

Reverse Thyroid Disease Naturally

Alternative Treatments for

Hyperthyroidism

Hashimoto's Disease

Thyroid Cancer

Fatigue

Hypothyroidism

Graves' Disease

Goiters

and more...

Michelle Honda, Ph.D.

Foreword by Dr. Sherrill Sellman, ND

A HATHERLEIGH NATURAL HEALTH GUIDE

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To learn lots about nutrition and healthy living, and for more information on her private practice, visit Michelle's blog:

www.michellehonda.com

DEDICATION

To Dennis and Brenda Gaines for their tireless support and inspiration.

ACKNOWLEDGEMENTS

TO START, I would like to acknowledge my patients, who embraced a new dietary approach to healing. I applaud their willingness to adopt the necessary lifestyle changes and to further understand the importance of preventive care and the role of complementary medicine. Their desire to heal and regain independence inspires me to continue to deepen my knowledge to be of better service.

Above all, I wish to thank the exceptionally skilled and talented team from Hatherleigh Press. I, along with their other authors and readers, am indebted to this team for providing invaluable resources, making it possible for people to learn about preventive health maintenance and the science of complementary medicine.

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I am truly grateful and appreciative to Dr. Sherrill Sellman, ND. You can learn more about Dr. Sherrill Sellman at www.whatwomenmustknow.com.

A special thanks to the researchers and scientists, without whom I would not have the broad base of knowledge to draw from and further extend it to my readers and patients. Along with these specialists and other pioneering physicians, they have availed us to natural medicine and human cell biology to better understand the disease and healing process.

And last but not least, to my husband Ron, who is always supportive and patient as we continue on in this life's journey.

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FOREWORD

FOR YEARS OF my life, I struggled with many undiagnosed symptoms and health conditions. These issues were a complete mystery to me. Let's start with weight gain; even though I would eat like a church mouse and exercise regularly, my weight stubbornly refused to budge. Then there was the extreme fatigue that plagued me, especially upon arising in the morning. I would feel *more* exhausted after a long night's sleep than I did the night before.

I was also haunted by feelings of depression that were impossible to shake, no matter how hard I tried. Other symptoms would appear randomly, including dry skin, digestive issues, hormonal imbalances, allergies, and foggy brain.

I trudged through my life, never once feeling really vital and fully alive.

It wasn't until many years down the track that I finally discovered that all these symptoms were related. They were due to an underachieving thyroid. I was diagnosed with Hashimoto's Thyroiditis, an autoimmune condition that can seriously damage thyroid function.

Wow, I thought. After years of dealing with so many debilitating issues, I was finally able to make sense of it all.

I am not alone in my thyroid challenges—approximately 20 twenty million other Americans share this diagnosis. One out of eight women in their lifetime will have a thyroid disorder.

Without a healthy, functioning thyroid, we cannot live our life fully. Any thyroid problem can compromise not only our quality of life but our quality of health. Standard medical treatments for thyroid disease are less than adequate and often ineffective. Even more significantly, they cannot heal a thyroid gland that is out of balance or impaired in some way.

I chose to heal my thyroid issue naturally. I changed my diet, cleaned up my environment, committed to acupuncture and chiropractic treatments, reduced stress, became gluten-free and sugar-free, and began taking specific supplements and herbs to support thyroid function and autoimmune issues. I became totally committed to healing my thyroid, as well as the other health challenges that I discovered were contributing to my underachieving thyroid.

I am so pleased to be able to report that I no longer have any underactive thyroid problems or any of my past thyroid-initiated symptoms! I personally achieved this without the need for any thyroid medication. It's been quite a learning and healing curve for me, but it has been well worth the effort. Thanks to these changes, I am healthier now than at any time in the past.

I wish I'd had the information that Michelle Honda has gathered together in her new book, *Reverse Thyroid Disease Naturally*, when I first got my diagnosis. It is the best shortcut to understanding the many thyroid issues, as well as providing proven and effective strategies to naturally regain optimal thyroid function at any age. Our body has the truly miraculous capacity to heal any problem. What is required is a proven roadmap that will safely guide us to our destination of good health.

Reverse Thyroid Disease Naturally is a must-read for all people who are looking to discover the solutions for healing their thyroid diseases.

Thank you, Michelle, for your tireless dedication to being such a wonderful Light Bearer, guiding us on our path to optimal wellness.

—Dr. Sherrill Sellman, ND

Author of *Hormone Heresy: What Women MUST Know About*

*Their Hormones and What Women MUST Know to
Protect Their Daughters from Breast Cancer*

PREFACE

IMAGINE A LIFE in which you feel vibrant and energized—full of real enthusiasm for everything life has to offer!

For many people, this would be their ideal. But real life always seems to fall short of that ideal. Thinking back over your life, you may wonder if you've ever felt truly present and alive. What's worse, you may not be able to say precisely why you often feel listless, sluggish, or tired.

Know that all is not lost; you *can* become the active, engaged person you long to be. Those lingering feelings of fatigue may actually be a health issue waiting to be solved. We have compiled many different scenarios to show you why you feel tired, why you cannot control your weight even though you are eating far less, and why you are experiencing mood swings and feelings of depression.

