

# Hypothyroidism

## *Is 98.6 Really Normal?*

By: Carol Petersen, CNP

3-8-2023

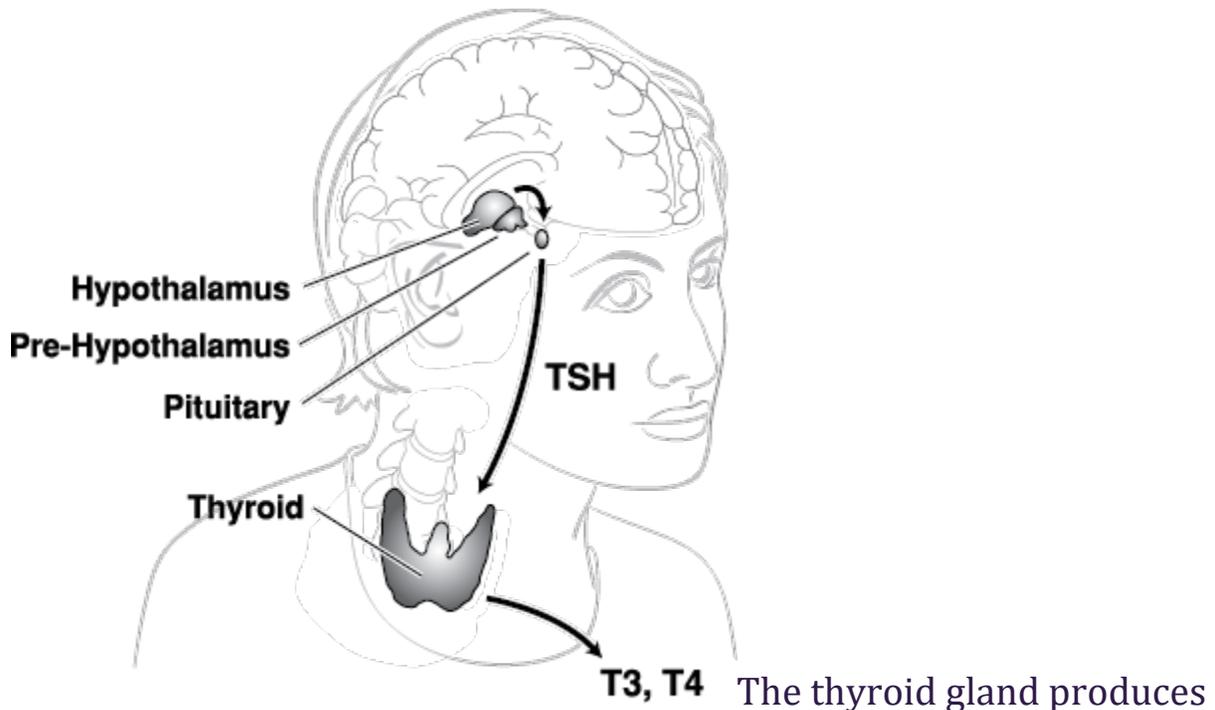
During the 1860s, an extensive study of over 25,000 patients revealed that the average temperature in the “normal” range was 98.6°F. Based on that study, we have accepted 98.6° as our “normal” temperature, with variations being a cause for concern of illness or infection. However, in the *Townsend Letter for Doctors*, Dr. Alan Gaby cites a more recent study, which determined that the average body temperature was 98.2°F — somewhat lower than what we typically consider “normal.”

Some medical professionals believe that an increased prevalence of mild to moderate hypothyroidism may be contributing to the lowering of our “normal” body temperature. In other words, “normal” does not necessarily mean optimal. In fact, using thousands of patients as a basis for study, Dr. Broda Barnes (author of the book *Hypothyroidism: The Unsuspected Illness*) promoted a simple body temperature test as the most reliable indicator of a potential thyroid problem.

As reported by Dr. Barnes, subtle hypothyroidism has become increasingly common throughout the 20th century. Dr. Gaby suggests that this apparent epidemic could be the result of several factors. Two such factors are a possible thyroid hormone resistance induced by pollutants and the possibility that we are evolving into a population with a propensity for hypothyroidism. Dr. Gaby explains that, in the past, people with mild hypothyroidism typically died from fatal bouts of pneumonia or other infections before their thyroid condition was diagnosed; today, many of these other illnesses are cured with antibiotics, allowing the hypothyroidism to surface. Therefore, instead of dying prematurely, these individuals survive to propagate an increasingly large family tree with a tendency toward hypothyroidism. It

seems that hypothyroidism may be an inherited disorder, especially for women.

