

# HYPOTHYROIDISM 101

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**H O T Z E**  
HEALTH & WELLNESS CENTER



## INTRODUCTION

Dr. Hotze is founder of Hotze Health & Wellness Center and author of the book *Hormones, Health, and Happiness*. He has enabled thousands of women and men to achieve optimal health using his customized 8-Point Treatment Regimen. If you would like a free evaluation regarding your health, you can contact his office by calling 877-698-8698.

*Notice: This book is intended as a reference guide, not as a medical manual. The information given here is designed to help you make informed decisions about your health. It is not intended as a substitute for any treatment that may have been prescribed to you by your doctor or therapist. If you suspect that you have a medical or emotional problem, we urge you to seek competent medical or psychiatric help.*

*The names of those whose cases are presented in this book have been changed to preserve their privacy.*

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## WHAT IS HYPOTHYROIDISM?

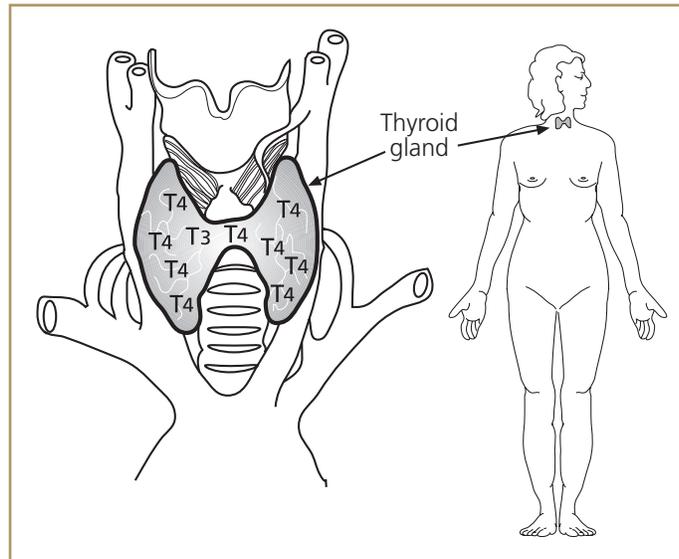
Hypothyroidism is a lack of thyroid hormone. It develops when the thyroid gland does not produce enough of the hormone, which controls the way the body uses energy. A lack of thyroid hormone affects all body systems.

Recent research as of February 2000 reported that as many as 10 million Americans suffer from hypothyroidism. However, there are those who suffer from hypothyroidism but have never been diagnosed with it. This would increase the number to 20 million Americans. Another interesting fact is that hypothyroidism affects women seven times more frequently than men. I will discuss this in further detail a little later but let's first understand how your thyroid gland functions.

## FUNCTIONS OF THE THYROID GLAND

### **THE SPARK PLUG INSIDE THE CELL**

Though you may think of the food you eat as a source of your energy, your body requires more than food to build and maintain itself. The energy currency inside your body is a molecule called adenosine triphosphate (ATP). Your cells generate ATP from glucose through a complex series of chemical reactions that require the presence of thyroid hormones.



### **THE THYROID GLAND**

*The thyroid gland, a butterfly-shaped organ located in the neck, produces two forms of thyroid hormone, T3 and T4. About 93 percent of its hormone production consists of T4; the remainder is T3.*

Allow me to use an analogy to help you better understand how this process works. When you put gasoline in your car's tank, this simple act is not sufficient to make your car run. The gasoline must flow through the fuel line and into the engine's combustion chamber. Inside the combustion chamber, the spark plugs must give off a spark to rupture the bonds between the gasoline molecules, which releases energy. This energy then drives the pistons, making the car run. The excess energy is expelled through the tailpipe as heat.

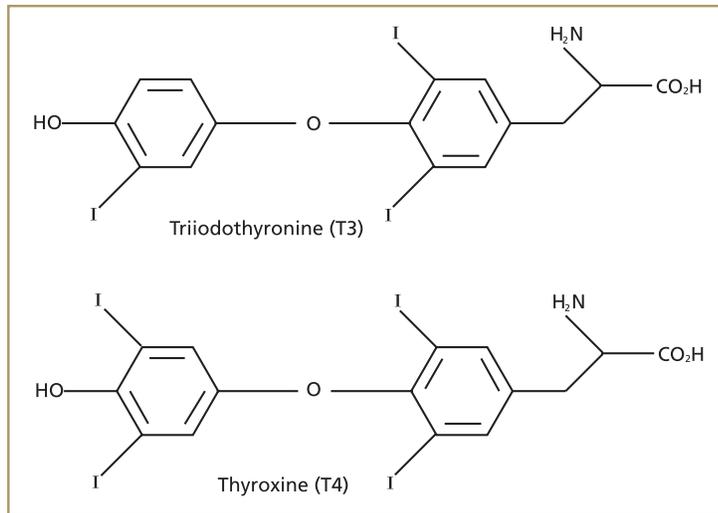
In your body, thyroid hormone functions as the spark plug of the cell. It causes the combustion of glucose, converting the energy stored within its bonds into ATP, which fuels the cellular reactions that keep your body humming along. As in your car, the excess energy is generated as heat, which keeps your body warm.