Your body's energy levels are a function of a gland in your body known as the thyroid. When your thyroid gland has not been nutritionally supported, which is the only way it can function properly, you fall prey to a myriad of disorders—from a lower-functioning heart, to no longer having a zest for life, to feeling tired most of the time. The problems surrounding hypothyroidism and other thyroid disorders can be very simple to remedy, or may involve a more complex approach, requiring attention to other areas of the body where additional conditions have manifested. (For example, gastrointestinal problems due to leaky gut and inflammation of the thyroid gland are the reason why 95% of the population diagnosed with hypothyroidism in North America have Hashimoto's disease—a form of hypothyroidism.)

When the thyroid gland does not receive proper nutritional support, it becomes unable to make necessary hormones, like the thyroid-stimulating hormone TSH and the hormones T3 and T4. When testing for an underactive thyroid, blood tests will look to determine the levels of these hormones. However, this in itself is another area of complication; there is a long list of problems surrounding the common thyroid test performed at the doctor's office, which we'll discuss in this book. We will also discuss how to fully restore the function and health of your thyroid gland so it can best serve you as intended by the biochemical makeup of our body.

Having determined that your thyroid may be to blame for your symptoms of depression and fatigue, you may be wondering what options you have available. Thyroid medication is quickly becoming a top seller; however, a drug simply cannot do the work of your body's own glands, and many negative symptoms will follow as a result of these artificial means. This form of medication cannot sustain your gland on an optimum level.

The therapies and protocols presented in this book are the result of many years spent teaching others how best to prop up this overworked gland, and incorporates the latest research into uncovering the pitfalls surrounding mainstream medications and dietary imbalances.

Too many people think there is nothing that can be done to ease their symptoms or undo years of neglect. This is simply not the case; you do not need to be one of the many checking themselves into crisis care centers! *Reverse Thyroid Disease Naturally*, like all the other books in my series, deals with full restoration and disease reversal of conditions by working with our body's natural biochemical and metabolic composition. You'll discover usable, affordable, *safe* techniques that you can start right away.

Be prepared to feel amazing!

—Michelle Honda Ph.D., D.Sc.

INTRODUCTION

YOU GO TO the doctor's office complaining of fatigue and mood swings. You are told you are fine, but *you* know you are not!

In all probability, you are suffering with thyroid dysfunction. Many doctors misdiagnose thyroid disease due to faulty testing methods and not being knowledgeable on the nutritional needs of the body. (But we can't lay too much blame; as yet, nutrition isn't a standard part of the medical curriculum.)

The American Thyroid Association estimates upwards of 20 million Americans have some form of thyroid disease, and that 60 percent of those with thyroid disease are unaware of it. Further estimates show women to be five to eight times more likely than men to have thyroid dysfunction; one woman in eight will develop a thyroid problem during her lifetime.¹ The American Association of Clinical Endocrinologists has estimated that 21 million women alone suffer from thyroid dysfunction.²

In fact, I suspect we have all had, at some point in time, an imbalance in our thyroid. In general, we are not being taught how to properly nourish our bodies; plus, the thyroid—like other glands/organs—is subject to emotional stressors and environmental toxins on a daily basis. What this results in is a thyroid gland that is overworked and underpaid. Is it any surprise that it starts to slow down after a while?

Because the thyroid has such an enormous influence over our day-to-day lives, it is important to learn the early detection signs of imbalances and employ a preventative approach, rather than wait for the many problems sure to follow a loss of thyroid functionality. Even though the reports on the subject differ in their particulars, what remains clear is diseases of the thyroid gland need to be acknowledged and addressed in the only way they can truly be corrected—by adopting a nutritionally sound plan that supports your body's cellular function.

Objectives for *Reverse Thyroid Disease Naturally*

When embracing lifestyle change on the journey to reclaim one's health, nearly everyone experiences some challenges in their personal lives. It's a natural part of adopting new routines and leaving old ones behind. We will now look at a few learning objectives we'll be considering in our efforts to bring your thyroid gland and body back to an optimum state of health.^{3,4}

In this book, we will work to:

- Understand gut health and why it is a major contributor in hypothyroidism and in autoimmune thyroid disease disorders.
- Learn how to incorporate supplementation, a necessary component in reestablishing thyroid health and dietary/lifestyle changes.
- Understand characteristics of the immune system—immune cells infiltrate the thyroid gland and produce thyroid antibodies.
- Understand the role of the protein gluten in instigating autoimmune responses to thyroid function.
- Learn about common thyroid problems, including hyperthyroidism, Graves' disease, and goiter.

- Explore the role that certain medications play in influencing the thyroid, including synthetic estrogen (birth control pills).
- Learn how thyroid dysfunction can impact connected systems, resulting in glucose and cholesterol imbalances, high blood pressure, allergies, gut complaints, weight gain (especially in the abdominal area), and fatigue.
- Investigate the role of insulin as a prominent thyroid inhibitor, and the resulting thyroid resistance.⁵

On the topic of medication, we'll also be evaluating various thyroid drugs used to treat thyroid disease on their performance and long-term effects. While retaining your thyroid gland is our main objective, for those who are missing their thyroid and are taking drug therapy, we will shed some light as to why you might still suffer with hypothyroidism symptoms. Additionally, other medications will be touched on as root causes of intestinal permeability related to thyroid dysfunction.

This book is for the millions of Americans who don't understand why their metabolism is so low and why they struggle with depression, stress, mood swings, fatigue, exhaustion, weight gain, hair loss, menopausal symptoms, hot flashes, and excessive perspiration. In addition, we'll also be addressing the more serious concerns of fibrocystic breast disease, cancer, nodules and autoimmune disorders of the thyroid, and more—all directly related to the health and nutrients used by the thyroid gland.

