



The Thyroid Balance

Nutrition Plan

*Balancing Thyroid
Hormones by Optimizing
Nutrient Levels*



WELCOME

If you've been struggling with weight gain, constipation, fatigue, mood swings, or any other unwanted symptoms caused by thyroid hormone imbalances, we welcome you to start the Thyroid Hormone Nutrition Plan. This program was designed to optimize nutrient levels in the body so you can naturally balance thyroid hormone levels.

This truly innovative nutrition program breaks through all dietary barriers and harnesses the power of food and supplements so you can start feeling right in your own body. With a food as medicine focus, this nutrition program provides the step-by-step system to regaining optimal health.



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Always seek the advice of your physician or other qualified healthcare provider with any questions you may have regarding a medical condition or treatment and before undertaking a new healthcare regimen, and never disregard professional medical advice or delay in seeking it because of something you have read in this guide. Consult your physician before starting on a diet or exercise program.

TABLE of Contents

PART ONE

Introduction	1
--------------	---

PART TWO

The Thyroid Hormone Truth	4
---------------------------	---

PART THREE

The 4-Step System to Balancing Thyroid Hormones	18
---	----

PART FOUR

Recommended Lab Testing	28
-------------------------	----

PART I

INTRODUCTION

Do you suffer from any of the following symptoms?

- Chronic Fatigue
- Mood Swings
- Memory Problems
- Slow Metabolism
- Constipation
- Weight Gain
- Dry Skin
- Brittle Nails
- Thinning Hair
- Muscle Aches
- Cold Sensitivity
- Irregular Menstrual Cycle

If so, your thyroid hormones maybe to blame. A sluggish or underactive thyroid can be the root cause to many unwanted symptoms. Think about it.....how many times have you tried weight loss programs but the number on the scale didn't budged as much as you wanted? Or did you purchase hair growth products because of thinning hair? Many times, we contribute undesirable symptoms to just being part of the overall aging process when in fact, a thyroid hormone imbalance can be the culprit behind the issues. By fixing and correcting the thyroid hormone imbalance, these nagging symptoms soon disappear. Optimal thyroid hormone levels will enable our hair to grow, the pounds to drop, and our mood to improve.

Have You Experienced This?

Over the past few years, you gained an extra 10 – 20 pounds of unwanted weight, particularly around the stomach area. Waking up in the morning requires multiple cups of coffee and by midafternoon, you feel like crashing because the fatigue is unbearable. But at night, it's difficult to fall asleep and stay asleep, even when you're exhausted. The vicious cycle of poor sleep, no energy, and the added weight gain begins to dampen your mood where you feel more depressed. And further compounding how lousy you feel, you start noticing your hair is thinning, nails becoming more brittle, and your skin is dried out.

This “New You” is not what you want, especially when your family and friends start noticing that you’re a different person. It’s time to make a change but you’re left wondering, what can be wrong with me?

You start asking yourself these questions.

Why am I gaining weight?

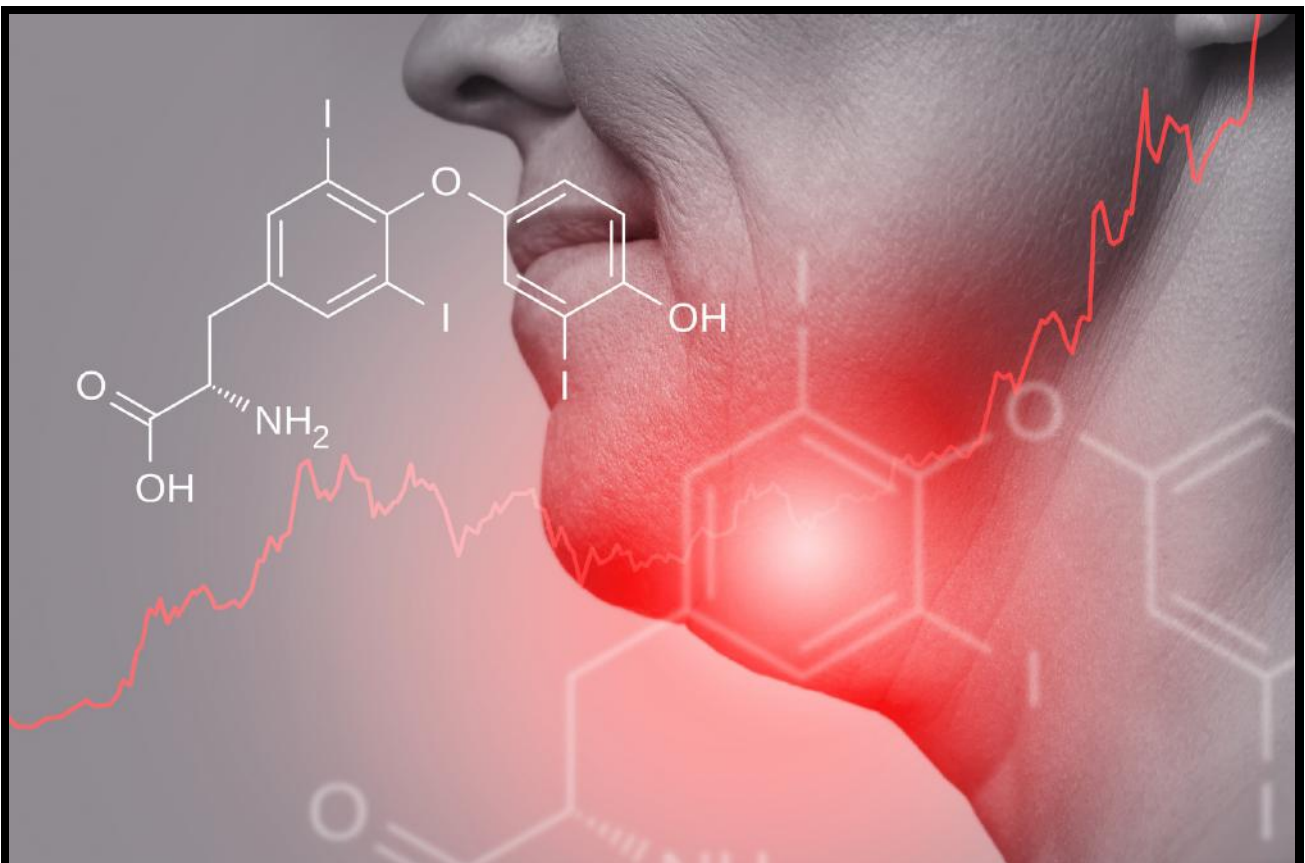
Why am I feeling depressed?

Why am I always so tired?

Why can’t I sleep throughout the night?

Why does my hair, skin, and nails look so bad?

At first, you start searching online about these symptoms and maybe read about a magical supplement or diet you can try which miraculously may have you start feeling normal again. You buy the supplement or start the diet but after a couple weeks, you don’t see a noticeable change in how you look or feel. It’s time to call your doctor and schedule an appointment to see if they can find out what is wrong. An appointment with your primary care physician is scheduled and you begin to feel a little hope that someone is finally going to provide answers.



Fast forward a few weeks later and you get a call from the doctor's office.

I have what? You just received a diagnosis from the doctor's office of hypothyroidism. You're left wondering and have more questions. What does this mean and is this the cause to all my health problems? What caused this thyroid issue? The only answer you get is that the doctor is prescribing a thyroid medication to help "control" the issue. But wait..... how long do I have to take this medication? The answer is usually you must take this medication for a prolonged period of time to help manage the thyroid hormone issue.

A dual sense of relief with confusion now sets upon you. You finally get an answer to the possible cause to your health issues, but then you don't like the recommended solution of having to be on a medication for possibly the rest of your life. There must be another way, right?

"There is more than one way to support thyroid hormone health."