If you have an eight-cylinder car, but only seven spark plugs are working, then your car will run, but it will run rough and will not perform optimally. In the same way, if your cells do not have adequate levels of thyroid hormone, then the energy contained in the glucose molecule will not be efficiently converted to the energy molecule of the cell, ATP. The result will be a decrease in energy and lowered metabolism. If your thyroid gland were removed, your body would wind down like a toy soldier and cease to function altogether. Without thyroid replacement therapy, you would be dead within a year or two.

Other than surgical removal of the thyroid gland, there are two primary causes for a decline in the cells' supply of thyroid hormones: inadequate production of thyroid hormones by the thyroid gland and inadequate absorption of thyroid hormones by the cells. We're going to look at these two problems in greater detail in a moment. But before we begin, let me clarify one thing.

I have been speaking of thyroid hormone as if it were a single hormone. However, there are actually two thyroid hormones: triiodothyronine (T3) and thyroxine (T4). These hormones look quite similar except for the number of

iodine atoms they contain: triiodothyronine has three and thyroxine has four, thus the names T3 and T4. The thyroid gland produces very different quantities of these two hormones. Approximately 93 percent of its thyroid hormone production is in the form of T4, and the remainder is in the form of T3. Despite its higher level of production within the thyroid gland, T4 is considered an inactive form of thyroid hormone. Only T3, or T4 that has been converted into T3 inside the cells, can be used to produce energy in our cells.



### T3 AND T4

*T3 (triiodothyronine) and T4 (thyroxine) have almost identical chemical structures. The only difference is that T3 contains three iodine (I) atoms and T4 contains four.*

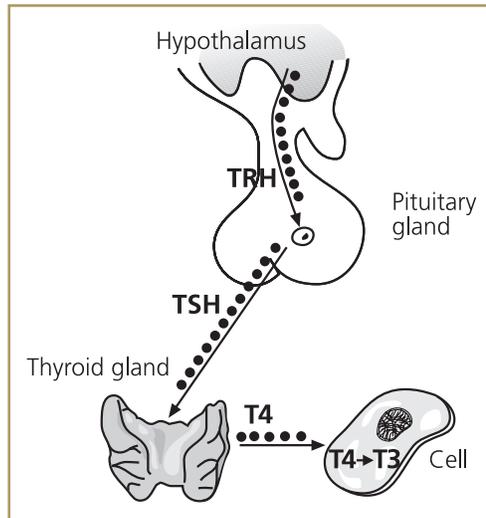
## A FAULTY THERMOSTAT

Think of the thyroid gland as a heater. Just as your heater does not produce heat independent of the thermostat setting, your thyroid gland does not produce T3 and T4 independent of the signals from your internal thermostat, your pituitary gland. This tiny organ, located in the brain, is highly sensitive to changes in blood levels of thyroid hormone. When blood levels drop below a certain concentration, the pituitary gland responds by secreting thyroidstimulating hormone (TSH). TSH travels to the thyroid gland, where it stimulates the production of more thyroid hormones.

### FROM GLAND TO CELL.

When the body's energy requirements increase, a region of the brain called the hypothalamus secretes thyrotropin-releasing hormone (TRH). TRH signals the pituitary gland to secrete thyroid-stimulating hormone (TSH). In turn, TSH stimulates the thyroid gland to produce T4. T4 is secreted by the thyroid gland into the

bloodstream and travels to distant cells. After it enters a cell, T4 must be converted into T3, the active form of thyroid hormone, in order to be used to fuel metabolic reactions.



The thyroid gland itself has no way of detecting when more thyroid hormone is needed. So if the pituitary gland is diseased and fails to produce TSH, the thyroid gland will not produce thyroid hormones, even when blood levels drop precipitously. Blood tests of a person with hypothyroidism due to a pituitary problem will show low levels of both TSH and T4, indicating that the thyroid gland is behaving “normally” in response to the subnormal activity of the pituitary gland.

## MY BACKGROUND

### **HYPOTHYROIDISM: THE HIDDEN EPIDEMIC**

Before I entered the field of allergy medicine, I believed that hypothyroidism was a relatively rare condition in the United States. The introduction of iodized salt in the 1920s had virtually eliminated iodine deficiency, a major cause of hypothyroidism. In my sixteen-year career as a physician, I had seen only one case of myxedema, end-stage hypothyroidism, and that was during my internship at St. Joseph’s Hospital in Houston in 1976.

Myxedema takes years to develop and most patients with hypothyroidism are identified and treated long before this late stage occurs. The patient I saw during my internship had inexplicably gone without medical care until his condition was so severe that he required hospitalization. My mentor, Dr. Fred, was able to diagnose this patient simply by looking at him lying in his hospital bed.

