

Research Article

Are you tired? Low Thyroid may be the Culprit: Part 1

Martin Feldman and Gary Null*

Nutrition Institute of America, New York, USA

Function and Diagnosis

An underactive thyroid system is a common health problem, causing symptoms such as low energy, weight gain, hair loss and depression in its many victims. Depression is an especially tricky symptom for these people because it is likely to be diagnosed as a psychological disorder. A patient could end up taking an antidepressant such as Prozac, which poses certain health risks, at a time when he or she really needs to repair a faulty thyroid system.

Low thyroid may be the most commonly misdiagnosed health problem in the United States. Some physicians estimate that as many as one in five Americans may suffer from an unsuspected low thyroid state. In *Thyroid Power: Ten Steps to Total Health*, Richard Shames MD and Karilee Shames RN PhD, call low thyroid a “large-scale epidemic that has been inadequately addressed.” They note that more than half of people with low-grade hypothyroidism remain undiagnosed at any given time, and that Synthroid, the well-known thyroid hormone medication, became the best-selling prescription drug in 1999 [1].

One conventional survey found that approximately 10 percent of the general population and up to 20 percent of older women have mild thyroid failure [2]. And according to doctors on the thyroid service at Harvard Medical School, one out of 12 women under the age of 50 and one out of six by age 60 have the disorder [3]. Another researcher suggests that “thyroiditis is a commonly overlooked problem in perhaps 10% of chronically ill patients” [4].

The source of this hidden health problem is the complex thyroid system. The thyroid gland is a small, butterfly-shaped organ located in the front of the neck, just below your Adam’s apple. It secretes about a teaspoon of hormone a year and is responsible for the speed of the body’s metabolism. The thyroid affects every organ and cell in the body from our hair follicles to our toenails so most body functions become sluggish if it does not work properly.

*Corresponding author: Gary Null, Nutrition Institute of America, New York, USA, Tel: +1 6469265437; E-mail: radio@garynull.com

Citation: Feldman M, Null G (2022) Are you tired? Low Thyroid may be the Culprit: Part 1. J Altern Complement Integr Med 8: 228.

Received: February 22, 2022; Accepted: February 23, 2022; Published: February 28, 2022

Copyright: © 2022 Feldman M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

In addition to stimulating oxidative metabolism, thyroid hormone promotes the synthesis of protein from amino acids. The body needs protein to replace worn-out cells and make enzymes, which moderate the speed of biochemical reactions in the cells. Thyroid hormone also potentiates the effect of other hormones, is needed for the secretion of sex-activating hormones, and is partially responsible for controlling the rate of nutrient absorption in the gastrointestinal tract [5].

Hypothyroidism is a disorder that occurs when the thyroid system is underactive in one of two ways: 1) the thyroid gland itself does not produce enough hormones, or 2) the liver, kidney and other tissues do not properly convert the output of the thyroid gland to the active form of thyroid hormone that works in the body’s cells.

A variety of factors can lead to a low thyroid condition. They include excess stress, mineral deficiencies and exposure to toxins, prolonged illness and autoimmune disorders. Many cases of thyroid system dysfunction occur because the immune system is over vigilant and mistakenly attacks the thyroid gland [6]. If the antibody condition is severe enough, there may be a blockage at the cellular receptors.

An underproduction of thyroid hormone or a faulty conversion process outside of the thyroid gland may affect men and women of all ages, but women and older people seem especially susceptible. Hypothyroidism significantly increases their risk of osteoporosis and cardiovascular disease. A dysfunctional thyroid system accelerates bone loss, and an underproduction of thyroid hormones can alter the body’s cholesterol by decreasing the “good” type (HDL) and increasing the “bad” type (LDL).

Considering the potential consequences, the failure to detect and treat this condition in many people is troubling. In one study of more than 1,100 women, subclinical hypothyroidism was a strong indicator of a risk for atherosclerosis and myocardial infarction in elderly women [7].

A Failure to Diagnose

Why do most thyroid conditions remain unrecognized? Because of the method of diagnosis. Conventional medicine tests thyroid functioning almost exclusively through the blood levels of three hormones. They are TSH (thyroid stimulating hormone), total T4, and T3 uptake, which comprise the thyroid panel recommended by the AMA.

A low thyroid condition is easily diagnosed by these conventional blood tests if 1) a patient’s TSH is above the normal reference range, 2) total T4 is below the reference range, or 3) T3 uptake is below the reference range. TSH directs the production of T4, and it is the most sensitive of the three measures. An elevated TSH level means the pituitary gland is directing the thyroid to produce more T4 hormone, but the thyroid is not responding. Thus, a high TSH indirectly reflects a diminished thyroid output. Most testing laboratories put the upper limit of the normal range for TSH at about 4.0 to 4.5 mU/L; any level over that amount would be considered primary hypothyroidism [8].