The primary goal of holistic medicine in working with the disease process is to reverse and permanently change the pathology of destructive illnesses. The focus of this book will be centered on the thyroid gland, a main area of the endocrine system. It gives me great pleasure to unravel the misinformation surrounding this extremely vital gland, one which so directly impacts our day-to-day existence.

The Thyroid Gland

THE ENDOCRINE SYSTEM is one of our body's most crucial systems. It consists of nine separate glands, which together secrete dozens of hormones into our bloodstream to regulate and support all the systems in the body. The thyroid gland is positioned just below the larynx (voice box), with lobes lying on either side of the trachea.

The thyroid (along with the adrenals) has a tremendous effect on how we feel and cope when it comes to energy levels, cravings, stress, mood swings, patience, anger, and anxiety. The endocrine system works as a team (although the thyroid, adrenals, and pancreas actually work as a triad). For this reason, it is important to know how to support this area of the endocrine, as these glands—when either imbalanced or malnourished—have a huge impact on how we feel and how we manage our lives on a day-to-day basis (all of which impacts our healing process).

Because the thyroid gland is so uniquely tied into all functioning mechanisms of our body, when it is not properly supported, a long list of symptoms continues to accumulate and enhance. The degree of degeneration of the thyroid gland ultimately determines the severity of your symptoms and the steps to be taken for restoration.

The Role of the Thyroid Gland

Often referred to as the most abused gland in the body, the thyroid has earned this reputation because it is viewed as an emotional gland. Any episodes of great stress, sadness, anger, grief, lifestyle change, or other stimulus can seriously burden this gland, creating an enormous nutritional need in order to keep up with the body's demand.

The thyroid gland plays a significant role throughout the body, with every cell in the body having a thyroid hormone receptor. The main role of thyroid hormone is to control our energy production within the cell; essentially, this describes our metabolism. A very important point: the thyroid hormone controls the function of the cell's **mitochondria**, which in turn determines how much energy is produced from the food we eat (fat, sugar, and protein). Therefore, symptoms related to low thyroid function stem from a decrease in energy production.

Listed below are some of the responsibilities of the thyroid gland and symptoms of malfunction:¹

1. **Regulator:** Affects all parts of the body from the neck down and is responsible for the entire body's metabolism.
2. **Circulation:** Common symptoms of cold hands and feet, including the more serious condition of Raynaud's Disease.
3. **Sexual:** Low libido, hormone production, energy, menstrual complaints, infertility, sexual dysfunction.
4. **Energy:** Low energy, fatigue, poor attitude.
5. **Weight Gain:** Resting metabolic rate will be low, causing weight gain.

6. **Muscle Development:** Required for athletic performance and a necessary component for achieving lean muscle mass (as seen with body builders).
7. **Immune Function:** Over-or under-reactive, allergies, autoimmune diseases.
8. **Excretory:** Removal of waste products.
9. **Hormonal:** Reduced production of all hormones.
10. **Hair:** Hair loss and the more severe alopecia.
11. **Skin:** Circles under the eyes, dry, acne, darker spots.
12. **Brain:** Mental sluggishness, poor memory, insomnia, depression, lack of focus, poor concentration.
13. **Vascular:** High and low blood pressure, circulation.
14. **Fluid Flow:** Retention of liquid.

In this chapter we will be primarily focusing on different stages of hypothyroidism while looking into autoimmunity as it pertains to the thyroid. First, let's take a look at a few common concerns brought to my attention by those seeking answers for why their symptoms exist and persist in the first place.

Have you asked yourself any of the following questions?

- Why are my energy levels so low?
- Why is my metabolism so sluggish?
- Why am I gaining weight even though I am eating less?
- Why can't I *retain* body weight?
- Why do I feel depressed and overwhelmed—not in control?
- Why do I feel anxious and experiencing hypersensitivity?
- Why am I having premature hot flashes, or, why are my hot flashes raging out of control?
- Why am I experiencing excessive sweating (perspiration)?
- Why are my hands and feet cold and sometimes numb?
- Why is my skin suddenly itchy and dry?
- Why is it taking me longer to recover from an illness?
- Why do I have infertility issues and miscarriages?
- Why am I experiencing sexual dysfunction?
- Why am I starting to lose my hair and eyebrows (or in more extreme cases, alopecia)?
- Why did my energy and mood suddenly change following taking certain drugs (especially for females)?

Remedies for the above symptoms and specific disease conditions of the thyroid gland will be fully discussed in this book—from daily nutrition to natural medicine to replace the need for certain medications.

When the thyroid gland is malfunctioning, it becomes increasingly difficult to make the necessary life changes to reestablish one's health, let alone start moving toward any disease reversal process. A tired body will struggle to heal itself, and it takes a constant supply of energy to perform and maintain all the cellular mechanisms in the body.

But why the recent upsurge in cases of malfunctioning thyroid glands?

Past Generations Did Not Have Our Thyroid Problems

In trying to unravel the reasons why our ancestors didn't suffer with the same symptoms of thyroid imbalance we see today, all we really need to do is look at a few differences that demonstrate the vast shift in how and what we feed ourselves today, compared to earlier generations.

