"SUBCLINICAL" HYPOTHYROIDISM

AND THE LINKS TO THYROID HORMONE RESISTANCE, LOW BODY TEMPERATURES AND IODINE DEFICIENCY

by Arlan Cage, ND, LAc

THE PROBLEM

All too frequently you, a family member or a close friend may have been suffering with the classic constellation of symptoms for hypothyroidism: extreme fatigue, weight gain, dry brittle hair, dry skin. Many times friends or family will tell you "Hey, that sounds like your thyroid, you should go get checked out." After visiting your doctor, however, you're told "Your blood tests for thyroid are normal; there's nothing wrong with you." If you're one of the lucky ones, you may get sent home with nothing more than advice to "Get more sleep and eat better." Often, however, you may be sent home with a prescription for anti-depressants.

Is that the best patients with debilitating symptoms can hope for, being told "Its all in your head; here, have some psych meds until you no longer care about your problem."? Or are these increasing numbers of people reporting the same symptom pattern actually suffering from a straightforward, treatable condition? A quick review of the basic endocrine organs and hormones involved in thyroid function may help answer this question.

BASIC THYROID FUNCTION

Thyroid function begins with the pituitary gland, a tiny, pea-sized organ at the base of our brain connected to the hypothalamus. This gland is often referred to as the "master gland" of our endocrine system, since it generates controlling hormones for most of the body's other endocrine glands. One of these hormones is Thyroid Stimulating Hormone, or TSH. This hormone enters the blood stream and is transported to the thyroid gland itself, where it causes the production of Thyroid Hormones, of which there are two primary types: T3, the "active" form and T4, the "inactive" form.

Most of the hormone produced in the thyroid (about 80%) is T4. Most of the body's cells are able to convert the inactive T4 into active T3 when needed. T3 and T4 are used by every cell in every organ of the body to regulate metabolism – the rate at which the various organs do their respective jobs. Some of the T3 and T4 in circulation will trigger the pituitary to decrease production of TSH through a process known as negative feedback. These hormones engage in a delicate balancing act: as TSH goes up, so do T3 and T4; as T3 and T4 go up in response to TSH, the pituitary will decrease TSH production, causing a fall in the levels of the thyroid hormones, which in turn causes an increase in TSH production, and the cycle continues.

When you have a blood test for thyroid hormone levels in the blood stream, an underlying assumption is that, "if the hormones are in the blood, then they are also being absorbed into their target tissues." If this assumption is correct, then normal blood levels of thyroid hormone would mean normal levels of thyroid in the cells.

What if this assumption isn't true? Is there an easy way, short of a surgical biopsy, to determine whether or not the thyroid hormone is being properly absorbed by the body?

NORMAL METABOLISM, ENZYMES AND BODY TEMPERATURE

Thyroid hormone raises the metabolic rate of every cell it enters. Metabolism can be described as the sum total of all the biochemical reactions in the body. Virtually all of these reactions give off waste heat as a byproduct. This waste heat, in turn is what we measure as your body temperature. Throughout most of human medical history, even the earliest measurements, "normal" body temperature was determined to be 98.6°F, with only a very small deviation from this average.

This 98.6°F number is crucial, because every biochemical reaction in the body uses enzymes for these reactions to occur. Enzymes are proteins produced by the body which serve as catalysts – they make chemical reactions occur at higher rates than would be otherwise possible, but do not actually become part of the final products produced by those reactions. Normal enzyme function, in turn, is temperature-dependent. Deviating even a degree from their optimal temperatures will cause enzyme efficiency to decrease a significant percentage. For the enzymes of normal human physiology, the optimal temperature is our true normal body temperature of 98.6°F.

Starting in the 1980s and early 1990s, Dr. Dennis Wilson, MD, began observing some of these phenomena and developed treatment protocols for what has since become known as Wilson's Temperature Syndrome (WTS): signs and symptoms of hypothyroidism, combined with normal thyroid blood tests and a low body temperature. Dr. Wilson observed that in most cases, the patients were able to point to a specific time in their history where the problem began, and it usually involved a period of high stress, shock or physical illness, from which they never fully recovered.

In nature, while the short-term stress phenomenon we refer to as the "fight or flight" response is understood by even most of the general public, the long-term stress phenomenon is less well documented.