The problem with these conventional measures is that a person’s blood levels may test within the normal reference ranges even when

the thyroid system as a whole is seriously underactive. That's why it is necessary to test the second stage of thyroid functioning by measuring how well the body converts T4 hormone to T3.

The superior measure of this conversion process is "free T3," not the T3 uptake tested by conventional medicine. Free T3 is the final, active form of thyroid hormone that enters the cells of the body and instructs them to speed up metabolism (the remainder of the hormone is bound to protein). While free T3 is a very small component of the total, it does all of the work at the body's cellular level. A person's free T3 may not be functioning optimally even though his or her blood levels of TSH, total T4 and T3 uptake the conventional measures are within normal ranges.

Hypothyroidism also can be difficult to diagnose because the condition develops subtly, according to Stephen Langer, M.D., and James Scheer, authors of *Solved: The Riddle of Illness*. They point to an article in *Diagnosis* that identified three grades of hypothyroidism [9]

- Grade three (subclinical form), with decreased energy and depressed mood.
- Grade two (mild hypothyroidism), with fatigue, dry skin and constipation; blood levels of thyroid hormone usually are still normal.
- Grade one (overt hypothyroidism), with a measurable decrease in circulating thyroid hormone, extreme weakness, dry skin, coarsening of hair, constipation, lethargy, memory impairment, a sensation of cold, slowed speech and weight gain.

Conventional physicians will diagnose central hypothyroidism easily when the thyroid gland itself is diseased enough to become enlarged. This condition, called a goiter, is observable and therefore easy to recognize. In addition, a thyroid nodule occasionally may be palpated. Mainstream doctors also may diagnose hypothyroidism when the hormone levels in the conventional thyroid blood tests are out of range, indicating the thyroid is underactive.

However, millions of people may have a less severe pathology than that recognized by orthodox medicine and still have a suboptimal thyroid system. This nonconventional thyroid condition has been described in the medical literature in three ways: euthyroid sick syndrome (ESS), Wilson's syndrome, and low T3 syndrome. We hope that more research and information on this condition will expand its acceptance in traditional medicine and lead doctors to consider whether patients are suffering from a suboptimal thyroid condition.

Fortunately, there is a lot that you and an enlightened, complementary physician can do to help diagnose and optimize a faulty thyroid system. First, let's look at the symptoms of a low thyroid condition.

Do you have these Problems?

Dr. Feldman, co-author of this article, says that a diagnosis of an underactive thyroid system is probable when a patient has any of the following hallmark symptoms:

Low energy

This is a common health problem in American society. Low energy seems to be increasing and affecting younger people more often today than it did a decade ago. Lack of energy was a major issue for many of the participants in Gary Null's "Anti-Aging Support Groups," for whom Dr. Feldman served as medical reviewer and analyst. (Many of these people were able to rebalance their thyroid

system with health-optimizing protocols.) In addition, approximately 25 percent of the patients in his private practice complain of mild, moderate or severe low-energy conditions.

Low-energy states can be very distressing for their victims. Millions of people may suffer needlessly if the true cause of their energy deficit such as a thyroid problem is not identified. This is especially true if people are treated for psychological conditions such as depression when their problem is much more biochemical in nature, caused by a low thyroid condition with or without other hormonal imbalances.

The fatigue caused by a low thyroid condition generally is not significant in the morning but gradually worsens throughout the day or starts later in the day. Conventional medicine recognizes that a thyroid malfunction may result in fatigue of varying degrees, including a profound and persistent exhaustion [10].

- When evaluating low-energy states, it is the *pattern* of energy and time of day during which the deficit occurs that help define the specific health problem a patient is facing. Consider:
- When low energy is diffuse, occurring throughout the day, statistically there is a probability of a malfunction of the thyroid system.
- Similarly, when the lowest energy is in the evening after 6 p.m., an **underactive thyroid system** may be the cause.
- However, when low energy is most severe upon awakening, even after restful sleep, and in the early morning, it usually implies a low adrenal state.
- When low energy is most severe at 3 p.m. or 4 p.m., often there is a blood sugar or food allergy problem. This possibility is amplified when the patient craves sugar or binges on sugar or refined carbohydrates, indicating he or she has as a glucose instability condition or a hypoglycemic condition.
- When the energy deficit is very severe and occurs throughout the day, there tends to be both an adrenal and thyroid suboptimal state.