If you're like most of my clients, you have either been previously diagnosed with hypothyroidism and were prescribed a thyroid medication or you may suspect you have a thyroid hormone issue, but your doctor is not performing the necessary lab testing to discover the issue. In both situations, it's frustrating. On one hand, a diagnosis of a thyroid hormone problem provides answers to why you are possibly feeling the way you do, but the solution may not be ideal. On the other hand, you suspect you have a thyroid hormone issue, but no one is helping to identify if this is the possible cause of your problems. You are feeling a sense of hopelessness, despair, frustration, and confusion no matter which situation you are experiencing.

Until Now.....

Prior to reading this book, you were more than likely left wondering "Are there natural solutions to supporting my thyroid hormones and if so, what are they?"

In the Thyroid Hormone Nutrition Plan, we are going to explore how thyroid hormones work in the body. Next, we will discuss how many chronic and unwanted health symptoms can be the result of a thyroid hormone imbalance. Lastly, we are going to provide the step-by-step food and nutrition system to naturally restore thyroid hormone optimization. You can finally take back your health and support thyroid hormone balance after following the Thyroid Hormone Nutrition Plan.

PART TWO

THE THYROID HORMONE TRUTH

Understanding the function of thyroid hormones, along with medical disorders associated with thyroid hormone imbalances is important prior to starting an all-natural support program. In this section, we are going to explore:

- Thyroid Hormones & How They Work
- Thyroid Hormone Function
- Thyroid Hormone Lab Testing
- Thyroid Hormone Medical Conditions
- Thyroid Hormone Replacement Therapies & Medications

Thyroid Hormones & How They Work

One of the top hormone imbalances which can cause an array of unwanted symptoms is thyroid hormone disorders. Located in the front of the neck and shaped like a small butterfly, the thyroid gland produces tiny chemical messenger hormones that send signals to other parts of the body which are responsible for metabolic functions. Too little or too much thyroid hormones can disrupt the delicate equilibrium in the body. Finding the right balance of thyroid hormones is essential to restoring optimal health.

But how do I fix a problem if I don't know how it even works?

Fixing a thyroid hormone imbalance is a lot easier if you have a basic understanding to how thyroid hormones worked in the body. There are many moving components to the development, release, control, and maintenance of thyroid hormones and when one bodily process is dysfunctional, it can disrupt the normal rhythm of thyroid hormones.

Think of how a car operates. It needs an engine to work, and the engine requires fuel to turn on. Further, the car needs an electronic communication system to send signals to the engine on how much fuel to use, to slow down, and to speed up. The thyroid hormone system has a similar process to it.

The Engine

As a car engine requires multiple parts for it to work, so does the same concept for thyroid hormones. The hypothalamus and pituitary glands located in the brain, in combination with the thyroid gland are the engine parts needed for thyroid hormone production, control, and maintenance. The hypothalamus releases thyrotropin-releasing hormone (TRH) which stimulates the pituitary gland to release thyroid-stimulating hormone (TSH) which then sends signals to the thyroid gland to make and release thyroxine hormones (T4) and triiodothyronine hormone (T3).

The Fuel

The engine is a critical component to a car's overall performance. Without an engine, a car will not run. And without fuel (either gas or electric), an engine will not operate. The need for the right amount, right type, and right quality of fuel is needed for the engine to run smoothly. If your car is constantly low in fuel, it most likely will sputter or experience power surge issues. And if you put in the wrong type of fuel, such as putting in diesel fuel into a car that requires gasoline fuel, then the engine will stop working. And if you use regular gasoline and not premium quality gasoline like some cars require, the performance of the engine and the car will decline.

The fuel required to make the thyroid hormone system run is nutrients. Vitamins, minerals, amino acids, and fatty acid nutrients from foods and supplements are the building blocks or fuel needed to help the engine (hypothalamus, pituitary, and thyroid glands) run smoothly.



Thyroid Nutrient Fuel

- Iodine (Mineral)
- Selenium (Mineral)
- Iron (Mineral)
- Zinc (Mineral)
- Copper (Mineral)
- Magnesium (Mineral)
- Tyrosine (Amino Acid)
- Vitamin A (Vitamin)
- Vitamin B-Complex (Vitamin)
- Vitamin D (Vitamin)
- Vitamin E (Vitamin)
- Omega 3 (Fatty Acid)

The Communication System

The engine, fuel, and wiring system from the engine to the car are all needed to properly allow the car to drive and operate. When there are communication issues in the wiring from the engine to the car, a disruption occurs. The car may slow down or speed up, not run correctly, or completely shut down because of faulty wiring.

The same scenario occurs when the communication wiring in the thyroid hormone system becomes dysfunctional. Thyrotropin-releasing hormone (TRH), thyroid-stimulating hormone (TSH), thyroxine hormone (T4), and triiodothyronine hormone (T3) are the “chemical messenger” wires needed for the thyroid hormone system. When there is a disruption in these hormones, signals are sent back to the hypothalamus, pituitary, and thyroid glands to either make too much or too little more of these hormones. Faulty communication messaging can slow your body down, speed it up, or completely shut it down with chronic exhaustion.

The Protection

Another factor in maximizing the effectiveness of the car and engine is the protection system. The general wear and tear from rust, water, and other elements can drastically affect the performance of the car. Placing a protective wax on the car helps shield it from the weather, cleaning the car eliminates dirt, and regular oil changes are all steps taken to protect the car and engine.

With the thyroid hormone system, it too must be taken care of for ultimate performance. As the weather and dirt can cause issues with the engine and car, free radicals and an overactive immune system in the body can cause issues with thyroid hormones. Protecting the thyroid hormone system from free radical damage and balancing an overactive immune system are required for optimal thyroid function.

Thyroid Hormone Function

Hopefully, you now have more of an understanding on how the thyroid hormone system works. But what does it do is another question. You might not understand the exact mechanisms behind how an engine, fuel, and car wiring works but more than likely, you know the overall function to it. The car engine provides the power to the car for it to drive and move. The thyroid hormone system is like the engine, fuel, and wiring system to the car. It provides the body with the necessary cellular metabolic functions to run and move on a daily basis. From energy levels to bowel movements, the thyroid hormone system is a vital component to many internal metabolic processes.

The Top 10 Thyroid Hormone Functions

- ❶ **Body Weight & Metabolism** – Thyroid hormones help regulate body weight, fat burning, and food metabolism (1).
- ❷ **Heart Health** – Thyroid hormones are associated with cholesterol and triglyceride production (2), along with the regulation of blood pressure (3).
- ❸ **Digestion** – Thyroid hormones help control gut motility and could be responsible for constipation and diarrhea (4).
- ❹ **Male & Female Fertility** – Thyroid hormones regulate sex steroid hormones, sperm, and ovarian function (5).
- ❺ **Bone Maintenance** – Thyroid hormones contribute to bone growth and development (6).
- ❻ **Mood** – Thyroid hormones may impact our overall mood (7).
- ❼ **Energy** – Thyroid hormones contribute to mitochondria cellular energy (8).
- ❽ **Skeletal Muscle** – Thyroid hormones help develop, repair, and grow muscle (9).
- ❾ **Skin, Hair, & Nails** – Thyroid hormones are associated with the health of skin, hair, and nails (10).
- ❿ **Sleep** – Thyroid hormones help regulate the body's circadian rhythm and sleep (11).

If you suffer from constipation, poor sleep, low energy, sore muscles, depression, weight gain, thinning hair, brittle nails, dry skin, or heart health issues, you may have a thyroid hormone imbalance causing these issues. The thyroid hormone system is responsible for many metabolic functions in the body and an imbalance in thyroid hormone levels, could contribute to unwanted symptoms and medical disorders.

If you suspect your thyroid hormones are causing your symptoms, the next step would be to get lab testing to identify the possible dysfunctions.