- Sometime after the WWII, chemicals became a major player in agricultural practices. Environmental chemicals disrupt thyroid hormone production and receptors.
- Past generations did not cook with harmful hydrogenated and polyunsaturated fats and oils. These cooking oils are a mainstay in restaurants and prepared food items in grocery stores; they are also a main instigator for the spread of inflammation throughout the body. They are comprised of omega 6 fatty acids, which fuel pro-inflammatory pathways in the body. In addition to their involvement in many disease processes, these oils block thyroid hormone production, lower anti-inflammatory mechanisms, enhance pain and inflammation, promote blood clots, raise bad cholesterol, and inhibit protein (proteolytic) enzymes involved in the digestion process, to name just a few of the issues.
- Thyroid hormone balance is affected by the quality and amount of amino acids taken in through the diet, primarily L-tyrosine (thoroughly discussed in Chapter 7). Most people today primarily consume muscle meat, which is far lower in nutrients (especially compared to organ/gland counterparts). Keep in mind, we are as young or old as our glands feel, and they require quality fat and quality protein to work properly.
- Prior to the era of the pharmaceutical industry, people took little to no medication. The limited availability of remedies supported the use of natural sources that the body could recognize and utilize when appropriate. Today, drugs are made from synthetic material that is not recognized by the cells in our body. For this reason, they come with the problem of potentially life-threatening side-effects.
- We also see nutrient imbalances due to our foods being fortified with calcium, relative to our potassium balance. Calcium supplements and vitamin D enhances the absorption of potassium, creating another mineral imbalance impacting the thyroid.
- Our water has undergone a lot of change. Heavily populated areas are now subjected to fluoride (among other chemicals) in their daily water supply. Evidence studies (2014) reveal that fluorinated water puts individuals at twice the risk for hypothyroidism. Some people are even attempting to remove it using filters and commercial product devices.²

The main message I wish to impress upon you, regardless of all the solutions provided in this book, is to nutritionally support your thyroid. In that way, you will avoid many of the day-to-day complaints described in this book. And remember that we are all biochemically the same, for the most part; what is good for you is good for your whole family.

By understanding the role of specific nutrients and their function required by this gland and others will be an important first step to prevent the development of thyroid imbalances. A main objective throughout this book is to help the reader comprehend what took place along the way that led to your current state of health.

As it happens, the number one imbalance I see of which most people are unaware of as being a concern or having an impact on their health, is hypothyroidism (Hashimoto's disease or underactive thyroid function).

The TSH Test: How Accurate Is It?

As a natural medicine practitioner, I have long been aware that lab tests do not tell the whole story. The traditional thyroid test performed at the doctor's office often serves as an example of a patient's signs and symptoms not correlating to their test results. Even when the traditional thyroid test actually does show an imbalance, it is not uncommon for your thyroid gland to have been suffering for years.

The Thyroid Stimulating Hormone Test (TSH) is a routine blood test done to check how well your thyroid gland is functioning. Unfortunately, blood tests are not always conclusive, and the TSH is a prime example of an inaccurate test.

The following are a few reasons why patients often show negative blood results (on a thyroid TSH test) while experiencing positive clinical symptoms.^{3,4,5,6}

- Hormone levels fluctuate during the day; consequently, a more reliable test may be a 24-hour urine specimen and further hormone examination.
- T3 and free T4 blood tests may only provide a vague idea of what is actually in the blood, and does not indicate the amount of hormone levels in the cells.
- Research participants for establishing "norms" is under examination, due to inconclusive readings, and may not necessarily represent normal levels.
- The scale for normal values is wide, which becomes difficult when choosing an accurate reading. Therefore, compare value readings to the median range of values.
- Hormone disruptors can block thyroid cell receptors (discussed later).
- Inaccurate test values can also result from low blood volume, as noted with arterial vasoconstriction and insufficient lymphatic drainage, as well as during the absence or malfunctioning of lysosomal enzymes (required to break down molecules called glycosaminoglycans, formerly called mucopolysaccharides). There are a number of metabolic disorders related to the malfunctioning of these long-chained sugar carbohydrates, normally occurring within the cells that help build bone, cartilage, connective tissue, corneas, tendons, and skin.
- The condition myxedema is synonymous with severe hypothyroidism, in which the activity of the thyroid gland is greatly reduced due to a failure of the pituitary gland or hypothalamus. Thyroid stimulating hormone (TSH) levels will only be elevated when these glands are not in a state of myxedematous.
- As a general comment, it is suggested by many professionals that you never trust any test to be 100 percent accurate.

After reviewing comments made by Dr. Kent Holtorf, the problems surrounding the thyroid test are seen to extend beyond the above list. Generally, a patient requests help and diagnosis with symptoms such as fatigue, weight gain, hair loss, cold hands and feet, heavy menses, hot flashes, brain fog, and noticeable decreases in memory.^{7,8,9}

Upon follow-up blood test results for the thyroid gland, the patient is most often told they are fine. But in truth, they are not fine; the standard TSH test is actually looking at a hormone produced by the pituitary gland. TSH informs the thyroid gland on the amount of hormone needed by the body. Upon examining test results, high TSH levels indicate low amounts of thyroid hormone, while low TSH levels indicate too much hormone. The problem is these values tend to fall within "typical" readings, a reference which is far from accurate.