With this last pattern, the severity of the low-energy state is related to the poor functioning of both systems at once. Energy problems tend to be proportional—when any two or three of the systems are suboptimal at the same time, your energy level will be worse than with either problem alone. For example, if your adrenals or your thyroid system is faulty and you're also hypoglycemic, your energy deficit will be more severe.

Depression

When depression is generalized rather than a reaction to a particular stressor, it is very commonly due to the following factors: malfunctions of the thyroid system, adrenals, or glucose-control mechanism, deficiencies of B12 and B complex vitamins, or food allergies that affect the brain (cerebral allergy). According to some studies, low thyroid is a cause of depression in more than half the people treated for the condition [11].

Depression typically is considered a psychological problem, and a diagnosis and treatment as such is valid in cases of obvious reactive depression (the loss of a loved one, etc.). But in many other instances, the so-called depression is actually a defective biochemical state. The thyroid problem may be part of the biochemistry that is draining the body and depleting its energy, causing what is described as depression.

In such cases, the depressive condition is not so much a psychological defect as a biochemical one. Malfunctions of the thyroid system can lead to depression, anxiety, panic attacks and bipolar disorders because this system affects the metabolism of the nervous system [12].

Psychiatrists have known for some time that a low level of free T3 is a factor in depression, according to an article by Joseph Mercola, D.O., of the Optimal Wellness Center in Schaumburg, Ill. (www.mercola.com). Often, patients' antidepressant medication must be augmented with T3 for the depressive state to respond to the pharmaceutical. The action of antidepressants may be better enhanced by a T3/T4 treatment than by T4 alone [13].

Indeed, many depressed hypothyroid patients require a treatment combining T3 and T4 rather than one containing T4 alone, according to a 1993 letter published in the *Journal of Clinical Psychiatry* by John V. Dommissie, M.D., FRCPC, in response to an article on T3 augmentation of antidepressant treatment. Dr. Dommissie suggests that the blood levels of T4 and T3 in *all* hypothyroid patients should be brought into the mid- to high-normal ranges. If these levels cannot be achieved with T4-only medication, T3 should be added to the treatment. He explains that T4-only medication is an adequate source of T3 for a certain percentage of patients who convert T4 to T3 at a sufficient rate. But for a substantial proportion of patients, a T3/T4 combination is needed [14,15].

It should be noted that the severity of a person's depression often correlates to the number of malfunctions he or she is experiencing, based on Dr. Feldman's testing and statistical analysis of many patients. The malfunctions that may be involved in this energy-depleting process are listed in the table below.

Energy Robbers

In addition to a suboptimal thyroid or adrenal system, the following imbalances may contribute to low energy and "depression":

- Deficiency of B complex vitamins
- Deficiency of vitamin B12
- Malabsorption condition leading to multiple nutritional deficiencies
- Hypoglycemia or glucose instability syndrome
- Hidden infections (viral, bacterial, parasitic, yeast)
- Cerebral allergy
- Autoimmune conditions
- Toxicity

When the energy robbers are corrected, the depression seems to improve in relation to the number of imbalances treated. The more components that are rebalanced, the greater the improvement. For example, if a patient had five problems and two or three of them are addressed, he or she feels better. If all five are fixed, the "depression" lifts.

The good news is that some of these malfunctions are easy to treat. For example, supplements can be taken to balance a B complex or B12 deficiency and to correct a faulty glucose thermostat. This thermostat controls the blood glucose level, and its malfunctioning often

correlates to low levels of chromium, zinc and manganese. It's also easy to test for and eliminate foods that cause a cerebral allergy. As for addressing toxicity, more information on how to eliminate toxins will be presented in Part 2 of this article. For the moment, one useful resource is the video "Detoxification: A Natural Approach," which can be obtained through this Web site.

Overweight

A strong hallmark of a hypothyroid problem is being overweight and having difficulty losing weight even when you reduce your caloric intake and exercise vigorously. This symptom stems from the thyroid's effect on metabolism: Recall that an underactive thyroid system causes the metabolism to slow down. As a result, you don't burn as many calories and your body is not burning fat from storage. Because the calorie-burning mechanism is sluggish in hypothyroid conditions, it is difficult to lose weight.

Hair loss

A loss of scalp hair is another symptom, especially when it occurs in women who are under 50 and have no family history of hair loss. The classic picture of a low thyroid state is a loss of hair in the outer one-third of the eyebrows, but some people with the condition have a diffuse loss of scalp hair only and do not lose hair from the eyebrows.