"HYPOTHYROIDISM" CONTINUES on NEXT PAGE

"HYPOTHYROIDISM" CONTINUES...

The only phenomenom in nature which seems to produce a long-term stress pattern is famine. In times of famine, the body's response is to slow down metabolism, conserve energy, and shut down portions of the body not needed for immediate survival, such as the reproductive system. I'll mention a bit more about this later on.

Our body is supposed to be capable of resuming normal function once the long-term stress is gone. Here in modern times, however, this doesn't seem to be happening. Too often patients report a period of stress or illness and are "never better since." Something appears to be interfering with the body's normal ability to recover. Apparently, low body temperatures and chronic stress aren't the whole story; something else is also going on.

IODINE AND THYROID HORMONE RESISTANCE

Dr. Guy Abraham, Dr. David Brownstein, and Dr. Jorge Flechas, over roughly the same time frame that Dr. Wilson was developing his WTS data, did extensive research into the role of Iodine in human physiology. They were partly inspired by very old medical literature that showed some of these same problems in the past were treated with high doses of iodine. Iodine is an essential mineral that is often thought of because of iodized salt and treatment for goiter, or enlarged thyroid glands, and the production of thyroid hormone.

Iodine is indeed crucial for the production of thyroid hormones. Less well known, however, is the fact that iodine is also used by the body as part of the structure for hormone receptors of every hormone on every cell in your body. If your whole body has sufficient levels of iodine, your hormone receptors are functional, hormones are easily absorbed by their target tissues, and your body is successfully able to communicate with itself. If you are deficient in iodine, however, the body will not be able to produce functional hormone receptors, and every hormonally driven body function may become impaired. This can include reproductive hormones, blood pressure control hormones, adrenal stress hormones, and thyroid/metabolic rate hormones.

Going back to our earlier discussion of why the body fails to increase metabolism after a period of long-term stress is over, if the body is deficient in iodine, simply telling the body to produce more thyroid hormone won't be effective if the rest of the body can't make functional receptors for thyroid hormone. This is the key missing link for why you can have "normal" blood tests for thyroid function, and still have every known symptom of hypothyroidism: *blood levels of the various thyroid hormones are normal, but none of that hormone is able to be absorbed into the cells which are screaming for it!*

What this amounts to is resistance of peripheral tissues to thyroid hormones. The thyroid is generating hormones, which enter circulation, but the target tissues are unable to absorb them. This is exactly analogous to Type II Diabetes and insulin resistance.

In my practice I routinely screen all new patients for temperature and I am amazed at how few actually have true normal body temperatures. I've measured some patients as low as 95.8°F, and values in the 96-97 degree range are common. These patients often report that they have "always been low" or "I've been low ever since my third child," or perhaps some other specific event. Many have even asked their medical doctors and been told that "low temperatures are normal now" even if the same patient had normal temperatures in the past. It is important when dealing with low body temperatures to note that ***common does not mean normal!***

Fortunately, testing for whole body iodine saturation is also easy. A 24 hour urine collection test following the administration of a fixed dose of iodine will determine the level of saturation of the body's tissues and hence the relative need for iodine. If the patient excretes more than 90% of the test dose of iodine in a 24 hour period, then the body's tissues are saturated and iodine deficiencies are probably not part of the clinical picture. If less iodine is excreted during the test, this means that the body is absorbing it and is not saturated. The lower the percent saturation, the greater the need for iodine. I routinely test patients whose saturation levels are 50% or less, and the lowest I've personally measured in a patient is 5%.

An important related point is that our bodies need iodine in two forms, and most iodine supplements only contain one type. Iodine, or the I^2 molecule, is one form, while Iodide, the I ion, is the other. The actual need for iodine averages between 10-15 milligrams per day, roughly 100 times higher than the RDA value of 150 micrograms per day. This number was determined by evaluating healthy populations who have little to none of the iodine deficiency illness, very similar to Weston Price's worldwide evaluation of healthy populations. Contemporary research has found Japan to have the lowest rates of iodine-deficiency disease, with an average iodine intake of approximately 13.8 milligrams per day.

Some patients respond and are able to return their body temperatures to normal using only supplemental iodine, coupled with the whole food nutritional approach I prescribe for all my patients. Others may also require support for their adrenal glands. Adrenal deficiency, aka Kidney Qi Deficiency in Oriental Medicine, is often a component of these patient's clinical pictures. In some instances, heavy metal toxicities may play a role and I will prescribe an appropriate detoxification and/or chelation program.