The Relationship Between FT4, FT3, RT3, and TSH

In order for the body to maintain its energy levels, free T4 (FT4)—an inactive form of T4 largely viewed as a storage vessel—must first be converted to Free T3 (FT3), the active form of the hormone. This is also needed to both enhance and sustain metabolism. When undergoing thyroid testing at the doctor's office, make sure to request that both free and total levels of T4 and T3 are obtained, and confirm that your doctor is analyzing the free levels. The reason for checking free levels of T4 is to determine the amount of FT4 that is available for conversion to FT3; otherwise, T4 remains bound to proteins in the blood.

Another aspect to consider regarding thyroid testing are the overall levels of Reverse T3 (RT3). This variety of hormone is the "inactive" form of T3, made from storage hormone T4 via the liver, and has anti-thyroid effects. An excess of RT3 has an inhibiting effect on T4, essentially blocking its absorption into the body's cells. The result is thyroid functionality at less than optimum levels. This may be due to physiological reasons, such as if the adrenal glands are producing too much or too little cortisol, or your ferritin (iron) levels, which induce the body to create excess RT3 hormone. Vitamin B12 levels may also play a role. All the physical anomalies related to stressed adrenals that lower red blood cell count can be considered contributing factors to increased levels of RT3.

In 2005, The Journal of Clinical Endocrinology and Metabolism published a study titled "Reverse T3 is the best measurement of thyroid tissue levels." The article stated that, "the T3/Rt3 ratio is the most useful marker for tissue hypothyroidism and as a marker of diminished cellular functioning." It further added that, in the presence of illness or physiological disorders such as depression and stress or obesity, "look to the ratio between Free T3 (FT3) and Reverse T3 (RT3)."

How to Naturally Lower RT3 Levels

When looking to lower one's RT3 levels without resorting to medication, start with a liver cleansing program. A thorough liver cleanse will also involve a gall bladder cleanse, and is typically accomplished through a day-long fast from food, followed by a combination of olive oil and lemon juice (there are also programs incorporating salt and olive oil). Search online, or ask your doctor regarding liver and gall stone cleansing programs.

Herbs such as milk thistle and dandelion, when taken over time while monitoring your RT3 levels, can also be effective (although the normal recommended dosage may require doubling). In addition, low levels of selenium have shown to increase RT3 hormone. In such cases, take 100 mcg of selenium daily. Address adrenal function and identify stressors and correct any adrenal insufficiency or fatigue.

Thyroid Medication

WHEN A PHYSICIAN suspects that there may be an issue with a patient's thyroid, their first response is typically to prescribe some form of thyroid medication.

However, while you may start to feel better within a couple of weeks after taking medication to treat your thyroid condition, over time, your body will not be able to sustain adequate thyroid function the way your own natural hormones could. An individual may be given synthetic T4, but find that it isn't converting to T3 in the body. The doctor might then prescribe synthetic T3, such as Cytomel, which may be of some benefit. But often, the problem of T4 not converting to T3 remains, even though T3 hormones have been added.¹

There are many other reasons (some of which will also be discussed in Chapter 4) as to why T4 may not be converting to its active form of T3. For those who find themselves permanently on thyroid medication and still suffer from negative thyroid symptoms, look into other areas involved with this conversion process to find underlying contributing factors, aside from the limitations of thyroid medication.

Among the three most popular prescription thyroid drugs is Levothyroxine (brand names Synthroid, Levothyroid, Levoxyl, and Unithroid), which are synthetic forms of the hormone T4, a precursor to T3²; Liothyronine, a synthetic form of thyroid hormone T3 (brand name Cytomel); and desiccated thyroid (brand name Armour Thyroid).

Of the three, desiccated thyroid would by far be my first choice, since it is the closest to natural thyroid tissue. Armour Thyroid is a purified form of thyroid hormone made from pork that provides both T3 and T4. However, there has been a problem with supply of this product in recent years due to shortage. Because of this, the producers of this product have limited the availability of certain strengths (60 mg or 1 gram).

Note: non-prescription desiccated thyroid and other glandular extracts can be purchased in many health-related stores that retail supplements.³

Problems with Thyroid Medication

Like all other medications, thyroid medications come with a list of side effects. In the case of synthetic thyroid medication, most contain only partial hormone replacement such as T4 (or T3 only) among other missing properties necessary for hormone activation.

Medication Conversion Problems (T4 to T3)

A common problem for many people on Synthroid medication is whether T4 will be converted to T3. It's this conversion issue which accounts for why you may feel fatigued and generally unwell. In order for Synthroid to work, an enzyme called De-Iodinase must be present and working well. If it is deficient or unavailable to the body, T4 will not be converted into T3. In such cases, switch to naturally-sourced desiccated thyroid extract preparations.

Another missing ingredient in Synthroid and Cytomel medication is **calcitonin**, which becomes critical for patients who have had a total thyroidectomy. In such instances, the cells responsible for producing calcitonin (parafollicular cells) will be missing, and may still be deficient in patients who have their thyroid gland. Calcitonin is present in natural thyroid extracts.^{4, 5, 6}

Non-Thyroid Drug Suggestions

Nothing will work as well as your own fully-functioning thyroid gland; however, if you have to make a choice, natural desiccated thyroid extract contains a full spectrum of hormones (T4 and T3 as well as T2 and T1). This form of thyroid support has been used since the 1800s. Non-prescription desiccated organ/glandular tissues are available in local health/supplement stores for those who would like to explore this option. You will likely have more success with these products if you have not been on long-term thyroid medication.