## Understanding Thyroid Function



The thyroid gland produces thyroid hormones that regulate the body's metabolism. The principal hormones secreted by the thyroid gland are:

- Triiodothyronine (T3)
- Thyroxine (T4)

Because nearly 80% of the thyroid gland's production is devoted to T4, thyroxine is often called "the thyroid hormone" (much the same way that estrogen is considered "the female hormone"). Nonetheless, triiodothyronine, or T3, is functionally the more important thyroid hormone. According to Dr. Joseph Mercola, "T3 does 90% of the work of the thyroid in the body."

The thyroid, pituitary, and hypothalamus glands all play a role in producing thyroid hormones. The thyroid gland is stimulated to produce T3 and T4 by the pituitary gland's production of thyroid-stimulating hormone (TSH). The pituitary gland, in turn, is regulated by the

hypothalamus. Dr. Thierry Hertoghe indicates that there may even be a pre-hypothalamic influence on thyroid hormone production, but it is not yet widely understood.

Proper thyroid function requires the conversion of T4 to T3, which is the metabolically active derivative of T4. This conversion takes place primarily in the liver and kidney and is somewhat sensitive to nutrition and a variety of vitamin, mineral, or hormonal excesses or deficiencies (see *Imbalances That Can Affect T4 to T3 Conversion*). If the conversion of T4 to T3 is impaired such that there is a deficit of T3, symptoms of hypothyroidism may persist, even with thyroid treatment.

### **Diagnosis of Thyroid Dysfunction**

The most common method of diagnosing thyroid function is to measure TSH and T4, and sometimes T3, with a laboratory blood test. Blood tests may also be used to rule out other potential causes for a thyroid imbalance, such as a pituitary or adrenal deficiency. However, some healthcare practitioners feel that these tests are somewhat limited for determining thyroid function and that their results can be misleading.

Cases of mild to moderate hypothyroidism are sometimes missed because the range of “normal” test results may be overly broad, and the measurement is not sensitive enough. In addition, thyroid hormone levels are not static. They vary significantly throughout the day and are influenced by a variety of factors, such as the potential imbalances that can result from diet and lifestyle.

Another problem with using blood tests to gauge thyroid function is that the tests typically measure the serum level, not the “free” or biochemically available portion of the thyroid hormones. The majority of the thyroid hormones circulate in the bloodstream, bound to a carrier protein. However, only the unbound or “free” portion of the hormone is available for use by body cells.

### **Imbalances That Can Affect T4 to T3 Conversion**

## **EXCESSES**

- Nutrition: High-Fat Diet, High-Protein Diet  
Minerals: Cadmium, Lithium  
Hormones: Estrogen, Stress-related Hormones such as Cortisol

## **DEFICIENCIES**

- Nutrition: Fasting, starvation, Anorexia, Protein Calorie Malnutrition  
Minerals: Selenium, Iodine, Iron, Zinc  
Vitamins: Riboflavin (B2)  
Hormones: T3, T4, TSH

One of the underlying assumptions has been that serum levels reflect hormone levels within tissue cells. Dr. Kent Holtorf, medical director of the National Academy of Hypothyroidism, points out that tissue hormone levels can be very low, even when blood levels are not. He suggests that some patients might have a problem with the transport of thyroid hormones into the cells.

Proper thyroid function requires that both the T3 and T4 hormones get inside tissue cells, with T3 requiring much less energy for cell transport than T4. Numerous studies demonstrate that cell energy may not be sufficient to allow for adequate thyroid hormone transport under some conditions, such as:

- Diabetes
- Migraines
- Depression
- Chronic fatigue
- Chronic inflammation
- High cholesterol

The use of some drugs, such as Valium, Ativan, or Xanax may also interfere with T3's ability to enter into the cells.

Furthermore, conventional thyroid blood tests account for only the thyroid and pituitary glands' roles in the process. There are other aspects of thyroid function that may go wrong, which such tests do not measure.