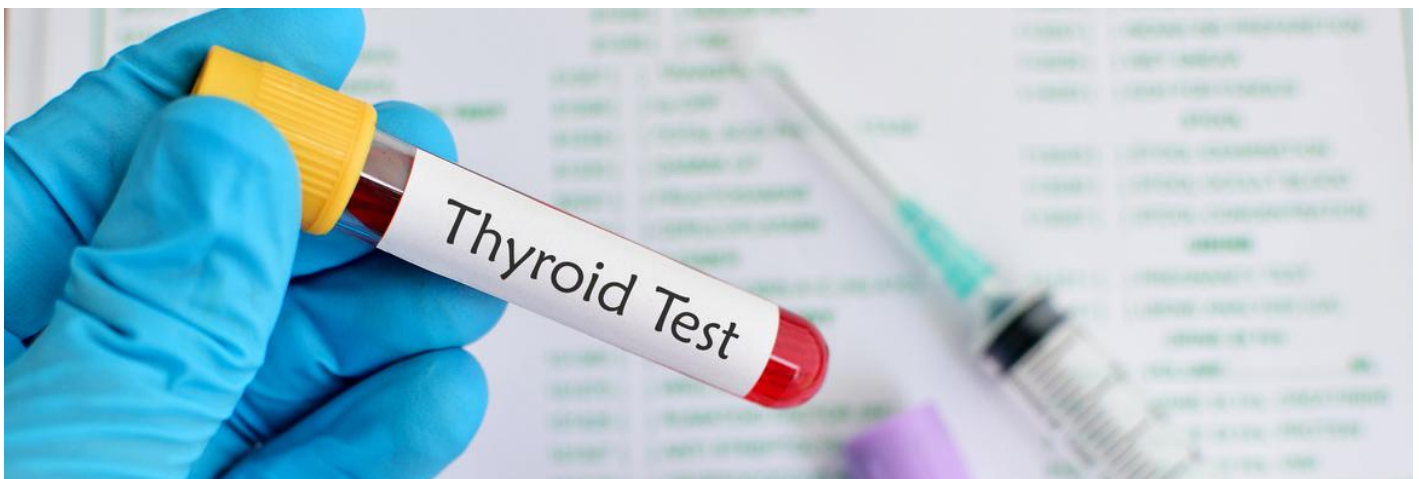
Thyroid Hormone Lab Testing

If you've had lab testing done on your thyroid, your health practitioner likely only ordered a thyroid-stimulating hormone (TSH) lab panel. This lab biomarker, even though very useful, is the most basic screening tool in discovering a thyroid hormone dysfunction.

Think of the last time you had a car problem, and you took the car to a mechanic to inspect. Did the mechanic only test the car battery, or did they perform a comprehensive car inspection to identify why the car wasn't working? Most likely, the mechanic performed a comprehensive inspection to identify the possible issues. After discovering the issues, the mechanic fixed each issue, so the car was back to normal. You would think our health practitioners would do the same when trying to identify the underlying issues to our health problems, but this couldn't be farther from the truth.

In our traditional conventional medical system, we have been trained to place band aids on symptoms rather than digging deeper to find the root cause of the problem. I don't think your mechanic would insert a tire plug into a tire that has a large hole in it. Rather, they would take the tire off and fix it and then tell you what could have possibly caused the tire hole. Unfortunately, in our current medical community, we are often just given a tire plug to fix the immediate problem rather than taking off the wheel, replacing it, and then identifying what caused the hole so we don't create another hole in the tire.

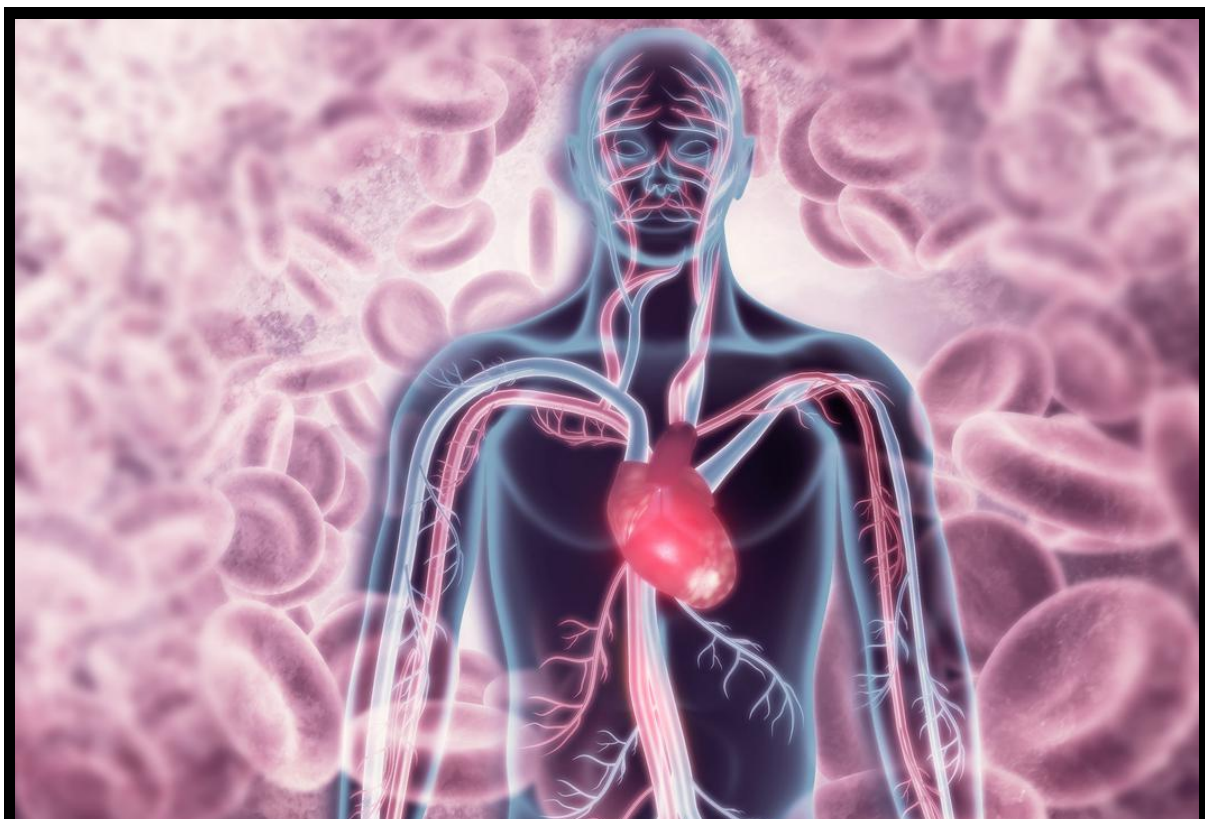
As your own patient advocate, you must demand the appropriate lab testing from your practitioner so you can dig deeper into how your thyroid is functioning. There are many lab biomarkers which may not only help identify "if" you have a thyroid hormone issue, but also the possibly reason "why" you have the thyroid hormone problem. By understanding the "why" behind your thyroid hormone issue, you could then find a solution to permanently fix the issue rather than just place a band aid on it. A band aid on a thyroid issue, in the context of the traditional medical community, is comparative to being on a medication for the rest of your life to help control the problem rather than fix it. If you're reading this book, I would assume you are looking for other options than having to be on medications for the rest of your life.



Thyroid Hormone Lab Biomarkers – Foundational

(The foundational thyroid hormone lab biomarkers provide an overview to thyroid hormone function.)