All women with hair loss should have their thyroid system properly evaluated (not just through the conventional thyroid blood tests). In Dr. Feldman's experience, most women with diffuse head hair loss have a suboptimal thyroid system. Also, these women's hair may be dry and brittle.

Cold intolerance

If a person complains of being cold, especially in the hands and feet, a low thyroid condition often is indicated. You may recognize this symptom if you usually require extra clothing, socks, hats, etc. In addition, if your body temperature tests low, a diagnostic method discussed later in this article, a diagnosis of hypothyroidism is likely.

In addition to those five symptoms, other health factors related to a suboptimal thyroid include the following:

Immune system problems

Whenever a patient has a known, diagnosed imbalance of the immune system, the possibility of impaired thyroid functioning due to an autoimmune process increases statistically. These immune imbalances include lupus, rheumatoid arthritis, severe allergy states, multiple sclerosis, uveitis, scleroderma and Sjögren's syndrome, among others.

Postpartum depression

In many cases, this condition is partly caused by a low thyroid condition. An immune malfunction after the delivery can cause thyroid dysfunction [16].

The development of a fetus requires a complex orchestration of hormones that may put stress on the woman's entire hormonal apparatus to nurture the baby. This process is an immune stressor and may lead to suboptimal thyroid functioning during or after pregnancy, sometimes occurring weeks or even months after the delivery.

Infertility

Women with no other medical complications that account for infertility, such as anatomical problems with the fallopian tubes or ovaries, may have infertility due to a thyroid system malfunction.

Other problems in women

Two other signs that may be associated with a hypothyroid condition are irregular menstrual cycles and a loss of menstrual periods. These problems reflect an underlying hormonal imbalance of the pituitary/ovarian axis.

Hypothyroidism can cause or aggravate many female problems, including miscarriage, fibrocystic breast disease, ovarian fibroids, cystic ovaries, endometriosis, PMS and menopausal symptoms [17]. Severe menopause symptoms can be a reflection of borderline low thyroid conditions [18].

Although the exact relationship between thyroid dysfunction and female problems is not understood, it is known that hypothyroidism is linked to hormonal imbalances, especially an excess of estrogen over progesterone. Too much estrogen is bad for the thyroid because it inhibits thyroid production while progesterone promotes it [19].

Researchers at the Mayo Clinic found that many gynecological conditions improved when fatigued hypothyroid women with menstrual problems took thyroid hormone. Excessive blood flow improved in 73%, loss of menstrual cycles in 72%, and deficient menstruation in 55% [20].

Candida albicans overgrowth

Recurrent Candida (yeast) infections may lead to an imbalanced immune system. Over time this imbalance can cause an autoimmune process that affects the thyroid as the body mistakenly attacks its own thyroid tissue. Other autoimmune processes may accompany a chronic overgrowth of Candida as well.

Unhealthy skin

In addition to causing dry skin, hypothyroidism can lead to acne, in part because the circulation is reduced and the skin does not get the blood supply it needs. This deficit means the skin cells are deprived of oxygen and fuel and the waste products of the cells are not properly removed [21].

The thyroid hormonal system

People suffering from such symptoms should understand that the thyroid mechanism is not simply a gland that secretes hormones, but rather a system that depends on tissues outside of the thyroid to produce needed hormones and on “receptor” cells in the body. If any part of this system malfunctions and some problems are easier to detect than others the thyroid mechanism can become underactive.

As noted, the fundamental hormones of this system are T3, T4, and TSH. When the thyroid gland is functioning optimally, it uses the amino acid tyrosine as well as iodine to produce T4 (thyroxine). However, the major active form of thyroid hormone is T3 (triiodothyronine), and the majority of T3 is produced outside of the thyroid gland itself. T3 is converted from T4 in the peripheral tissues of the liver, lung, kidneys and elsewhere. Free T3 is the final product that influences the functioning of the cells.

With that in mind, the thyroid system may become imbalanced in the following ways:

Central thyroid dysregulation

The production of thyroid hormones is centrally regulated by the hypothalamus-pituitary-thyroid axis. If your TSH level is elevated or your T4 level is low, the problem lies with the central thyroid mechanism.

Here’s how this mechanism works: The hypothalamus and pituitary stimulate the thyroid function by producing a neurotransmitter called thyrotrophin releasing hormone. This hormone causes the anterior pituitary to release TSH, which directs the production and secretion of T4 by the thyroid gland.

The thyroid hormones operate on a feedback loop. If the level of T4 in the bloodstream is low, more TSH is released in order to boost the thyroid’s production of T4. When T4 levels rise, they provide feedback to the pituitary to slow down TSH secretion. The T4 binds to receptors in the anterior pituitary and thereby prevents the release of TSH.