One night while I was on duty, I was called by this patient's wife to his room because he had quit breathing. I had to insert a breathing tube into his windpipe and attach the tube to a ventilator. He was then transferred to the intensive care unit where the chief resident, Dr. Charles Butler, gave him intravenous thyroid hormone. Despite this frightening episode and the severity of this patient's condition, he made a remarkable recovery. In fact, five days after his near-death experience, he was chasing a nurse around his hospital room.

Although this patient's dramatic improvement made a lasting impression on me, it wasn't until I entered the field of allergy medicine that the evaluation and treatment of hypothyroidism became a cornerstone of my medical practice. For that, I have to thank Richard Mabray, M.D., a physician from Victoria, Texas.

At the 1992 Pan American Allergy Society conference in Houston, I had the opportunity to visit Dr. Mabray, a very successful obstetrician and gynecologist who also treated allergies. Dr. Mabray advised me to read *Hypothyroidism: The Unsuspected Illness*, by Broda Barnes, M.D. I did, and the insights that I gained from Dr. Barnes's book changed not only my life but also the lives of thousands of patients that I have treated for hypothyroidism.

### **THE UNSUSPECTED ILLNESS**

Broda Barnes was a brilliant physician who studied physiology at the University of Chicago in the 1930s. His

doctoral dissertation concerned the role of the thyroid gland in rabbits. Dr. Barnes noted that when rabbits had their thyroid glands removed, their development was impaired. They soon became extremely lethargic, experienced hair loss, and contracted recurrent infections. If a rabbit was given supplemental thyroid hormone, its health improved dramatically. Without it, however, its lifespan was half the length of rabbits with intact thyroid glands.

After he received his Ph.D., Dr. Barnes went on to earn a medical degree from the University of Chicago Medical School. As a physician, Dr. Barnes encountered numerous patients who had been categorized by other physicians as hypochondriacs. After listening to his patients' multiple, vague complaints and examining them, it dawned on Dr. Barnes that these patients reminded him of the rabbits lacking thyroid glands that he had studied. He decided to supplement these patients with thyroid hormone. To his delight, most of the patients responded beautifully to this therapy. Their physical symptoms disappeared, and their energy and well-being significantly improved.

Dr. Barnes's book, based on nearly forty years of medical experience, was published in 1976—the same year that I had encountered the patient with myxedema. At that time, the medical profession viewed hypothyroidism as a relatively rare condition that was best diagnosed by measuring blood levels of thyroid hormones and best treated with synthetic hormones. Dr. Barnes's message was threefold: hypothyroidism was a common but too often unrecognized

problem; blood tests were not very useful for diagnosing this condition; and natural desiccated thyroid hormone, such as Armour Thyroid, was the best form of treatment.

Since the release of his book, hypothyroidism has become a regular topic in women's magazines. However, despite the greater media attention that hypothyroidism now receives, most American women who have hypothyroidism remain undiagnosed. Even those who suspect that low thyroid function is the underlying cause of their fatigue, weight gain, depressed mood, brain fog, and other symptoms seldom get help from their physicians. The reason for this is that most physicians have been influenced by a herd mentality. They don't treat patients, they treat lab values.

But Dr. Barnes was right—lab tests aren't the best way to diagnose hypothyroidism or to assess whether treatment is working (refer to Brenda's and Kathryn's Story).

## DO YOU HAVE HYPOTHYROIDISM?

Because thyroid hormones promote the burning of glucose for energy, the most noticeable effects of hypothyroidism—fatigue, weight gain, and sensitivity to cold—have to do with a slowdown in energy and heat production. However, thyroid hormones also regulate tissue growth and development, help maintain blood pressure and fluid balance, and affect the workings of virtually every cell in

your body. For this reason, a deficiency state can cause a wide range of symptoms.

The brain is highly sensitive to hormone depletion, and patients with low levels of thyroid hormones often experience depression and problems with concentration and short-term memory. Hair loss, dry skin, and brittle nails are common features of low thyroid function.

A deficiency of thyroid hormones can affect levels of sex hormones, causing menstrual abnormalities in women and a loss of libido in both sexes. Hypothyroidism can also impair fertility and, if it is present during pregnancy, can cause miscarriage, premature delivery, or stillbirth.

#### **PHYSICAL SIGNS & SYMPTOMS OF HYPOTHYROIDISM**

- Fatigue
- Weight gain
- Cold extremities
- Cold intolerance
- Decreased sweating
- Headaches
- Muscle and joint pain
- Enlarged thyroid gland
- Menstrual irregularities
- Infertility
- Miscarriages
- Loss of libido
- Recurrent infections
- Allergic disorders
- Decreased mental sharpness “brain fog”

- Depression or mood swings
- Hoarseness
- Slow speech
- Dry skin
- Hair loss
- Constipation
- Fluid retention
- Skin pallor, pastiness and puffiness
- Enlarged tongue with teeth indentations
- Brittle fingernails with ridging
- Loss of hair on the outer edge of the eyebrows
- Low blood pressure
- Slow pulse rate
- Low basal body temperature
- Tingling and/or numbness in extremities
- Elevated cholesterol and triglycerides

Depending upon the degree of hypothyroidism, a patient may have one, some, or all of these symptoms.