- **Thyroid-Stimulating Hormone (TSH)** – Thyroid-stimulating hormones stimulate the thyroid gland to produce more T4 and T3 thyroid hormones.
- **Thyroxine (T4)** – Thyroxine hormones control how much energy your body uses and is involved in digestion, brain development, bone health, heart health, and muscle function.
- **Thyroxine, Free (T4)** – Free thyroxine hormones are unbound and is the more bioavailable form of T4 in the body.
- **Triiodothyronine (T3)** – Triiodothyronine is the more active thyroid hormone in the body, compared to T4, and it is also associated with metabolism, digestion, brain function, bone health, heart health, and muscle function. Approximately 80% of the T3 hormone in the body is converted from the T4 thyroid hormone.
- **Triiodothyronine, Free (T3)** – Free triiodothyronine hormone is the more active form of the T3 hormone which is unbound and more bioavailable in the body.
- **Reverse T3 (rT3)** – The inactive form of T3 hormone.
- **Thyroglobulin Antibody** – Antibodies to a protein called thyroglobulin. This lab biomarker assists in understanding if there is a thyroid autoimmune disorder of Hashimoto's or Graves' Disease.
- **Thyroglobulin Peroxidase Antibody** – Antibodies to an enzyme found in the thyroid gland. This lab biomarker assists in understanding if there is a thyroid autoimmune disorder of Hashimoto's or Graves' Disease.



Thyroid Hormone Lab Biomarkers – Comprehensive

(The comprehensive thyroid hormone-related lab biomarkers provide more information on how other lab biomarkers in the body maybe influencing thyroid function or how thyroid imbalances can be impacting various health conditions.)

- **Complete Blood Count with Differentials (CBC)** – The Complete Blood Count panel measures red blood and white blood cell health. Thyroid disorders may impact red blood cell or white blood cell health.
- **Comprehensive Metabolic Panel (CMP-14)** – The Comprehensive Metabolic Panel measures liver health, kidney health, metabolism, and electrolytes. Thyroid disorders may impact these biomarkers.
- **Lipid Panel** – The Lipid Panel measures cholesterol and triglycerides. Thyroid disorders can increase cholesterol and triglyceride levels.
- **HbA1c** – Hemoglobin A1c biomarker measures average blood sugar levels over a 3-month period. Thyroid disorders may contribute to Diabetes and blood sugar imbalances.
- **Cortisol** – Cortisol biomarker measures the amount of cortisol hormone in the body. Elevated cortisol hormone levels shift the thyroid into a more inactive state.
- **Iodine** – Iodine biomarker measures the amount of the mineral iodine in the body. Iodine provides the building blocks for thyroid hormone production.
- **Selenium** – Selenium biomarker measures the amount of the mineral selenium in the body. Selenium assists in the production of thyroid hormones and protects against free radical damage.
- **Magnesium** – Magnesium biomarker measures the amount of the mineral magnesium in the body. Magnesium helps convert the inactive thyroid hormone T4 into the active thyroid hormone T3.
- **Zinc** – Zinc biomarker measures the amount of the mineral zinc in the body. Zinc assists with proper thyroid hormone metabolism.
- **Iron** – Iron biomarker measures the amount of the mineral iron in the body. Iron assists with proper thyroid hormone metabolism.
- **Ferritin** – Ferritin biomarker measures how much iron your body stores. Low ferritin levels may indicate low iron levels.
- **Vitamin D** – Vitamin D biomarker measures the amount of vitamin D in the body. Vitamin D may help protect against thyroid autoimmune disorders.

If you suspect a thyroid hormone disorder is behind your unwanted symptoms, at the very least, the foundational thyroid hormone biomarkers can provide an in-depth overview of how your thyroid is functioning. If you would like greater insight to how thyroid hormone imbalances maybe impacting other bodily systems or if there is a deficiency in specific minerals the thyroid needs for fuel, then adding the comprehensive thyroid hormone-related biomarkers to a lab panel may provide a 360-degree view of everything related to thyroid hormones in the body.

What does it mean if my lab results come back, and the thyroid hormone biomarkers are high or low?

Thyroid Hormone Medical Conditions

A diagnosis of a thyroid hormone medical condition can be quite frankly, nerve-racking. What does this mean? How is this going to impact my health? Do I have to be on medications for this? These questions and others start swarming through your head after a diagnosis.

Placing a diagnosis label upon your thyroid medical condition is a start in the right direction. At least you have the peace of mind knowing your thyroid hormones are imbalanced and these imbalances could be contributing to your overall symptoms. There are four primary medical conditions associated with thyroid hormone disorders.

- ❶ Hypothyroidism
- ❷ Hyperthyroidism
- ❸ Hashimoto's Autoimmune Thyroiditis
- ❹ Graves' Autoimmune Thyroiditis



Hypothyroidism

An underactive or slow thyroid may result in a diagnosis of hypothyroidism. This condition happens when there are not enough thyroid hormones in the body and metabolism slows down. Hypothyroidism is a very common thyroid medical condition which affects up to 5% of the general population, with another 5% of people still undiagnosed (12). Further, females have a significantly higher risk of hypothyroidism compared to males.

A diagnosis of hypothyroidism is typically given when TSH lab biomarker levels are too high and T4 thyroid lab biomarkers are too low. If both the T4 and T3 hormone levels are normal, and TSH is elevated, then a diagnosis is typically given of subclinical hypothyroidism.

Hypothyroidism Symptoms

- Fatigue
- Constipation
- Weight Gain
- Puffy Face
- Muscle Weakness
- Muscle Pain
- Menstrual Irregularities
- Memory Problems
- Depression
- Thinning Hair
- Brittle Nails
- Dry Skin
- Sensitivity to Cold



Hyperthyroidism

The opposite of an underactive thyroid is an overactive thyroid. This medical condition occurs when there is too much thyroid hormones in the body and metabolism becomes too fast. Similar to hypothyroidism, hyperthyroidism also affects women more than men.

A diagnosis of hyperthyroidism is typically given when TSH lab biomarkers levels are too low and T4 lab biomarkers are too high. These lab biomarkers, in addition to symptoms, are usually combined to determine the severity of the thyroid hormone medical condition.

Hyperthyroidism Symptoms

- Weight Loss
- Fast Heartbeat
- Irregular Heartbeat
- Insatiable Hunger
- Anxiety & Irritability
- Diarrhea
- Tremors
- Sweating
- Fatigue
- Poor Sleep
- Muscle Weakness
- Irregular Menstrual Cycle
- Sensitivity to Heat



Hashimoto's Autoimmune Thyroiditis

Hashimoto's is an autoimmune disorder which affects the thyroid gland. An overactive immune response from the body attacks the thyroid cells and tissue. Hashimoto's is the most common cause of hypothyroidism in developed countries (13) and affects women more than men.

A diagnosis of Hashimoto's is typically given when TSH lab biomarker levels are too high and T4 thyroid lab biomarkers are too low, along with elevated levels of thyroglobulin peroxidase antibodies or thyroglobulin antibodies.