If this central mechanism is faulty, however, the thyroid may not produce as much T4 as the body needs, resulting in the “low thyroid” condition. Consequently, the TSH level will rise as the pituitary provides louder and louder instructions, so to speak, to produce T4 hormone. In such cases, the TSH is attempting to direct the production of T4, but the mechanism is sluggish and does not respond properly.

TSH is the most sensitive of the three thyroid hormones, and an abnormal level of TSH will be the first to manifest itself when the thyroid system is off balance. Be aware, however, that while TSH is the best of the three conventional blood tests, it provides only an indirect measure of central thyroid functioning.

Peripheral Thyroid Imbalances

Even when the central regulation is working properly, the thyroid system may still be dysfunctional at the peripheral level, where T4 is converted to T3. If this conversion process does not work properly, a low thyroid condition also may result because the level of free T3 is insufficient. The thyroid effect at the cellular level is inadequate.

You may produce sufficient amounts of T4 but still have the symptoms of under activity because the conversion aspect of the thyroid mechanism has faltered. Factors that can reduce the conversion of T4 to T3 include a restricted intake of carbohydrates, nutrient shortages, enzyme deficiencies, chronic illness, heavy metal exposure, increased glucocorticoids or high-stress states, and imbalanced estrogens. Stress can inhibit this conversion process by elevating cortisol.

Blood tests of “free T3” can indicate subclinical problems with the conversion of T4 to T3. As noted earlier, the free fraction of a hormone is the active portion that can enter the body’s cells to do its work. The amount of “reverse T3” in a person’s blood is a second way to evaluate the conversion process. Because reverse T3 is an inactive, improper byproduct of the conversion process, an elevated level indicates a malfunction in the peripheral aspect of the thyroid system.

Blood tests of free T4, free T3 and reverse T3 are available from most conventional laboratories and from specialty laboratories such as Great Smokies Diagnostic Laboratory and Quest Diagnostics Nichols Institute (for more information, see “Resources” at the end of Part 2 of this article).

As a fine point, Pharmasan Labs is in the process of correlating T4 and T3 levels in the blood with levels in the saliva. Saliva testing of free T4 and free T3 holds great promise because it would make the diagnostic process more convenient for the patient. Rather than having blood drawn at a medical facility, the patient could provide the saliva sample from home and mail it to the lab for testing. One study shows that saliva is a good marker for the level of free T4 in a person's body. It correlates well with the amount of free T4 in the blood [22].

Thyroid Antibodies

A third malfunction of the thyroid system may occur when the immune system produces antibodies that interfere with thyroid functioning. Two such antibodies are anti-thyroidal peroxidase (anti-TPO) and anti-thyroglobulin (anti-TG).

At high levels, thyroid antibodies may interfere with the ability of thyroid hormones to function and attach to receptor cells. An elevated level of antibodies indicates that an autoimmune process is active. The immune system is imbalanced and is wrongly attacking the body's own thyroid tissue or other components of the thyroid system. One such autoimmune process is called Hashimoto's thyroiditis.

Anything that creates stress on the immune system can lead to this misguided attack. Problems such as trauma, dysbiosis and inflammation may cause the levels of anti-TG and anti-TPO in the body to rise. According to Pharmasan Labs, TPO antibodies, which inhibit thyroid hormone synthesis, are positive in 95% of patients with autoimmune thyroiditis and 10% of American adults. Their prevalence in women increases with age.

Antithyroid antibodies may be a concern for women who are trying to conceive as well. In a study of 69 women with a history of early pregnancy loss, fetal death and preeclampsia, the results seemed to confirm an association between thyroid autoimmunity and obstetric complications. The researchers have called for more studies to evaluate the reproductive outcome of women with a history of these three disorders and the presence of antithyroid antibodies [23].

Many conventional laboratories measure anti-TG and anti-TPO. However, they are not the only antibodies that attack components of the thyroid system. One lab that does an excellent job of testing for more comprehensive antibodies is Specialty Laboratories (see "Resources" at the end of Part 2 of this article for more information).

Better Diagnoses

We believe that an array of more comprehensive tests, such as those described above, may help increase the diagnosis of thyroid conditions by mainstream medicine. Many conventional physicians have not used such tests to date simply because the approach to thyroid functioning presented in this article is not part of their medical model. They overlook the peripheral, T4-to-T3 aspect of the thyroid mechanism.