When these approaches alone aren't enough, I will prescribe bio-identical T3 hormone in what is termed the Wilson's Temperature Syndrome T3 Protocol, or WT3 Protocol for short. The reader is referred to Dr. Wilson's website and books for details on this protocol.

SUMMARY

In closing, Subclinical Hypothyroidism is NOT a disease of the thyroid gland itself; rather, it is a condition of Thyroid Hormone Resistance on the part of the body's other, peripheral tissues. Stress, low body temperatures and iodine deficiencies can all contribute to this phenomenon. Fortunately, as alluded to earlier, iodine deficiencies and subsequent low body temperatures are relatively easy to test for and to treat.

The reader is cautioned that it is

"HYPOTHYROIDISM" CONTINUES on NEXT PAGE

"HYPOTHYROIDISM" CONTINUES...

possible for low body temperature, iodine deficiences and thyroid hormone resistance to be present at the same time as actual thyroid problems such as overt hypothyroidism, hyperthyroidism and/or thyroid autoimmune conditions such as Grave's Disease or Hashimoto's Thyroiditis. These cases are definitely more complicated and require treatment principles beyond the scope of this article.

These same phenomena can also be part of the constellation of many other conditions. A patient with any endocrine dysfunction should be evaluated for iodine levels and low body temperatures, including fibrocystic breasts, breast cancer, ovarian cysts, polycystic ovarian disease, ovarian cancer, uterine fibroids, uterine cancer, Benign Prostatic Hypertrophy (BPH), prostate cancer and especially Type II Diabetes. There is some evidence that some Type II diabetics may be able to completely regulate blood sugars without medications using only iodine/iodide supplementation.

Women dealing with infertility should also be evaluated, since stress, hormonal irregulation and iodine deficiencies can all contribute to infertility. These factors, coupled with environmental toxins, are probably the greatest sources of our modern infertility "epidemic." I've yet to work with a woman who was dealing with infertility whose body temperature was normal or whose 24 hour iodine loading test was normal at the start of their treatment.

Heart disease, high cholesterol, Chronic Fatigue Syndrome, Fibromyalgia or any chronic infections are also conditions which can have WTS and Iodine deficiencies as part of their root cause. In short, any chronic illness which responds poorly to treatment or which your judgement tells you that "something else is going on" should be evaluated for WTS and Iodine deficiencies. 🕮

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Dr. Brownstein's books, *Iodine: Why You Need it, Why You Can't Live Without It,* and *Overcoming Thyroid Disorders,* are available from PPNF (see order page).

"HOMEOSTASIS" CONTINUES...

Antioxidants can protect cells against indigenous and exogenous free radicals. [Mobsen Meydani, "Impact of Aging On Detoxification Mechanisms," *NUTRITIONAL TOXICOLOGY*, (New York: Raven Press, LTD, 1994): 49-66]

Each of us ages differently. There are many factors to consider in the aging process. How many years have you abused your body with improper nutrition? Have you exercised regularly? Have you not let stress become distress? Have you kept your body in good alignment?

Now if you find yourself at age 60 or so, out of breath, out of shape, carrying excess pounds, with stiff joints, taking pharmaceutical drugs for some problem, having no agility, feeling general malaise, with elevated medical markers such as cholesterol, blood pressure, and glucose, there are many things you can do to bring your homeostatic mechanisms back to what they were 20 years ago. Those of you who are younger can start right now so you don't even have to ask those former questions. At any age you can slow the aging process and remove many symptoms from your body. We all have a genetic blueprint but we do not have to develop the diseases of our family's history if we keep our body in homeostasis. As to the speed at which you age, the choice is yours.

The best way for the body to regain homeostasis, and not have a compromised immune system, is through whole foods, removing the foods to which you react, stress reduction, exercise, and body alignment when necessary. 🕮

Resources:

Kenneth R. Pelletier, *Longevity: Fulfilling Our Biological Potential* (New York: Delacorte Press/Seymour Lawrence, 1978), 217.

"Aging Summer," Documentary television film for PBS on healthy aging U.S. Department of Health and Human Services (1993).

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