## CAUSES

### **IODINE DEFICIENCY**

I mentioned another cause of inadequate thyroid hormone production earlier: iodine deficiency. Remember, each thyroid hormone molecule contains three or four atoms of iodine. If your diet contains insufficient iodine, the thyroid gland will be unable to synthesize adequate amounts of thyroid hormone, even if the pituitary gland is sending an

urgent message to do so. Iodine-deficiency hypothyroidism is characterized by an enlarged thyroid gland, or goiter. Blood tests will generally show high levels of TSH and low levels of T4, indicating that the pituitary gland is functioning normally but the thyroid gland is failing to respond to the signal. This type of hypothyroidism is now relatively rare in the US, although goiter regions still exist in many areas of the world.

### **AGING**

Thyroid hormone levels decline with age, with predictable effects on energy and well-being. The problems experienced by my patients during midlife are commonly a result of an imbalance in their hormones and an overall decline in hormone production. The negative effects of this hormonal imbalance/decline play important roles throughout the body, in the heart, brain, muscles, bones and other major organs and tissues.

### **ALLERGIES**

At the 1992 Pan American Allergy Society conference, Dr. Mabray advised me to evaluate my allergy patients for thyroid disease. "You will find that many of your allergy patients suffer from autoimmune thyroiditis," he said.

Autoimmune thyroiditis, also called Hashimoto's thyroiditis in honor of the scientist who first identified it, is similar to the allergic response in that it occurs when the immune system overreacts, launching an attack on something that normally would be considered innocuous. The difference is

that, in autoimmune thyroiditis, the target is not an ingested or inhaled substance, but the body's own cells. Antibodies bind to the thyroid gland and prevent the manufacture of thyroid hormone. Antibodies also may bind to the circulating thyroid hormone, making it unavailable to the cells.

In 1992, I began testing all of my patients for thyroid antibodies and found that allergies and hypothyroidism traffic together like thieves in the night. A full 28 percent of my female allergy patients had this disease, as did 18 percent of my male allergy patients. This is much higher than the incidence found in the general population. In 1996, the American Academy of Otolaryngic Allergy awarded me the Sam Sanders Award for Clinical Research for my study of the relationship between autoimmune thyroiditis and allergic disorders.

### **HORMONAL IMBALANCE**

Hypothyroidism affects women seven times more frequently than men. The higher incidence of genetically inherited autoimmune thyroiditis among women is one reason why. The effect of female hormonal imbalance is another.

The menstrual cycle is characterized by changing ratios of the female hormones estrogen and progesterone. During the first half of the cycle estrogen dominates, and during the second half progesterone dominates. However, as the ovaries age, women produce decreasing amounts of progesterone, resulting in a condition called estrogen dominance.

Estrogen dominance causes the liver to produce increasing levels of thyroid-binding globulin (TBG), a protein that has a strong attraction to circulating thyroid hormones. When TBG latches onto a thyroid hormone, the hormone is no longer free to enter into the cells and be used for metabolic reactions.

Even in the most ideal of circumstances, only 0.05 percent of thyroid hormone circulating in the bloodstream—a mere five parts in ten thousand—remains unbound and available to the cells. The remainder—a full 99.95 percent—is bound to TBG and other proteins in the blood. In women with estrogen dominance, the situation is even worse, due to the higher levels of TBG that are produced by the liver.

Birth control pills, pregnancy, and postmenopausal estrogen supplementation also increase levels of TBG, compounding the problem for women. In contrast, the male hormone testosterone has no effect on TBG and actually stimulates the conversion of the inactive thyroid hormone, T4, to the active thyroid hormone, T3, within the cells. It's no mystery why women are much more likely than men to experience low thyroid function.

### **ADRENAL FATIGUE**

Some patients with hypothyroidism do not regain their energy even when they are taking natural thyroid. I was puzzled by this phenomenon until I learned about Dr. Barnes's use of natural cortisol and read Dr. Jefferies' book. Dr. Jefferies had found that adrenal fatigue often occurs in

conjunction with hypothyroidism, and that, in the absence of adequate cortisol, thyroid hormone replacement was less effective.

The reason is that when the adrenal glands are weak, even normal thyroid activity is a burden. Adding supplemental thyroid hormone may result in initial improvement in energy levels and other symptoms, but as the adrenal glands become more exhausted, energy production is shut down. The solution is not more thyroid hormone. What is called for is adrenal support with small doses of cortisol.