Hashimoto's Symptoms

- Goiter (Enlarged thyroid gland)
- Other Symptoms Similar to Hypothyroidism



Graves' Autoimmune Thyroiditis

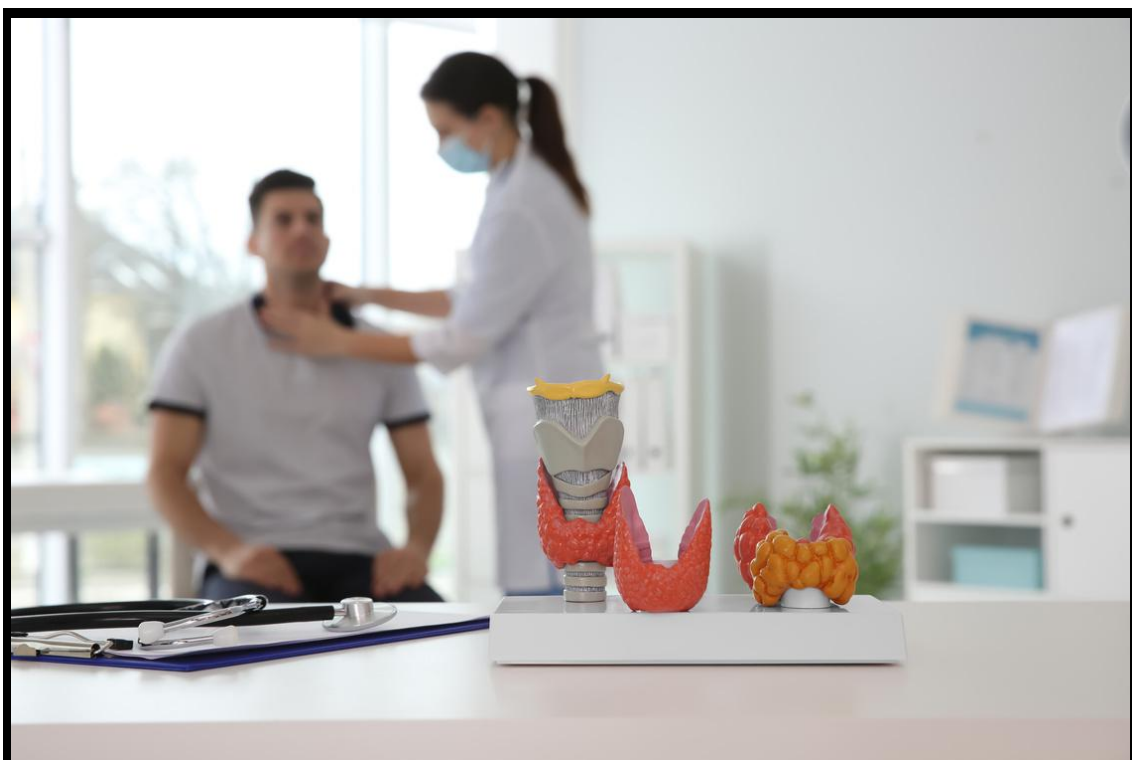
Like Hashimoto's Autoimmune Thyroiditis, Graves' Autoimmune Thyroiditis is an autoimmune disorder which affects the thyroid gland. An overactive immune system attacks the thyroid gland, tissue, and cells. Graves' is the most common cause of hyperthyroidism (14) and affects women more than men.

A diagnosis of Graves' disease is typically given when TSH lab biomarkers levels are too low and T4 lab biomarkers are too high, along with elevated levels of thyroglobulin peroxidase antibodies or thyroglobulin antibodies.

Graves' Symptoms

- Goiter (Enlarged thyroid gland)
- Bulging Eyes
- Puffy Eggs
- Blurred Vision
- Reddish & Thick Skin
- Other Symptoms Similar to Hyperthyroidism

The type of thyroid medical diagnosis now provides a path forward in knowing how to treat the issue. If you visit a medical doctor, usually a thyroid medication is prescribed to help manage the symptoms.



Thyroid Hormone Replacement Therapies & Medications

Learning to manage or control thyroid hormone health issues usually involve a thyroid hormone replacement therapy. A thyroid hormone replacement therapy is typically not a cure to the problem but rather a band aid in many instances. To be clear, I'm not saying thyroid hormone replacement therapies are the only approach to supporting thyroid health, I'm just stating thyroid replacement therapies are usually the first line therapy to a thyroid medical condition. And at times, people may need a source of thyroid hormone replacement therapy because their symptoms are drastically affecting overall quality of life.

If you would like a more all-natural approach to balancing thyroid hormones, I've seen many people who have optimized their own thyroid health by changing their diet, improving nutrient optimization, and other similar remedies. In this section, we are just going to explore the various types of thyroid medications and replacement therapies.

****Talk to your healthcare practitioner about your thyroid medications. The information below is for educational purposes only****

Synthetic Thyroid Medications

- **Levothyroxine** – Levothyroxine is a prescription medicine used to treat hypothyroidism or an enlarged thyroid gland. Levothyroxine provides more synthetic T4 thyroid hormones for the body to use. Synthroid®, Levoxyl®, Unithyroid®, and Tirosint® are common thyroid medication brand names to the generic medication of Levothyroxine.
- **Liothyronine** – Liothyronine is a prescription medicine used to treat hypothyroidism. Liothyronine provides more synthetic T3 thyroid hormones for the body to use. Cytomel® is a common thyroid medication brand name of Liothyronine.
- **Anti-Thyroid** – Anti-thyroid medications are prescribed to treat hyperthyroidism. These medications interfere with the body's ability to use iodine to produce more thyroid hormones. Methimazole is a medication prescribed to block thyroid hormone production.

Natural Thyroid Medications

- **Porcine Thyroid Extract** – Natural thyroid medicines are produced from desiccated animal thyroid extracts, usually from porcine or pigs. These prescription medications usually contain T4 and T3, along with trace amounts of T2 and T1 and are recommended for hypothyroidism. Armour Thyroid® and Nature-Throid® are two common brand names for all-natural thyroid medications.

Natural Thyroid Supplements

- **Porcine or Bovine Thyroid Extract** – Natural glandular thyroid extracts produced from desiccated cow or pig thyroid glands may help support thyroid hormone health.

In this section, we reviewed the basics of how thyroid hormones work, thyroid hormone functions in the body, thyroid lab biomarkers, thyroid medical conditions, and thyroid replacement therapies. In the next section, we are going to explore the all-natural approach to supporting thyroid hormone health with vitamins, minerals, amino acids, fatty acids, and phytonutrients.



PART THREE

THE 4-STEP SYSTEM TO BALANCING THYROID HORMONES

Unlocking the secrets to optimized thyroid health begins with restoring nutrient levels in the body. These nutrients are needed for thyroid hormones to work properly and a deficiency or imbalance in any nutrient can impair thyroid hormone production.

The Thyroid Hormone Nutrition Plan focuses on a 4-step approach to restoring thyroid hormone balance. With each targeted phase of the plan, specific nutrients are used to revitalize thyroid health.

<p>Step 1 – Thyroid Hormone Production</p> <p>Specific nutrients provide the building blocks to thyroid hormone production. With a deficiency in any of these nutrients, the body's ability to naturally produce thyroid hormones diminishes. Specific nutrients and foods which balance thyroid hormone production can support TSH, T4, & T3 levels.</p>	<p>Step 2 – T4/T3 Thyroid Hormone Conversion</p> <p>Creating thyroid hormones is the first step. But the next step for successful thyroid health is the conversion of T4 to the active T3 hormone. This conversion process, when impaired, can negatively affect thyroid hormone optimization. Specific nutrients and foods which assist in the conversion of T4 to T3 is needed.</p>
<p>Step 3 – Thyroid Hormone Disruptor Detoxification</p> <p>Toxic chemicals and pollutants from food and the environment can disrupt natural thyroid hormone production and conversion. These thyroid disrupting chemicals interfere with both the communication signaling process and the absorption of key nutrients.</p>	<p>Step 4 – Thyroid Hormone Immune Protection</p> <p>For some people, their bodies create antibodies against their thyroid hormones. The conditions of Hashimoto's and Graves' disease are two autoimmune disorders which have an overactive immune response destroying thyroid hormones. Antioxidant protection and balancing an overactive immune system can naturally support thyroid health.</p>