Most companies also have combination products for glandular support. Suggestions for combination formulas include: Natural Factors, Thorne, Now, Sangsters, Botanica, Eclectic Institute, Vitamin Shoppe Brand, Herb Pharm, and several other companies. The United States also has several sources which include raw or desiccated thyroid and other glandular substances: Natural Sources, Solaray, Seroyal, NatraBio, and others.

Medications and Medical Treatments that Reduce Thyroid Levels

There are many drugs commonly prescribed to treat other disorders and illnesses which can negatively impact your hormone levels, or cause your thyroid to function at less than optimal levels.

Lithium is a drug widely used to treat bipolar and other psychiatric disorders. Psychotic drugs severely impact the thyroid, affecting thyroid hormone production and secretion. Most develop hypothyroidism symptoms (both with and without a goiter).

Amiodarone (cordarone) is a drug used to treat abnormal heart rhythms which contains high levels of iodine. Patients are more susceptible when hypothyroidism is present and have been shown to induce hyper or hypothyroidism, especially in the United States.

Other drug examples are those used to treat epilepsy (**phenytoin/carbamazepine**), which are shown to reduce thyroid hormone levels, as well as **antidepressants**, which also contribute to hypothyroidism.

The increased antibodies from **interferons** and **interleukins**, used in the treatment of multiple sclerosis, hepatitis, leukemia, AIDS, and cancer, puts patients at a higher risk for hypothyroidism or an overactive thyroid (hyperthyroidism). In addition, chemotherapy drugs (like **sunitinib/imatinib**) can cause or aggravate hypothyroidism.

Radiation therapy is especially problematic when applied in the head or neck area for the treatment of certain cancers or Hodgkin's disease-causing hypothyroidism.⁷

Medications and Thyroid Disease

Conventional medicine does not inform patients on how to properly nourish and support specific systems and individual glands/organs to ensure optimum function and restoration. This leaves the thyroid unable to produce sufficient hormones and secretions necessary for making other hormones, like epinephrine and noradrenaline in the adrenal glands and dopamine in the brain.

Some physicians, recognizing their traditional format for treating this gland have been inadequate, have gone to great lengths trying to manipulate the dosage levels of thyroid hormones. A certain amount of success has been achieved, yet has been difficult to sustain overall. There is an explanation as to why results may be limited: thyroid medication cannot perform like the natural elements used in the building and functioning of the thyroid gland. As in all other nutrient requirements, *only* whole, unadulterated natural sources can be utilized by our cells. Bottom line is, drugs cannot work like natural substances!

Medications that Decrease Nutrient Absorption

Aside from the critical elements earmarked for thyroid gland health and performance that may be missing from synthetic medication, a major contributing factor for millions of Americans is the correlation between a sub-optimal gut/digestive system and a multitude of health concerns.

Society at large faces a common problem—drugs deplete essential nutrients. The challenge people and healthcare practitioners face is *not knowing* which nutrients are being robbed by medications. Nutritional deficiencies from prolonged drug usage are a major side effect and concern. More than 1,000 of the most commonly prescribed medications (despite being effective and even life-saving) produce a reaction known as drug-induced nutrient depletion (DIND), a problem far more common than acknowledged.⁸

In fact, the depleted nutrients are actually responsible for at least thirty percent of the side effects experienced from the medications themselves. It is important to recognize and be proactive in replenishing essential vitamins and minerals that can be lost. In doing so, those who must remain on certain drugs or who are in the process of transitioning from their usage lessen the risk of potential side effects while maintaining (and even increasing) the effectiveness of the medication.

You may wonder how medications rob nutrients from our body. There are primarily two ways. First, they can inhibit nutrient absorption by altering the environment of our digestive tract and affecting digestive stomach secretions (acid blockers and proton pump inhibitors), impairing the nutrients absorbed from protein, carbohydrates, and fat.

Another way is by the drugs binding to nutrients and preventing them from being absorbed, such as cholesterol resins (medication to lower cholesterol) binding to bile in the intestines. This action blocks the absorption of fat-soluble vitamins and folic acid.

The patients at most risk for these types of complications are seniors, because they take the most medications overall; however, children, pregnant women, and anyone with chronic disease will find themselves at a higher risk of drugs affecting their bodies' nutritional health.

Medications that Increase Nutritional Requirements

Despite being designed as a remedy, prescription medications have their own list of complications. The most common drugs used in conventional treatments of bowel disorders are **corticosteroids** and **sulphasalazines**. They are also prescribed for rheumatoid arthritis and fibromyalgia, among other conditions. Both medications are known to increase the nutritional requirements of the body. For example, corticosteroids are known to stimulate the decomposition of proteins (catabolism), hinder protein formation, and decrease the absorption of calcium and phosphorus while increasing the urinary excretion of vitamin C, calcium, potassium, and zinc. In addition, they increase blood glucose levels, serum triglycerides, and serum cholesterol, as well as increase the requirements for vitamin B6, ascorbic acid, folate, and vitamin D.

Corticosteroids have also been shown to decrease bone formation and impede wound healing. Sulphasalazine medications have revealed restrictions in the assimilation and transport of folate (or folic acid), a B vitamin commonly found in liver and vegetables. Sulfa drugs also reduce serum folate and iron while escalating the urinary excretion of ascorbic acid.

Medications That Lower Thyroid Function

Many different medications affect thyroid function. Medications like dopamine agonists, glucocorticoids, rexinoids, and somatostatin analogs suppress TSH in the thyrotrope (a hormone secreted by the pituitary gland that regulates the production of thyroid hormones) and in the hypothalamus. They also affect hormone secretion, synthesis, and metabolism.