According to Dr. Barnes, “More information often can be brought to the physician with only the aid of an ordinary thermometer than can be obtained with all other thyroid function tests combined.” With years of study and the successful treatment of thousands of patients to back him, Dr. Barnes promoted the use of a simple, easy, temperature test for detecting thyroid problems (see *Basal Temperature Test*).

While Dr. Barnes admitted that it is not a perfect test for determining thyroid function, it has proven to be useful in detecting mild to moderate hypothyroidism. He noted that relatively few other conditions lower the basal temperature below normal (including pituitary or adrenal deficiencies, starvation, and some drugs), but these can be fairly easily ruled out.

### **Symptoms of Thyroid Problems**

Undetected thyroid problems have plagued people for years, and continue to be an underlying cause for a variety of ailments that doctors hear about today. The onset of hypothyroidism is often subtle, with symptoms gradually worsening over time, becoming more obvious as people age. To further complicate matters, the symptoms of hypothyroidism are varied, affecting each individual differently, including:

- Excessive fatigue
- Increasing sensitivity to cold, feeling chilly even at normal room temperature
- Slow, rapid, or irregular heartbeat
- Menstrual problems, with possible infertility
- Weight-related problems, including difficulty losing weight, or unexplained weight gain or weight loss
- Fluid retention, especially around the eyes
- Coarse or brittle hair, with slow growth or excessive hair loss
- Skin problems such as dry, rough, scaly skin
- Mental impairment, including depression, inability to concentrate, and poor memory

- Decreased or minimal perspiration, even in hot weather or during exertion
- Constipation that is resistant to laxatives or magnesium supplements
- Infection, especially respiratory infections
- Muscle weakness
- Joint pain

Unfortunately, many healthcare professionals still do not recognize these symptoms as being potentially related to thyroid function. This is another reason that hypothyroidism is often overlooked, remaining undetected until more severe symptoms develop.

## **Related Conditions**

### ***Menstrual Disorders***

The fact that many menstrual irregularities are related to hypothyroidism has been commonly accepted for quite some time. As early as 1914, Dr. Eugene Hertoghe, a distinguished Belgian endocrinologist, noted: “The thyroid has a great influence on menstruation, pregnancy, lactation, and even uterine involution after childbirth.” And in 1982, Dr. Broda Barnes confirmed that “There are many possible causes for menstrual difficulties. Among them are ovarian cysts, fibroids, and cervical polyps, [as well as] endometriosis ... But in the vast majority of women, there is no evidence of any [organ-related] problem. What is commonly evident if it is sought is low thyroid function.”

Dr. Barnes continued, “Forty years ago, ... leading gynecologists ... were reporting that thyroid [therapy] had cured more menstrual disorders than all other medications combined. Unfortunately, that lesson seems to have been largely lost.” Even more unfortunately for the many women who suffer from menstrual problems, that lesson still seems lost today, almost thirty years later.

Reliance solely on blood testing for determining thyroid deficiencies, coupled with the development and use of synthetic thyroid hormones, has caused many menstrual-related thyroid disorders to go untreated, according to Dr. Barnes. He believed and practiced that, without evidence of an organ-related cause, most menstrual problems (including miscarriage and infertility) could be remedied with proper thyroid therapy. His book, *Hypothyroidism: The Unsuspected Illness*, contains numerous anecdotes, examples, and case studies that demonstrate Dr. Barnes' success rate. Some of this success was due to the fact that he looked at both members of a couple (not just the woman), and thereby recognized hypothyroidism in the father as a potential part of the problem.

Over the past few decades, it has been well documented that infertility is on the rise. There may be a link between the rise in untreated hypothyroidism and the rise in infertility. This possible connection warrants further research, especially in light of the success Dr. Barnes had with treating infertile couples.

### ***Heart Disease***

Heart diseases may be related to hypothyroidism. Thyroid secretions also control cholesterol levels, which means that hypothyroidism may be a primary contributor to atherosclerosis. Thyroid deficiencies may lead to accelerated blood clotting (producing a clot that may block a clogged artery), as well as increased blood pressure and excessive fatigue — all factors that may increase the risk of stroke or heart attack.