The conventional model has taught health-care professionals to rely on mainstream blood tests especially the AMA thyroid panel consisting of thyroid stimulating hormone, total T4 and T3 uptake in evaluating the thyroid function. We hope this narrow focus will begin to change as the newer tests of free T4, free T3, reverse T3 and comprehensive antithyroid antibodies gain acceptance. As laboratory data better defines specific defects in the peripheral T3 aspects of the thyroid mechanism, conventional physicians may be more willing to recognize and treat the malfunctions.

The Other Side: Hyperthyroidism

Before we move on to complementary medicine's view of low thyroid conditions, readers should be aware that there is another disorder called *hyper*thyroidism. This condition is the flip side of hypothyroidism: The body produces too much thyroid hormone, and as a result the metabolism speeds up significantly.

The symptoms of hyperthyroidism often the opposite of those associated with low thyroid include weight loss, warm, moist skin, feeling keyed up and restless, and feeling hot all the time. Hyperthyroid patients usually have Graves disease, an autoimmune process that creates an overactive output of hormones in reaction to inflammation in the central thyroid mechanism.

In addition, Graves hyperthyroidism may induce protruding eyes, high blood pressure, nervousness, insomnia, increased appetite, bowel hyperactivity, increased sweating and palpitations or arrhythmia. In older people the fast metabolism of hyperthyroidism may heighten conditions such as a weak heart, causing an irregular heart beat or even heart failure.

The Complementary Approach

If your conventional thyroid blood tests are normal, most conventional physician will tell you that your thyroid is fine no matter how many symptoms of a low thyroid condition you have. But complementary and holistic physicians generally know from experience that you can't count on the usual blood tests to accurately diagnose many cases of an under functioning thyroid system.

Complementary physicians usually rely on more comprehensive diagnostic methods to identify thyroid malfunctions: 1) a measurement of the patient's basal body temperature, which is your temperature upon awakening; 2) an analysis of the patient's symptoms; and 3) the results of the advanced blood tests measuring free T4 and free T3.

A low basal body temperature is a strong indicator of low thyroid. Researched decades ago by Dr. Broda O. Barnes, the temperature test is still one of the physician's most important diagnostic tools. For patients who take their waking temperature, here's how the process works:

- Use an oral thermometer (not the digital kind). Shake it down before going to bed and leave it on your bedside table within easy reach.
- Upon awakening, remain horizontal and move as little as possible as you place the thermometer in your armpit next to your skin. Leave it in place for 10 minutes.
- Record your temperature readings for five consecutive days. Women who still menstruate will get slightly better data on the second, third, fourth and fifth day of menses, but it is not essential to take your temperature only on those days. Males, prepubertal girls and postmenopausal or non-menstruating women may take the basal temperatures any day of the month. Women taking progesterone should not take the hormone the day before and the days that the basal temperatures are taken.
- Discuss the readings with your physician, preferably a complementary or holistic doctor who understands the importance and efficacy of this test. An average temperature between 97.8° F and 98.2° F is considered normal. If the average temperature is below 97.8° F, then the diagnosis of a suboptimal thyroid system—or hypothyroid condition—is likely.

Along with a low temperature, a variety of symptoms strongly suggest the diagnosis of hypothyroidism. These symptoms—some of which were discussed earlier in this article—include the following:

Low energy Fatigue Depression and anxiety Weight gain and/or difficulty losing weight Intolerance to cold Hair loss, thinning scalp hair Dry skin or hair Thin eyebrows on outer one-third Thin or brittle nails	Infertility and menstrual irregularities Poor memory or difficulty concentrating Constipation Slowing of thought processes and reactions Slow pulse rate even if you are not a well-trained athlete Immune system problems
--	---

As a precautionary measure, you can also check yourself for signs of an enlarged or irregular thyroid gland. The American Association of Clinical Endocrinologists encourages patients with menopausal symptoms to take this self-test to determine if they need to see a doctor about their thyroid functioning [24]:

- Focus a hand mirror on your neck, just beneath the Adam’s apple and right above the collarbone
- Tilt your head back
- Swallow some water from a glass
- While swallowing, observe your neck for bulges or protrusions. Repeat a few times to make certain your observation is correct
- If you detect bulges or protrusions, see your doctor immediately. You may have an enlarged gland or a thyroid nodule

If you do have a nodule, please keep in mind that the vast majority are not cancerous. The Thyroid Foundation of America reports that probably less than 5 percent contain cancer, and 90 percent of that small group is curable when they are treated properly. An excellent discussion of this topic, titled “Management of a Thyroid Nodule,” is available on the foundation’s Web site at www.tsh.org.

