you know and let's create the circle of courage, strength and the power of knowledge.



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