In my experience, as well as that of Drs. Jefferies and Barnes, lowdose cortisol can make a tremendous difference in the energy and well-being of patients with hypothyroidism. Not only does it improve energy, raise body temperature, and increase resistance to infection, it also helps the body utilize thyroid hormone. Natural cortisol is especially helpful for patients with autoimmune thyroiditis, an extremely common cause of hypothyroidism. Like other autoimmune conditions, autoimmune thyroiditis can develop when the adrenal glands are stressed, especially following pregnancy or at menopause. As documented in Dr. Jefferies' book, natural cortisol actually reduces levels of thyroid antibodies, enhancing the effectiveness of thyroid hormone.

## HYPOTHYROIDISM AND HEART DISEASE

Dr. Broda Barnes was a brilliant scientist. When a friend of his experienced a heart attack in 1950, Dr. Barnes reviewed his medical history, searching for clues. He found that his friend had suffered from symptoms of hypothyroidism for years, but had not sought treatment. Could this have been a factor in his heart attack?

Dr. Barnes knew of the relationship between hypothyroidism and high cholesterol and realized that his patients who were being treated for hypothyroidism had a remarkably low rate of heart attacks, despite the fact that the incidence of heart attacks was rising in the general population.

This observation led him to conduct a twenty-year study of the relationship between supplemental thyroid hormone and reduced risk of heart attacks. He was fortunate to have a landmark study against which to compare the heart attack rate in his own patients: the Heart Disease Epidemiology Study, also known as the Framingham Study, which began in 1949 under the sponsorship of the National Heart Institute and which continues to this day. In this study, five thousand residents of Framingham, Massachusetts, were selected to be followed medically for the rest of their lives in order to determine the cause of heart disease. Each person was followed with annual medical examinations and blood work. Their diets, smoking habits, and lifestyles were documented. However, these patients did not receive supplemental thyroid hormone.

In 1970, Dr. Barnes had 1,569 patients on natural thyroid hormone who were observed for a total of 8,824 patient years. These patients were classified by age, sex, elevated cholesterol, and high blood pressure, and compared to similar patients in the Framingham Study. Based on the statistics derived in the Framingham Study, seventy-two of Dr. Barnes's patients should have died from heart attacks; however, only four patients had done so. This represents a decreased heart attack death rate of 95 percent in patients who received natural thyroid hormone—a truly remarkable finding.

Doctors often recommend that patients with an increased risk of heart attack take a daily aspirin supplement, pointing to studies suggesting that this will reduce the incidence of heart attacks by 28 percent. Why not consider using natural thyroid hormone supplementation to reduce the death rate from heart attacks? Remember thyroid production declines as we age. Fifty-year-olds produce one half the thyroid hormones that they made during their twenties.

## CASE STUDIES

### **BRENDA'S STORY**

Brenda is a forty-year-old mother of two and a substitute teacher. Around the age of thirty-five, Brenda's health took a turn for the worse. She became depressed and was chronically exhausted, even though she exercised. She

felt cold all the time, had recurrent infections, and began losing her hair. She was constipated despite the fact that she ate a high-fiber diet and drank plenty of water. And her libido had plummeted, a fact that distressed both her and her husband.

Within the course of a year, Brenda sought the care of a gynecologist, an internist, a gastroenterologist, and a family practitioner, trying to get help for her many problems. While some said she had symptoms of hypothyroidism, they all insisted that her blood tests were normal. Their diagnosis could be summed up in five words: "Nothing is wrong with you."

Brenda knew that something was physically wrong. As she told me later, "Two doctors told me that my fatigue and other problems were all age related. That was when I was thirty-five. I remember thinking, 'Thirty-five, give me a break. Maybe sixty-five!' I was always tired, even though I got a full night's sleep. I knew that I had some sort of a physical problem, if only I could find a doctor to figure it out."

### **KATHRYN'S STORY**

Kathryn's story parallels that of Brenda in many ways. This forty-four-year-old mother of three works as an executive administrator for a large corporation in Houston. Kathryn was diagnosed with hypothyroidism at the age of thirty-five and was prescribed a synthetic thyroid medication, Synthroid. Kathryn had taken Synthroid (levothyroxine

sodium) daily for the past nine years, yet she still had numerous symptoms of a low thyroid condition.

Kathryn suffered from extreme fatigue and had problems with her thinking and short-term memory, which made it difficult for her to function in her career. When I asked her how she managed, she said, "I use every ounce of energy to make it through the week so I can rest up on the weekends, only to have to start all over again on Monday. My friends and family tell me that I am grumpy, but if they felt the way I do, I'm sure they would be grumpy too."

Kathryn told me that she had gained seventy pounds in the past decade, although she watched what she ate. "I've seen all kinds of doctors to try to figure out why I can't lose weight," she said. "I've been to a family practitioner, ob-gyn, endocrinologist, and even a nutritionist. The doctors gave me prescriptions for diet pills and told me to stay away from fatty foods. But I didn't eat those things anyway!"