Drugs can also disrupt thyroid hormone levels by altering its affinity for binding to carrier proteins like thyroxine-binding globulin, which binds thyroid hormones in the bloodstream for circulation. The worst of this group by a significant margin is rexinoids, shown to be extreme hormone receptor agonists causing hypothyroidism in patients.² A study published in the New England Journal of Medicine involving twenty-seven patients conducted by Sherman SI, Gopal J. and colleagues dealt with drug suppression of TSH and the causes of central hypothyroidism associated with retinoid X receptor-selective ligands.

An example from this case study: “A 76-year-old male with a diagnosis of cutaneous T cell lymphoma presented for enrollment into an open label study of oral bexarotene after failing multiple topical and systemic therapies. Within two weeks of starting bexarotene (650 mg/m²/day) the patient developed symptoms of hypothyroidism including cold intolerance, fatigue and depression. He was noted to have low serum T₄ and T₃ levels consistent with hypothyroidism, but his serum TSH was also suppressed. The bexarotene was discontinued; his thyroid function tests normalized and symptoms resolved.”¹⁰

Rexinoids like Bexarotene interact with a specific nuclear hormone receptor. Nuclear receptors are a group of proteins found within cells that are responsible for sensing steroid and thyroid hormones, among other molecules. Rexinoids suppress serum TSH in most patients and cause clinically significant hypothyroidism.¹¹

Glucocorticoids have long been known to affect serum TSH levels in patients, in particular at the part of the hypothalamus involving TSH secretion. A main reason for decreased levels of TSH secretion from the pituitary was noted in a study released by Alkemade and colleagues, who determined that high dosage levels of glucocorticoids decreased TRH mRNA levels in the human hypothalamus.¹²

Dopamine (the medication form of a substance that occurs naturally in the body) and dopamine agonist **bromocryptine** have been shown to suppress serum TSH. When used in cases of critical illness and with disorders like hyperprolactinemia (abnormally high levels of prolactin in the blood), these substances suppress serum TSH. Bromocryptine has also been shown to reduce serum TSH in patients with pituitary resistance to thyroid hormone therapy.¹³

Through the hypothalamic-pituitary-thyroid axis, dopamine can activate dopamine D₂ receptors but appears to have the opposite effect on the pituitary thyrotrope and the hypothalamus. Studies relating to the use of dopamine infusions on critically ill patients showed the probability of iatrogenic-induced central hypothyroidism in these patients.¹⁴

Somatostatin analogs are drugs used in the treatment of tumors, carcinoid tumors, glucogonomas, and benign pituitary tumors and as an inhibitor of growth hormones. As well, these drugs are used in infusion therapies in an attempt to prevent retinopathy in diabetics, which

also suppresses TSH levels. Studies have revealed that long-acting somatostatin analogs suppress serum TSH and dampen TRH-stimulated TSH levels in healthy volunteers. [15](#), [16](#), [17](#), [18](#)

These are just a few examples of medications that can negatively affect your hormone production and overall thyroid health. More examples will appear throughout the book, as they become relevant, to help you be on the lookout for anything that might interfere with your thyroid hormones or receptors.

An Overview of Thyroid Disease

IN TERMS OF thyroid disease, they can be grouped under two primary categories: disease as a result of your thyroid underperforming (hypothyroidism) or overperforming (hyperthyroidism).

Hypothyroidism

The term hypothyroidism falls under several different categories, from mildly underactive to permanent conditions. Hypothyroidism was first recognized during the late nineteenth century when swelling (hands, feet, face, and around the eyes) was observed following the removal of patient's thyroid gland. This is a natural occurrence due to the absence of required hormones and substances produced by the thyroid.

Mildly Underactive Thyroid

Subclinical or mild hypothyroidism is considered an early stage of hypothyroidism. This condition describes levels of thyrotropin (TSH) starting to increase as a result of T₄ levels begin to decline. Your blood tests will still show normal levels of T₄ at this stage. Your symptoms would be mild, noticing some fatigue from time to time.

Subclinical hypothyroidism is a problem area for physicians; they do not have a treatment plan in place since medications are not warranted at this stage. Rebalancing the thyroid nutritionally would be the solution.

Primary Hypothyroidism

It is estimated that ninety-five percent of hypothyroidism cases start with a dysfunction of the thyroid gland itself, known as primary hypothyroidism. The two most common causes of this condition are Hashimoto's Thyroiditis and the medical overtreatment of hyperthyroidism (overactive thyroid).

Secondary Hypothyroidism

The cause of secondary hypothyroidism describes a problem with the pituitary gland. Fortunately, these cases are rare and are usually due to a pituitary tumor. In such instances, the pituitary gland will stop producing thyrotropin (TSH), which results in the thyroid's inability to produce its own hormones, causing it to shrink and become weak.

Tertiary Hypothyroidism

Certain related disorders of the hypothalamus may cause what's known as tertiary hypothyroidism. (The hypothalamus is the part of the brain that controls the endocrine system.)

Possible underlying conditions include:

- Tumor of the hypothalamus.
- Radiation to the brain.
- Cretinism, a condition characterized by severe hypothyroidism that is present at birth.