Coming in Part 2: Now that you understand the functioning of the thyroid system and the symptoms of a thyroid problem, read Part 2 of this article for a detailed discussion of how to rebalance a suboptimal thyroid mechanism. You’ll learn about natural protocols and lifestyle changes that assist the thyroid system, as well as the different types of thyroid hormone medications available to those who need them.

References

1. Richard S, Shames KH (2001) *Thyroid Power: Ten Steps to Total Health*. HarperCollins Publishers Inc., New York, USA.
2. Ridgeway EC (1966) *Hypothyroidism: The Hidden Challenge*. University of Colorado School of Medicine, USA.
3. Wood LC (1995) *Your Thyroid*. Ballantine Books, New York, USA.
4. Wilkinson R (1997) *Thyroid dysfunction and treatment*. University of Arizona School of Medicine, USA.
5. Langer SE, Scheer JF (2000) *Solved: The Riddle of Illness*. Keats Publishing, CA, USA.
6. Galofre JC, Mayor RVG, Fluiters E, Calvet LF, Rego A, et al. (1994) Incidence of different forms of thyroid dysfunction and its degrees in an iodine sufficient area. *Thyroidology* 6: 49-54.
7. Hak AE, Pols HA, Visser TJ, Drexhage HA, Hofman A, et al, (2000) Sub-clinical hypothyroidism is an independent risk factor for atherosclerosis and myocardial infarction in elderly women: the Rotterdam Study. *Ann Intern Med* 132: 270-278.
8. Mercola J (2022) *Hypothyroidism Part II: Hypothyroidism: sensitive diagnosis and optimized treatment a review and comprehensive hypothesis*. Optimal Wellness Center, Schaumburg, IL, USA.
9. Gold MS, Pearsall HR, Pottash AC (1983) Hypothyroidism and depression: the causal connection. *Diagnosis* 1983: 77-80.
10. Barsano CP (1991) Other forms of primary hypothyroidism, *The Thyroid: A Fundamental Clinical Text*. In: Braverman LE, Utiger RD (eds.). Lippincott, USA.
11. Shames 16.
12. Null G (2000) *The Food-Mood-Body Connection*. Seven Stories Press, New York, USA.
13. Mercola, Part II.
14. Domnisse JV (1993) Letter. *The Journal of Clinical Psychiatry*.
15. Cooke RG, Joffe RT and Levitt AJ (1992) T3 augmentation of antidepressant treatment in T4-replaced thyroid patients. *J Clin Psychi* 53: 16-18.
16. Hidaka Y (1995) Post-partum depression or post-partum thyroiditis? Department of Laboratory Medicine, Osaka University Medical School. *Rinsho Byori* 43: 1107-1109.
17. Null G, Seaman B (1999) *For Women Only*. Seven Stories Press, New York, USA.
18. Feit H (1988) Thyroid function in the elderly. *Clin Ger Med* 4: 151-161.
19. Null G 533.
20. *The Thyroid Gland* (1945) Armour Laboratories, Chicago, USA.
21. Langer 65-66.
22. Putz Z, Vanuga A, Veleminsky J (1985) Radioimmunoassay of thyroxine in saliva. *Exp Clin Endocrinol* 85: 199-203.
23. Mecacci F, Parretti E, Cioni R, Lucchetti R, Magrini A, et al, (2000) Thyroid autoimmunity and its association with non-organ-specific antibodies and subclinical alterations of thyroid function in women with a history of pregnancy loss or preeclampsia. *J Reprod Immunol* 46: 39-50.
24. Langer 189.