Kathryn was extremely discouraged about her lack of energy and her inability to lose weight. She was also discouraged by the dismissive attitude of the physicians she had consulted. "It's all in your head," one doctor had told her. Another had said, "You're in your forties and it's time for your body to start changing. The way you feel is normal."

Kathryn told me that she knew her problem was hormonal, but her endocrinologist insisted that she was on the right

dose of Synthroid because her blood tests were normal. "But I don't feel normal," she told me.

## **TWO HAPPY ENDINGS**

Kathryn was one of the millions of patients who were mismanaged because of conventional medicine's bias against natural thyroid. Fortunately, when I switched her from Synthroid to Armour Thyroid, every aspect of her health improved dramatically. As she put it, "Mentally, I feel super. Physically . . . well, let me put it to you this way—I went from a size eighteen to a size eight." Kathryn was a fashion merchandising major in college, and she is thrilled to be able to go into a store and find clothes in her size. Her skin is no longer dry, her hair is thicker and fuller, and she feels more attractive and more confident. Even her friends have noticed the difference and have commented on how much happier she seems.

Brenda has also made a dramatic turnaround since beginning Armour Thyroid supplement therapy. "My energy has gone up from a two to a nine out of ten," she said. "Instead of directing my children's activities from the couch, I now get up with them in the morning and help them get ready for school." She also has more energy to do things during the day with friends. And now that her thyroid hormones are at an optimal level, Brenda no longer suffers from low libido—a change that both she and her husband appreciate.

When I asked Brenda if she had any advice for other women suffering from low energy and depression, she said, "It may take some detective work and some perseverance, but if you know that you have a health problem, keep searching until you find a doctor who will listen to you. Try different doctors until you find one who is willing to treat your underlying problem and not dismiss you as a hypochondriac. You'll know it was worth the trouble when you finally start to feel better."

After several years as an allergist, I began to notice an interesting pattern among my allergy patients. While my male patients typically had a lifelong history of allergies, many women were consulting me for help with allergies that had appeared, seemingly out of the blue, in midlife. For some women, childbirth seemed to be the trigger. For others, the onset of allergies was associated with a change in their menstrual cycles.

It became obvious to me that there must be a relationship between allergic disorders and female hormone fluctuations in midlife. However, I was an allergist, not a gynecologist. When I determined that a woman needed help with hormonal problems, I referred her to a gynecologist. But one day after work, I was sitting at my desk going through my mail when I came across a monograph by Julian Whitaker, M.D., on the therapeutic use of natural hormones. Because I was having great success treating hypothyroidism with

natural thyroid replacement, I was eager to read what Dr. Whitaker had to say about this topic.

That evening at home, I read the chapter on natural thyroid. Dr. Whitaker's writings confirmed my own experience in treating patients with low thyroid function. Symptoms, not blood tests, are the best way to diagnose and manage hypothyroidism, he wrote, and natural thyroid extracts such as Armour Thyroid are the best way to treat this very common condition.

## DIAGNOSING HYPOTHYROIDISM— LAB TESTS OR SYMPTOMS?

A constellation of symptoms are suggestive of low thyroid function. Yet, as Brenda's and Kathryn's stories demonstrate, most physicians do not give these symptoms much credence. Instead, they rely on blood tests to diagnose hypothyroidism, and if the tests come out normal, the patient is labeled a hypochondriac or told that she is depressed and sent off with a prescription for an antidepressant.

If a physician relies solely on blood tests to determine whether or not a patient has hypothyroidism, then what is the purpose of the office visit? What do the clinical history of the patient and the findings from the physical examination really matter? Why not just draw the patient's blood for

study and save her the time, expense, and humiliation of an office visit?

Dr. Fred had diagnosed a patient's myxedema simply by looking carefully at the patient lying in his hospital bed. He had encouraged me to consider every bit of information available to me, including the evidence of my own eyes and ears, when making a diagnosis. "Don't treat lab values," he had said. "Treat patients."

The single most important tool in determining a patient's thyroid status is a thorough review of the patient's symptoms and a physical examination. Laboratory data can be helpful to confirm the diagnosis, but when the results of lab tests do not correspond to the patient's signs and symptoms, it is the lab tests that should be considered suspect— not the patient. Let me explain why.

### **PATIENTS DON'T LIE—LAB TESTS DO**

I have a healthy skepticism of lab tests, based on my own clinical experience with these tests. The same blood samples from several of my patients have been sent to different labs for measurement of their thyroid hormone levels, and the results have varied by as much as 50 percent. The most that can be said about a lab test is that it is a snapshot of what is going on in the blood at one moment in time. However, thyroid hormone blood levels vary throughout the day and their actions are affected by disease processes, prescription

drugs, other hormones that the body produces, and even environmental chemicals.