STEP 1

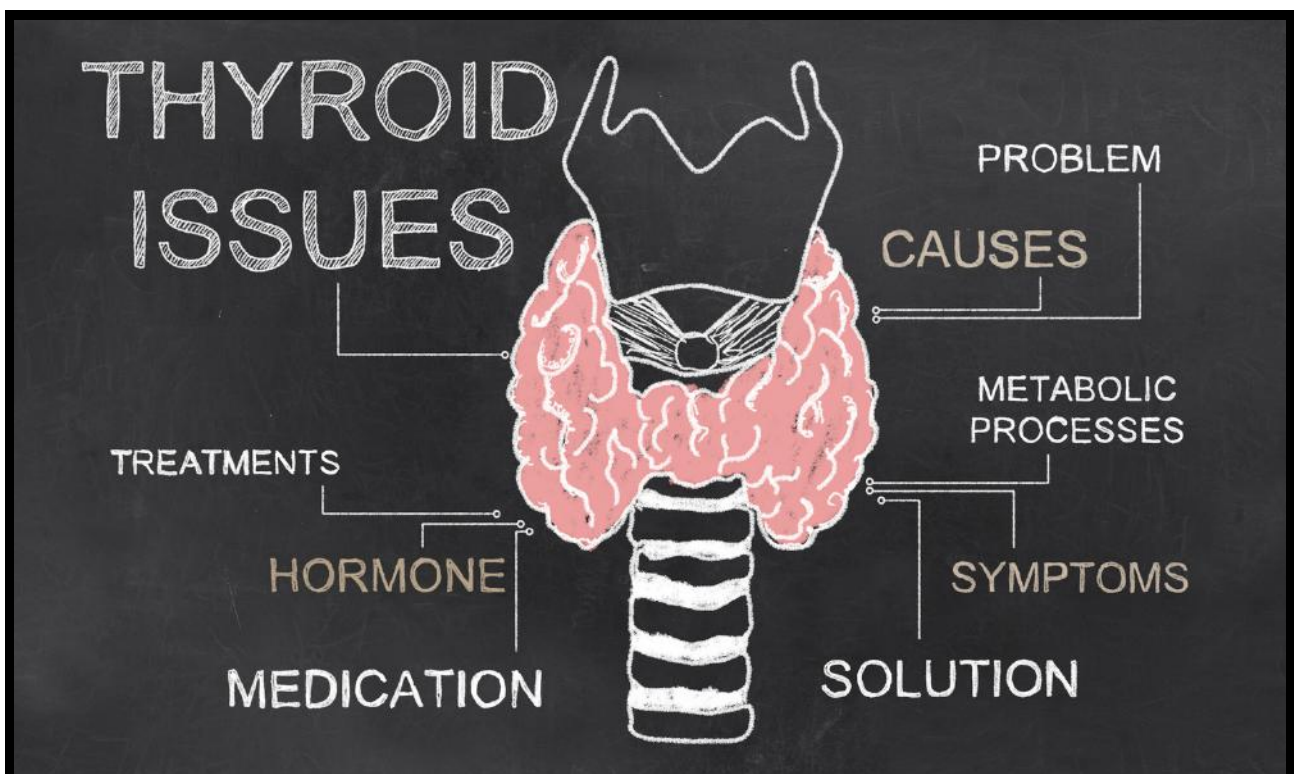
THYROID HORMONE PRODUCTION

The hypothalamus, pituitary, and thyroid gland are the primary organs responsible for thyroid hormone production. The communication signaling between these thyroid hormone-producing body parts is ever constant. For instance, the hypothalamus sends signals to the pituitary gland to produce more thyroid-stimulating hormone. Then the thyroid-stimulating hormone sends a signal to the thyroid gland to produce T4 and T3 hormones. And within each step of the signaling processes, key nutrients help fuel the communication. A deficiency or imbalance in any of these nutrients can halt the flow of information and thus disrupt the body's natural ability to produce thyroid hormones. Without enough thyroid hormones, the body enters a state of hypothyroidism, or a slowdown.

Thyroid Hormone Production Goals

- 1 Improve nutrition optimization in the body through nutrients found in foods to balance thyroid hormone production.
- 2 If needed, integrate daily nutritional supplementation of targeted vitamins, minerals, amino acids, fatty acids, phytonutrients, and herbs to further support thyroid health.

Nutrient	Benefit	Top Whole Food Sources
Iodine	Thyroid Hormone Production	Cod, Shrimp, Seaweed
Selenium	Thyroid Hormone Production	Brazil Nuts, Tuna, Shellfish
Copper	Thyroid Hormone Production	Shiitake Mushrooms, Sweet Potatoes
Zinc	Thyroid Hormone Production	Beef, Chicken, Pork Chops
Iron	Thyroid Hormone Production	Beef, Spinach, Shellfish
Tyrosine	Thyroid Hormone Production	Beef, Pork, Salmon
Vitamin A	Thyroid Hormone Receptors	Carrots, Sweet Potatoes, Spinach



STEP 2

T4/T3 THYROID HORMONE CONVERSION

The intricate process of producing thyroid hormones is the first step to optimizing thyroid health. The next step required for better thyroid health is the conversion of the inactive T4 to the active T3 thyroid hormone. The active T3 thyroid hormones are what the body needs for metabolism, heart health, and range of various other functions that are thyroid dependent.

The thyroid gland is responsible for both the production of T4 and T3 thyroid hormones. T4 however, is produced in much more abundant amounts in the thyroid gland compared to T3.

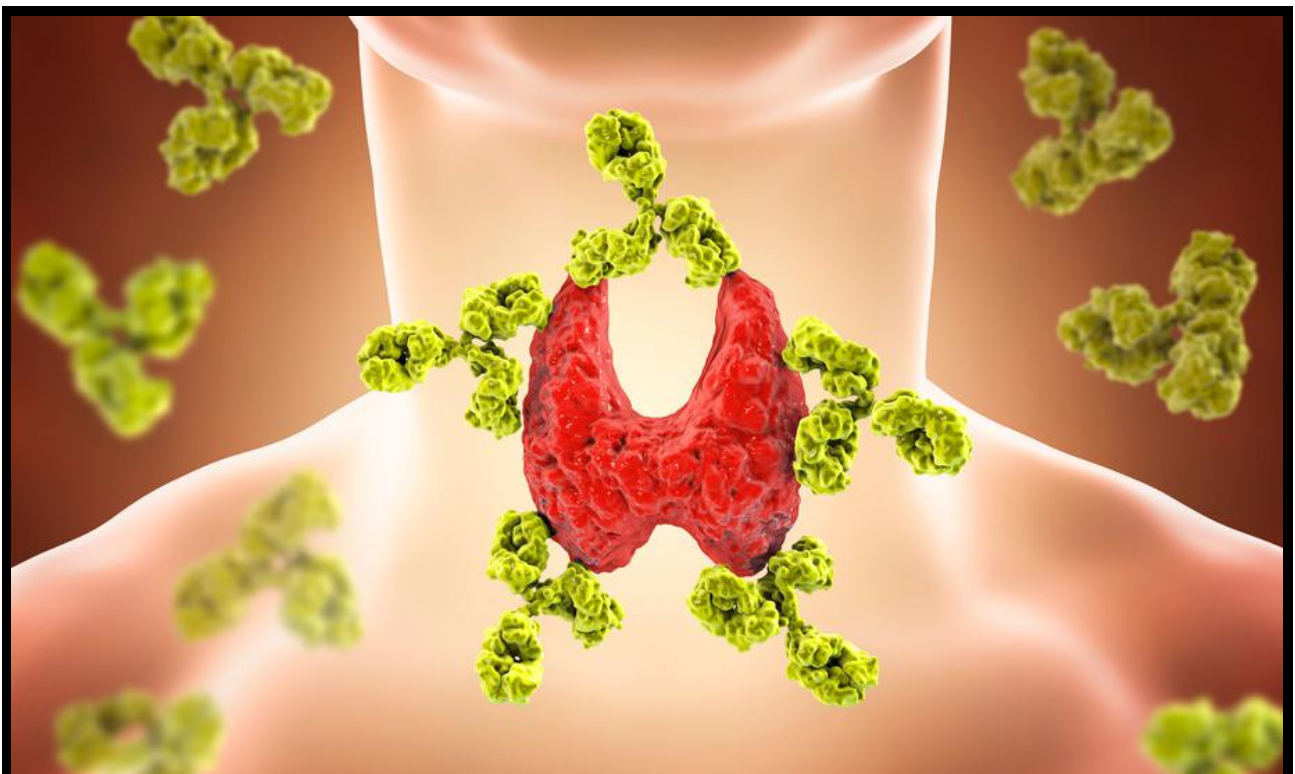
So How Can I Get More T3 Hormones?