### ***Osteoporosis***

Years ago, there was some concern that thyroid treatment could lead to osteoporosis. Even though this has not proven to be true, women are still warned about it today. In fact, according to Dr. Ray Peat in the *Townsend Letter for Doctors*, the opposite is more likely to be true. He states, "Hypothyroidism, whether natural or promoted by administered [levo]thyroxine, retards bone modeling and tissue repair in general." Osteoporosis may result from hypothyroidism itself, or from

levothyroxine pills (which are only T4) if there is a poor conversion of T4 to T3.

Dr. Peat contends that the risk of osteoporosis is likely to be greater without administering proper thyroid hormone therapy.

## **Thyroid Treatments**

The current method of treatment for hypothyroidism is some form of thyroid hormone replacement that provides either T3 or T4, or a combination of the two. The most commonly prescribed thyroid therapy is levothyroxine, with brand names such as Synthroid, Levothroid, or Levoxyl, and which contain only T4. T3 is available as Cytomel.

Although the predominant treatment is T4, some medical practitioners question the value of T4-only treatment. In fact, a *New England Journal of Medicine* article reinforced the significance of T3 in treating hypothyroidism, which lends support to practitioners' concerns. For example, Dr. Mercola states that many people being treated for hypothyroidism with T4 are actually being under-treated, and suggests the excessive reliance on single-thyroid treatments (T4) and the subsequent blood test results indicating a "normal" TSH level are the primary reasons for the oversight.

Ray Peat, PhD, adds that "If the liver is the main source of the thyroid problem, then [levo]thyroxine pills [which are only T4] can make the problem worse ..." because the liver is not converting T4 to T3, and the treatment is further suppressing T3 production from the thyroid. In the majority of cases, it seems that the significance of T3 — the biochemically active thyroid hormone — is being ignored during diagnosis, treatment, and subsequent treatment monitoring.

As mentioned previously, there are many factors that may impair the conversion of T4 to T3. A significant number of patients do not convert T4 to T3 at a sufficient rate (or at all), necessitating a treatment that combines both hormones. In fact, some practitioners do use compounded mixtures that include both T3 and T4.

Another alternative is desiccated (or dried) whole animal thyroid, with brand names such as Westhroid, Nature-throid, and Armour thyroid. Some practitioners believe this therapy more closely resembles the entire range of human thyroid hormones, including both T3 and T4, as well as other potentially active thyroid hormones (see *Is There a Third Thyroid Hormone?*). Because T3 is both fast-acting and has a short half-life, some practitioners encourage administering thyroid treatments twice daily instead of once.

One reason T4 persists as the conventional treatment is a perception that it may be more stable than desiccated whole thyroid. However, Dr. Peat states that “Armour thyroid, USP, is often said to be of imprecise dosage, but in fact, every batch is biologically standardized, and studies have shown it to be reliably within 1% of the labeled potency. The best-known brand of the supposedly chemically precise levothyroxine, however, was for a long time 30% below the labeled potency.”

#### **Is There a Third Thyroid Hormone?**

Over the course of his many years in practice, the late Dr. Barnes noted that many patients who were being treated with thyroxine (T4) or a combination of T3 and T4 complained of residual symptoms, specifically dry skin and retention of fluid. However, when their therapy was modified to the natural Armour desiccated thyroid, which more closely resembles the full range of human thyroid hormones, both symptoms disappeared within one to two months. These observations suggested to Dr. Barnes that “there may be a diuretic factor in the thyroid gland separate from T4 and T3.” He suggested that the possibility of additional thyroid hormones warrants more research.

#### **Conclusion**

Overt hypothyroidism is fairly easy to detect. But, for the majority of people who have this disease in mild to moderate forms, the diagnosis is may be missed. Once diagnosed, proper thyroid hormone replacement therapy can remedy the majority of symptoms.

Not all people with hypothyroidism will exhibit the same symptoms. The symptoms that do surface will affect people to different degrees, from very severe to very mild. In addition, thyroid hormone levels are not a reliable indicator of how bad (or good) you feel. Some people with very “mild” deviations in their laboratory thyroid test results will feel just fine, while others will have any number of symptoms. Therefore, it is important for both you and your healthcare practitioner to keep in mind that the goal is not necessarily to force the blood test results into the “normal” range, but to make you feel better as well!