Also, the “normal laboratory range” of thyroid hormones is an arbitrary value, defined statistically as plus or minus two standard deviations from the mean. This so-called normal range is as wide as the Grand Canyon. In practice, it means that approximately 90-95 percent of the population will always fall within the normal range. However, I assure you that 90-95 percent of the population does not feel healthy, well, and full of energy.

Not only that, but the arbitrarily defined “normal” value has actually changed over time. Between 1991 and 2002, the normal laboratory range for the free thyroxine (free T4) blood test was lowered by 15 percent, from 0.90-2.00 ng/dl to 0.76-1.70 ng/dl. What this means is that an individual in 1991 who had a free T4 value of 0.80 ng/dl would have been classified by a conventional doctor as hypothyroid, but an individual with an identical T4 value in 2002 would be told that her thyroid function was in the normal range and would be denied treatment. Yet these two patients, separated in time by eleven years, likely would have had numerous symptoms in common—symptoms that are highly responsive to thyroid hormone replacement therapy.

## **DECLINING HORMONES = DECLINING HEALTH**

Leaving aside the problems of conflicting lab test results and variable definitions of what is “normal,” there is another reason why lab tests should not be the sole factor in determining whether an individual has hypothyroidism: thyroid hormone levels decline with age, with predictable effects on energy and well-being. It is the relative decline in your thyroid hormone level that matters, not your level compared to some arbitrarily defined standard.

Let’s say that as a healthy twenty-five-year-old, your free T4 level was 1.60 ng/dl—the high end of the “normal” range. By the age of fifty, your free T4 level might be as low as 0.80 ng/dl—the low end of the “normal” range. This represents a 50 percent decline in the thyroid hormone that is available for use by your cells. Since thyroid hormones enable your cells to generate energy, is it any wonder that as your thyroid hormone level declines, your energy level also decreases?

If a doctor relied solely on a lab test to evaluate your thyroid function, he would tell you that your condition is “normal” but you wouldn’t feel normal with 50 percent less thyroid hormone. To ensure that you have plenty of energy and feel healthy, your doctor should strive to maintain your thyroid hormone level in the range that is optimal for you.

This is the approach I take with my patients. Yes, I do perform blood tests, primarily to measure free thyroxine (free T4) and to determine whether thyroid antibodies are present. I

also look at the total cholesterol and LDL (“bad” cholesterol) levels because these are often elevated in patients with hypothyroidism. However, my primary criterion for diagnosis—and for evaluating the effects of treatment—is how the patient feels.

If you came to my office with symptoms indicative of hypothyroidism, even though your thyroid hormone levels might be in the so-called “normal” range, I would likely offer you a therapeutic trial of thyroid hormone replacement. I would start you on a very low dose and then slowly increase this until your symptoms diminish.

An individual with hypothyroidism must be treated gently, like a car on a cold winter’s day. When you get into a cold car and start the engine, it often knocks. Cold air comes out of the heat vents. If you gun the accelerator, you might throw a rod in the engine. Instead, you let the engine warm up slowly and then take the car on the road. Likewise, in the use of thyroid supplementation, small doses are prescribed initially and increased gradually until the symptoms are relieved. The final dose varies from patient to patient.

## SOLUTIONS

### **WHICH FORM OF THYROID HORMONE REPLACEMENT IS BEST?**

Synthroid is the number one prescribed treatment for hypothyroidism. In 2002, it was the fourth most prescribed drug in the United States. But a drug's popularity is no guarantee of its efficacy, as Kathryn's experience with this synthetic hormone shows.

I had been trained to use synthetic thyroid drugs myself, but when I spoke with Dr. Mabray at the 1992 Pan American Allergy Society conference, I asked him which product he used. Dr. Mabray told me that he treated hypothyroidism with Armour Thyroid, a natural prescription thyroid supplement that he felt was much more effective than the synthetic thyroid drugs. While I had great respect for Dr. Mabray, I thought it wise to seek a second opinion. For that, I turned to Dor Brown, M.D., the patriarch and cofounder of the Pan American Allergy Society.

Dr. Brown lived in Fredericksburg, Texas, and even though he was in his eighties, at that time he had one of the largest allergy practices in the country. He is also one of the finest clinicians I have ever known. Although he is board certified in both ear, nose, and throat surgery and ophthalmology, his practice is multifaceted. Patients have traveled from all over the country seeking his expertise for a host of medical conditions.

When I asked Dr. Brown whether I should use Armour Thyroid or the synthetic thyroid replacement drugs, he recommended, "Use Armour Thyroid."

When I asked why, he retorted, "Because it works!"

My clinical experience in treating some six thousand patients over the past thirteen years has convinced me that Dr. Brown was absolutely right. Because thyroid and allergic disorders often go hand in hand, I have had the opportunity to evaluate many patients for allergic disorders who were already being treated for hypothyroidism with synthetic thyroid. Most of these patients had significant symptoms of low metabolic function, even while taking synthetic thyroid. Once these patients were converted to Armour Thyroid and given the appropriate dosage, their symptoms of hypothyroidism markedly improved.