As T4 thyroid hormones travel throughout the body, other body systems are responsible for taking T4 and converting it to T3. The liver and the gut are the primary locations for T4/T3 conversion, but the kidneys, heart, muscle, and nerves can also assist in this conversion process. Within each of these locations, key nutrients are needed to assist in the conversion of the inactive T4 to the active T3.

T4/T3 Thyroid Hormone Conversion Goals

- ❶ Improve nutrition optimization in the body through nutrients found in foods to enhance the conversion of T4 to T3.
- ❷ If needed, integrate daily nutritional supplementation of targeted vitamins, minerals, amino acids, fatty acids, phytonutrients, and herbs to further support thyroid health.

Nutrient	Benefit	Top Whole Food Sources
Selenium	T4/T3 Hormone Conversion	Brazil Nuts, Tuna, Shellfish
Iron	T4/T3 Hormone Conversion	Beef, Spinach, Shellfish
Zinc	T4/T3 Hormone Conversion	Beef, Chicken, Pork Chops
Magnesium	T4/T3 Hormone Conversion	Spinach, Tuna, Almonds
Probiotics	T4/T3 Hormone Conversion	Sauerkraut, Coconut Yogurt



STEP 3

THYROID HORMONE DISRUPTOR DETOXIFICATION

Both the production and conversion of thyroid hormones require so many elements in the body to work harmoniously. When there is an interference in these elements, the entire thyroid hormone signaling process may become disrupted. One of the top contributors of thyroid hormone interference is thyroid disrupting chemicals (TDC) from xenobiotics.

Xenobiotics are chemical substances which interfere with hormones and can include:

- Pesticides
- Herbicides
- Parabens
- Phthalates
- PCBs
- Food Additives
- Synthetic Chemicals
- Other Environmental Pollutants

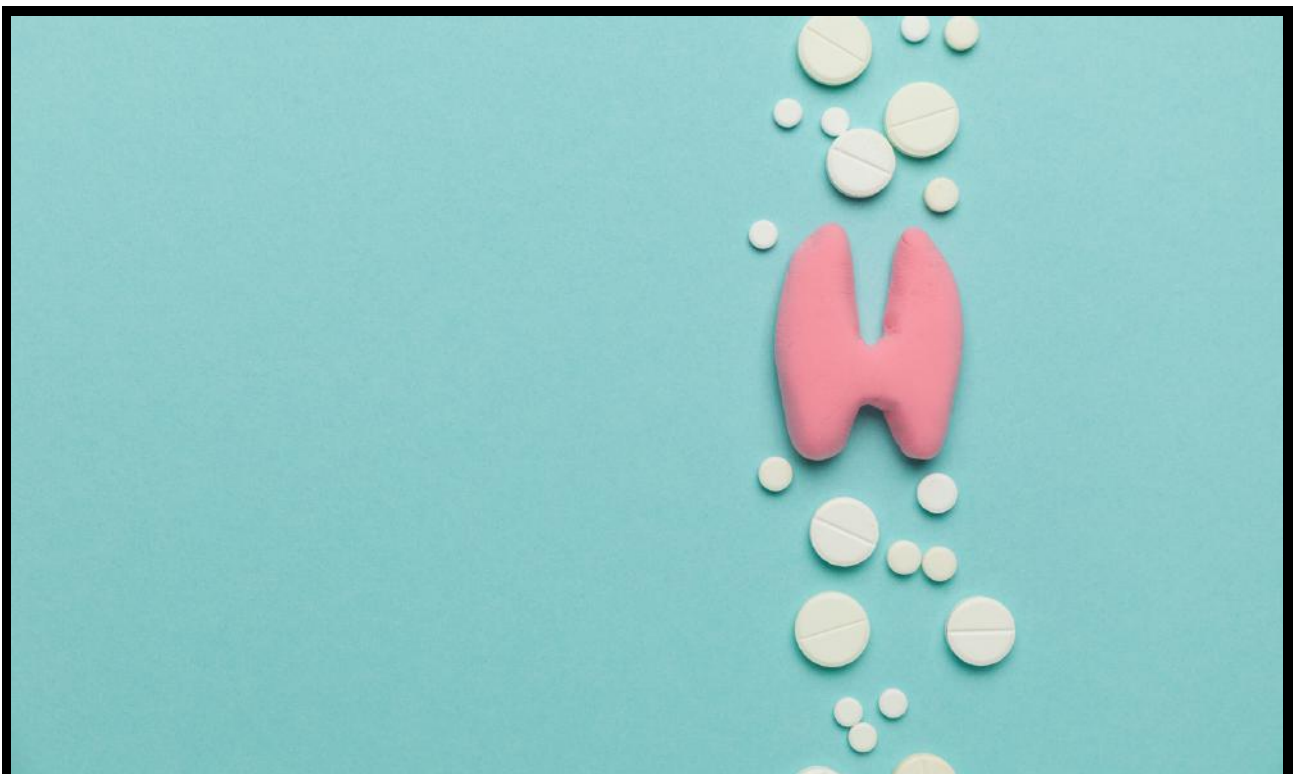
These xenobiotics can interfere with both thyroid hormone production and thyroid hormone conversion. For example, one of the top locations for T4 to T3 conversion is the liver. The liver is also the top organ to detoxify toxins and xenobiotics. When overwhelmed with toxins, liver metabolism can become impaired and the T4/T3 thyroid hormone conversion becomes disrupted. The thyroid hormone disruptors may also interfere with the hypothalamus, pituitary, and thyroid gland signaling processes. An alteration or disruption between these organs can lead to thyroid hormone deficiency issues.

If you have fatigue, headaches, brain fog, or mood swings, then you may have a buildup of xenobiotic toxins in the body which are not only contributing to undesirable symptoms, but also to thyroid hormone disruption.

Thyroid Hormone Disruptor Detoxification Goals

- ❶ Improve nutrition optimization in the body through nutrients found in foods to enhance thyroid hormone disruptor detoxification.
- ❷ If needed, integrate daily nutritional supplementation of targeted vitamins, minerals, amino acids, fatty acids, phytonutrients, and herbs to further support thyroid health.

Nutrient	Benefit	Top Whole Food Sources
Glutathione	Thyroid Disruptor Detoxification	Asparagus, Avocado, Spinach
N-Acetyl L-Cysteine	Thyroid Disruptor Detoxification	Beef, Pork Chops, Chicken
Cynarin	Thyroid Disruptor Detoxification	Artichoke
Rosmarinic Acid	Thyroid Disruptor Detoxification	Rosemary, Sage
Chlorogenic Acid	Thyroid Disruptor Detoxification	Tea, Blueberries, Apple
Glucuronic Acid	Thyroid Disruptor Detoxification	Apples, Oranges, Grapefruit
Ellagic Acid	Thyroid Disruptor Detoxification	Pomegranate, Grapes, Walnuts
Curcumin	Thyroid Disruptor Detoxification	Turmeric
Allicin	Thyroid Disruptor Detoxification	Garlic
Betaine	Thyroid Disruptor Detoxification	Beets, Spinach
EGCG	Thyroid Disruptor Detoxification	Green Tea, Cranberries, Blackberries
Dodecenal	Thyroid Disruptor Detoxification	Cilantro
Limonene	Thyroid Disruptor Detoxification	Lemon, Limes, Oranges
Vitamin B-Complex	Thyroid Disruptor Detoxification	Salmon, Beef, Chicken
Magnesium	Thyroid Disruptor Detoxification	Spinach, Tuna, Almonds
Alpha Lipoic Acid	Thyroid Disruptor Detoxification	Spinach, Beef, Tomatoes
Probiotics	Thyroid Disruptor Detoxification	Sauerkraut, Coconut Yogurt



STEP 4

THYROID HORMONE IMMUNE PROTECTION

The last step in the Thyroid Hormone Nutrition Plan requires a balanced immune system. Either an overactive or underactive immune system can impair thyroid hormone health.