- Advances In Industrial Biotechnology | ISSN: 2639-5665
- Advances In Microbiology Research | ISSN: 2689-694X
- Archives Of Surgery And Surgical Education | ISSN: 2689-3126
- Archives Of Urology
- Archives Of Zoological Studies | ISSN: 2640-7779
- Current Trends Medical And Biological Engineering
- International Journal Of Case Reports And Therapeutic Studies | ISSN: 2689-310X
- Journal Of Addiction & Addictive Disorders | ISSN: 2578-7276
- Journal Of Agronomy & Agricultural Science | ISSN: 2689-8292
- Journal Of AIDS Clinical Research & STDs | ISSN: 2572-7370
- Journal Of Alcoholism Drug Abuse & Substance Dependence | ISSN: 2572-9594
- Journal Of Allergy Disorders & Therapy | ISSN: 2470-749X
- Journal Of Alternative Complementary & Integrative Medicine | ISSN: 2470-7562
- Journal Of Alzheimers & Neurodegenerative Diseases | ISSN: 2572-9608
- Journal Of Anesthesia & Clinical Care | ISSN: 2378-8879
- Journal Of Angiology & Vascular Surgery | ISSN: 2572-7397
- Journal Of Animal Research & Veterinary Science | ISSN: 2639-3751
- Journal Of Aquaculture & Fisheries | ISSN: 2576-5523
- Journal Of Atmospheric & Earth Sciences | ISSN: 2689-8780
- Journal Of Biotech Research & Biochemistry
- Journal Of Brain & Neuroscience Research
- Journal Of Cancer Biology & Treatment | ISSN: 2470-7546
- Journal Of Cardiology Study & Research | ISSN: 2640-768X
- Journal Of Cell Biology & Cell Metabolism | ISSN: 2381-1943
- Journal Of Clinical Dermatology & Therapy | ISSN: 2378-8771
- Journal Of Clinical Immunology & Immunotherapy | ISSN: 2378-8844
- Journal Of Clinical Studies & Medical Case Reports | ISSN: 2378-8801
- Journal Of Community Medicine & Public Health Care | ISSN: 2381-1978
- Journal Of Cytology & Tissue Biology | ISSN: 2378-9107
- Journal Of Dairy Research & Technology | ISSN: 2688-9315
- Journal Of Dentistry Oral Health & Cosmesis | ISSN: 2473-6783
- Journal Of Diabetes & Metabolic Disorders | ISSN: 2381-201X
- Journal Of Emergency Medicine Trauma & Surgical Care | ISSN: 2378-8798
- Journal Of Environmental Science Current Research | ISSN: 2643-5020
- Journal Of Food Science & Nutrition | ISSN: 2470-1076
- Journal Of Forensic Legal & Investigative Sciences | ISSN: 2473-733X
- Journal Of Gastroenterology & Hepatology Research | ISSN: 2574-2566
- Journal Of Genetics & Genomic Sciences | ISSN: 2574-2485
- Journal Of Gerontology & Geriatric Medicine | ISSN: 2381-8662
- Journal Of Hematology Blood Transfusion & Disorders | ISSN: 2572-2999
- Journal Of Hospice & Palliative Medical Care
- Journal Of Human Endocrinology | ISSN: 2572-9640
- Journal Of Infectious & Non Infectious Diseases | ISSN: 2381-8654
- Journal Of Internal Medicine & Primary Healthcare | ISSN: 2574-2493
- Journal Of Light & Laser Current Trends
- Journal Of Medicine Study & Research | ISSN: 2639-5657
- Journal Of Modern Chemical Sciences
- Journal Of Nanotechnology Nanomedicine & Nanobiotechnology | ISSN: 2381-2044
- Journal Of Neonatology & Clinical Pediatrics | ISSN: 2378-878X
- Journal Of Nephrology & Renal Therapy | ISSN: 2473-7313
- Journal Of Non Invasive Vascular Investigation | ISSN: 2572-7400
- Journal Of Nuclear Medicine Radiology & Radiation Therapy | ISSN: 2572-7419
- Journal Of Obesity & Weight Loss | ISSN: 2473-7372
- Journal Of Ophthalmology & Clinical Research | ISSN: 2378-8887
- Journal Of Orthopedic Research & Physiotherapy | ISSN: 2381-2052
- Journal Of Otolaryngology Head & Neck Surgery | ISSN: 2573-010X
- Journal Of Pathology Clinical & Medical Research
- Journal Of Pharmacology Pharmaceutics & Pharmacovigilance | ISSN: 2639-5649
- Journal Of Physical Medicine Rehabilitation & Disabilities | ISSN: 2381-8670
- Journal Of Plant Science Current Research | ISSN: 2639-3743
- Journal Of Practical & Professional Nursing | ISSN: 2639-5681
- Journal Of Protein Research & Bioinformatics
- Journal Of Psychiatry Depression & Anxiety | ISSN: 2573-0150
- Journal Of Pulmonary Medicine & Respiratory Research | ISSN: 2573-0177
- Journal Of Reproductive Medicine Gynaecology & Obstetrics | ISSN: 2574-2574
- Journal Of Stem Cells Research Development & Therapy | ISSN: 2381-2060
- Journal Of Surgery Current Trends & Innovations | ISSN: 2578-7284
- Journal Of Toxicology Current Research | ISSN: 2639-3735
- Journal Of Translational Science And Research
- Journal Of Vaccines Research & Vaccination | ISSN: 2573-0193
- Journal Of Virology & Antivirals
- Sports Medicine And Injury Care Journal | ISSN: 2689-8829
- Trends In Anatomy & Physiology | ISSN: 2640-7752

Submit Your Manuscript: <https://www.heraldopenaccess.us/submit-manuscript>