There is a very good explanation for why so many people languish on synthetic thyroid. Synthroid, Levoxyl, Levothroid, and other levothyroxine sodium products contain only a synthetic version of T4, the inactive form of thyroid hormone. Taking T4 without T3 is like replacing only seven of the eight spark plugs in your car's engine. Your body's "engine" will run, but it will never function as well as it should.

In contrast, Armour Thyroid, which is obtained from the thyroid gland of pigs, contains the same thyroid hormone

molecules that the body produces, T3 and T4, along with nutrients from the thyroid gland. Armour Thyroid is an FDA- approved product that is formulated according to the exacting standards of the United States Pharmacopoeia (USP). To ensure that the product is consistently potent from batch to batch and tablet to tablet, analytical tests are performed on the raw material and the actual tablets.

### **T3 + T4 = IMPROVED MOOD AND COGNITION**

Given the choice, most patients with hypothyroidism would prefer to take a thyroid hormone product that includes both T3 and T4. This isn't just my observation: it's the conclusion of a landmark study published in the New England Journal of Medicine on February 11, 1999. In this ten-week study, patients with hypothyroidism were randomized into two groups. One group received isolated T4 preparations for the first five weeks and a combination of T3 and T4 for the last five weeks; in the second group, this sequence was reversed. All of the capsules looked alike, so the patients were unaware of which treatment they were receiving during each five-week period.

On the last day of each five-week period, patients were administered standardized psychological tests to assess their levels of depression, anxiety, anger, and other traits. They were also given cognitive tests of memory, attention, learning, and other functions. On eleven of seventeen measures of mood and cognition, there was no significant difference between the two treatments.

However, on six measures, the combination of T3 and T4 proved superior to isolated T4. In particular, when patients received both thyroid hormones, their symptoms of fatigue, depression, and anger were significantly improved, and they performed better on tests of attention, mental flexibility, and learning.

In addition to performing better on standardized tests, patients rated their own mood and physical symptoms as significantly improved on the combination product in comparison to isolated T4. When asked which treatment they preferred, the majority preferred the combination product, stating that they had more energy, could concentrate more easily, and simply felt better.

### **SYNTHETIC THYROID DRUGS: A TARNISHED HISTORY**

Effectiveness is the most important criterion in choosing a thyroid replacement product. But equally important is the safety of the product. Here again, natural thyroid has proven superior. Natural thyroid extracts have been in use for over a century and were approved by the FDA in 1939, a year after the passage of the Food, Drug, and Cosmetic Act. Synthroid, Levothroid, Levoxyl, and other synthetic T4 products entered the market years later without FDA approval, under the mistaken assumption that these products were not new drugs and that their manufacturers were not required to prove their safety or effectiveness.

However, in 1997, the FDA ruled that oral levothyroxine sodium products were indeed “new drugs” and that manufacturers who wanted to continue marketing these products must submit a new drug application for approval. This decision was based on a long history of potency and stability problems with these drugs. In fact, between the years 1991 and 1997, there were ten recalls of levothyroxine sodium tablets, involving more than 100 million tablets. These recalls occurred primarily because these products had a lower potency than claimed or had lost their potency before their expiration dates. In some cases, patients required hospitalization due to problems with their thyroid medication.

Despite this tarnished history, many physicians continue to prescribe Synthroid and other brands of synthetic thyroid hormone and remain opposed to Armour Thyroid. If synthetic thyroid hormone costs twice as much and is less effective, why do they use it? In my opinion, it is largely due to the massive marketing campaigns of the pharmaceutical companies that hold patents on these drugs. Because naturally occurring substances, including thyroid hormone, cannot be patented, these products have a lower profit margin, and the companies that make them do not have millions of dollars at their disposal for marketing. It is a battle of David versus Goliath. In this case, it is Goliath, the pharmaceutical industry, known as Big Pharma, that wins.

The loser is the patient who is prescribed the less effective, more expensive product.

## IN CLOSING

Are you sick and tired of feeling sick and tired? Has mainstream medicine not addressed any of your health problems? Have you grown weary of medical specialists placing you in one category rather than looking at the big picture? Are you tired of doctors treating you like a number and not listening to what you are saying? Do you want to feel healthy, vibrant and strong like you did when you were younger?

At the Hotze Health & Wellness Center we will listen and work with you to achieve optimal health. We will look at you as a person and not just another patient. If you want to achieve health and wellness naturally, we recommend that you contact one of our Health & Wellness Consultants who can assist you in answering your questions regarding our program. Feel free to visit [www.HotzeHWC.com](http://www.HotzeHWC.com) or contact them toll free at (877) 698-8698.

In addition, if you want to stay on top of what is happening within the medical industry, I would strongly urge you to sign up for our newsletter. We will keep you updated and informed with events that are happening in the medical community.