Overactive Immune System

An overactive immune system may lead to Hashimoto's or Graves' Autoimmune Thyroiditis. A thyroid autoimmune disorder occurs when the body begins attacking the thyroid gland or thyroid hormone receptors.

Underactive Immune System

An underactive immune system may lead to oxidative stress and inflammation. Boosting antioxidant levels provide another shield from free radical thyroid damage.

Thyroid Hormone Immune Protection Goals

- ❶ Improve nutrition optimization in the body through nutrients found in foods to enhance thyroid hormone immune protection.
- ❷ If needed, integrate daily nutritional supplementation of targeted vitamins, minerals, amino acids, fatty acids, phytonutrients, and herbs to further support thyroid health.



Nutrient	Benefit	Top Whole Food Sources
Vitamin C	Immune Antioxidant Protection	Bell Peppers, Kiwi, Strawberries
Vitamin E	Immune Antioxidant Protection	Almonds, Avocado, Spinach
Selenium	Immune Antioxidant Protection	Brazil Nuts, Tuna, Shellfish
Glutathione	Immune Antioxidant Protection	Asparagus, Avocado, Spinach
Alpha Lipoic Acid	Immune Antioxidant Protection	Spinach, Beef, Tomatoes
Lycopene	Immune Antioxidant Protection	Tomatoes, Watermelon, Grapefruit
Quercetin	Immune Antioxidant Protection	Onions, Garlic, Cranberries
Anthocyanins	Immune Antioxidant Protection	Acai, Berries
Pycnogenol	Immune Antioxidant Protection	Grapes
Resveratrol	Immune Antioxidant Protection	Grapes
Curcumin	Anti-Inflammatory	Turmeric
Omega 3	Anti-Inflammatory	Salmon, Tuna, Flax Seeds
Vitamin D	Immune Modulation	Salmon, Cremini Mushrooms, Eggs
Glutamine	Immune Modulation	Seafood, Beef, Chicken
Zinc	Immune Modulation	Beef, Chicken, Pork Chops

PART FOUR

RECOMMENDED LAB TESTING

The following lab biomarkers may help provide insight into overall thyroid hormone health.

Thyroid Hormone Production

- | | |
|------------|--------------|
| ✓ TSH | ✓ T3, Free |
| ✓ T4 | ✓ Reverse T3 |
| ✓ T4, Free | ✓ Iodine |
| ✓ T3 | ✓ Selenium |



T4/T3 Thyroid Hormone Conversion

- | | |
|-------------|------------|
| ✓ Magnesium | ✓ Ferritin |
| ✓ Zinc | ✓ Cortisol |
| ✓ Iron | |



Thyroid Hormone Disruptor Detoxification

- | | |
|------------------------|--------------|
| ✓ ALT Liver Enzyme | ✓ BUN |
| ✓ AST Liver Enzyme | ✓ eGFR |
| ✓ Alkaline Phosphatase | ✓ Creatinine |
| ✓ Albumin | ✓ Potassium |
| ✓ Bilirubin | ✓ Sodium |
| ✓ GGT | ✓ Protein |



Thyroid Hormone Immune Protection

- | | |
|---------------------------------|---------------------|
| ✓ Thyroid Peroxidase Antibodies | ✓ White Blood Cells |
| ✓ Thyroglobulin Antibodies | ✓ Red Blood Cells |
| | ✓ Vitamin D |



Metabolic Health

- | | |
|---------------------|----------------------|
| ✓ Total Cholesterol | ✓ Triglycerides |
| ✓ HDL Cholesterol | ✓ C-Reactive Protein |
| ✓ LDL Cholesterol | ✓ Glucose |
| ✓ VLDL Cholesterol | ✓ HbA1c |



**Ask Your Practitioner Today for
Comprehensive Thyroid Hormone Lab Testing**



REFERENCES

- 1.Liu, G., Liang, L., Bray, G. A., Qi, L., Hu, F. B., Rood, J., Sacks, F. M., & Sun, Q. (2017). Thyroid hormones and changes in body weight and metabolic parameters in response to weight loss diets: the POUNDS LOST trial. *International journal of obesity* (2005), 41(6), 878–886. <https://doi.org/10.1038/ijo.2017.28>
- 2.Kotwal, A., Cortes, T., Genere, N., Hamidi, O., Jasim, S., Newman, C. B., Prokop, L. J., Murad, M. H., & Alahdab, F. (2020). Treatment of Thyroid Dysfunction and Serum Lipids: A Systematic Review and Meta-analysis. *The Journal of clinical endocrinology and metabolism*, 105(12), dgaa672. <https://doi.org/10.1210/clinem/dgaa672>
- 3.Jamal, M. T., Li, Q. L., Li, Q. Y., Liang, W. Y., Wang, L. H., Wei, J. H., Liang, Q., Hu, N. Q., & Li, L. H. (2021). Association of thyroid hormones with blood pressure and arterial stiffness in the general population: The Dali study. *Journal of clinical hypertension* (Greenwich, Conn.), 23(2), 363–372. <https://doi.org/10.1111/jch.14154>
- 4.Ebert E. C. (2010). The thyroid and the gut. *Journal of clinical gastroenterology*, 44(6), 402–406. <https://doi.org/10.1097/MCG.0b013e3181d6bc3e>
- 5.Krassas, G. E., Poppe, K., & Glinioer, D. (2010). Thyroid function and human reproductive health. *Endocrine reviews*, 31(5), 702–755. <https://doi.org/10.1210/er.2009-0041>
- 6.Zhu, S., Pang, Y., Xu, J., Chen, X., Zhang, C., Wu, B., & Gao, J. (2022). Endocrine Regulation on Bone by Thyroid. *Frontiers in endocrinology*, 13, 873820. <https://doi.org/10.3389/fendo.2022.873820>
- 7.Bauer, M., Goetz, T., Glenn, T., & Whybrow, P. C. (2008). The thyroid-brain interaction in thyroid disorders and mood disorders. *Journal of neuroendocrinology*, 20(10), 1101–1114. <https://doi.org/10.1111/j.1365-2826.2008.01774.x>
- 8.Cioffi, F., Senese, R., Lanni, A., & Goglia, F. (2013). Thyroid hormones and mitochondria: with a brief look at derivatives and analogues. *Molecular and cellular endocrinology*, 379(1-2), 51–61. <https://doi.org/10.1016/j.mce.2013.06.006>
- 9.Salvatore, D., Simonides, W. S., Dentice, M., Zavacki, A. M., & Larsen, P. R. (2014). Thyroid hormones and skeletal muscle--new insights and potential implications. *Nature reviews. Endocrinology*, 10(4), 206–214. <https://doi.org/10.1038/nrendo.2013.238>
- 10.Takir, M., Özlü, E., Köstek, O., Türkoğlu, Z., Mutlu, H. H., Uzunçakmak, T. K., Akdeniz, N., & Karadağ, A. S. (2017). Skin findings in autoimmune and nonautoimmune thyroid disease with respect to thyroid functional status and healthy controls. *Turkish journal of medical sciences*, 47(3), 764–770. <https://doi.org/10.3906/sag-1510-39>
- 11.Green, M. E., Bernet, V., & Cheung, J. (2021). Thyroid Dysfunction and Sleep Disorders. *Frontiers in endocrinology*, 12, 725829. <https://doi.org/10.3389/fendo.2021.725829>
- 12.Chiovato, L., Magri, F., & Carlé, A. (2019). Hypothyroidism in Context: Where We've Been and Where We're Going. *Advances in therapy*, 36(Suppl 2), 47–58. <https://doi.org/10.1007/s12325-019-01080-8>
- 13.Mincer, D. L., & Jialal, I. (2022). Hashimoto Thyroiditis. In StatPearls. StatPearls Publishing.
- 14.Subekti, I., & Pramono, L. A. (2018). Current Diagnosis and Management of Graves' Disease. *Acta medica Indonesiana*, 50(2), 177–182.