- One in every 4,000 babies is born without a properly functioning thyroid gland, showing less than five percent of cases have a normal functioning pituitary or hypothalamus.¹ The thyroid gland may be underdeveloped or missing. Children left untreated will become permanently dwarfed, with a strong probability for mental retardation and sterility.
- Pregnant women, when the mother becomes pregnant while already having the condition of hypothyroidism, or develops it during her pregnancy.
- Hemochromatosis, an inherited disorder expressed by the abnormally high absorption of iron by the intestinal tract, resulting in excessive storage of iron.
 - This condition is also referred to as bronze diabetes, and affects the liver, pancreas, heart, joints, skin, testes, and more.

Thyroid Surgery

If misfortune has led you to a total thyroidectomy (the complete removal of your thyroid), you will require a lifetime of thyroid hormone treatment. Even though you are undergoing medical treatment for the condition, patients usually experience symptoms of hypothyroidism. Whenever possible, strive to keep one of the two lobes of the thyroid gland. This procedure (called hemithyroidectomy) is normally performed for benign growths, but is unlikely to result in hypothyroidism unless nutritional requirements of the thyroid are not being met.

Autoimmune Disorders of the Thyroid

Conditions falling under the umbrella of Thyroiditis are a common form of **primary hypothyroid disease**. You may be more familiar with Hashimoto's Thyroiditis, although atrophic thyroiditis and postpartum thyroiditis are two others. The cells of the thyroid gland come under attack in these autoimmune disorders.²

Thyroid Autoimmunity

The main cells involved in thyroid autoimmunity are our T and B cells. These cells are important immune factors and enter the thyroid gland in equal numbers. T cells are well-known for their primary infection fighting activity, identifying bacteria, viruses, and other invasive molecules. They also assist the B cells in their production of antibodies.

The problem with autoimmunity occurs when the T cells malfunction, registering molecules of the body's own cells (like the thyroid) as invaders. B cells are then immediately prompted into action, producing antibodies (auto-antibodies) designed specifically to attack these cells. When the body launches an attack on the thyroid, it is usually the auto-antibodies targeting the thyroid protein (thyroid peroxidase), which appears to destroy thyroid cells.²

Hashimoto's Thyroiditis is the most common form of autoimmune thyroid disorder in North America (discussed in much greater detail in Chapter 5).² **Atrophic Thyroiditis** is very similar to Hashimoto's disease, with exception to a goiter (which is normally absent). **Riedel's Thyroiditis** is a rare condition in which an imbalance prompts the formation of scar tissue in the thyroid gland. This scar tissue can take on the form of a hard, stony mass which can become cancerous or result

in hypothyroidism.² Autoimmune Thyroiditis during pregnancy also results in hypothyroidism, in which women develop antibodies to their own thyroid tissue.

During the first trimester, pregnant women who test positive for thyroid antibodies have a thirty to fifty percent chance of developing Thyroiditis after delivery.³

Additional Complications of Thyroid Disease

Beyond its own complications, thyroid disease is showing to be a contributing factor in a number of other health issues, including gut disease and breast cancer.

Gut Disease

A vast number of patients with undiagnosed thyroid disease also struggle with undiagnosed GI problems. Gut dysbiosis, such as inflammatory bowel disorders (IBD), has reached pandemic proportions in recent years. Several facets of gut disorders trigger an immune response, which is showing to be a key mechanism in thyroid dysfunction and which directly contributes to other major autoimmune disorders and disease conditions.

Our digestive health is one of the most common concerns facing people around the world today. Constantly on the rise, 1.6 million Americans have IBD, and 70,000 new cases are diagnosed each year.⁴

Having worked extensively in the area of gastrointestinal health, I have long since recognized the correlation between bowel inflammation disorders (leaky gut and disturbed intestinal lining) and thyroid issues, specifically Hashimoto's Thyroiditis. Evidence of potential mechanisms supports an autoimmune response triggered by dietary factors; in the case of Hashimoto's disease, gluten is the main link and instigator (and is the root cause in over 90 percent of all hypothyroidism cases.) Recognizing this fact, gluten intake could therefore severely impact an existing condition of Hashimoto's Thyroiditis.⁵

Be assured, the gut is a crucial etiological contributor in how your thyroid performs. Research is ongoing, but it is now apparent that dietary factors have a direct influence on the health and function of your thyroid gland.

Breast Cancer

Also noted in Broda Barnes, Ph.D. collective data, recent studies have observed the exceptionally high rate of hypothyroidism/goiter and the high incidence of cancer. Published in The Journal of the American Medical Association (1976), his article "Thyroid Supplements and Breast Cancer" evidenced the rate of breast cancer and thyroid dysfunction. Dr. Barnes states, "Graz is a goiter area; the entire population suffers from a relative thyroid deficiency. Thyroid replacement is rarely employed there. Yet the incidence of breast cancer is as high as ten times that seen in the United States."¹

Thyroid hormone receptors affect both of the processes by which cells change, whether it is normal breast cell function or breast cancer cell proliferation. Breast cancer was documented in several studies demonstrating thyroid involvement.^{6, 7, 8, 9, 10}

Taken from several selected studies and analyzed, researchers concluded that problems with the thyroid are associated with breast cancer. A study performed by P.J. Hardefeldt, G.D. Eslick, and S. Edirimanne was centered on benign thyroid disease and breast cancer. Results showed that "There was significant evidence of an increased risk of Breast Cancer in patients with autoimmune

thyroiditis. In addition, the results supported an increased risk associated with the presence of anti-thyroid antibodies and goiter.”[11](#), [12](#), [13](#)

Taking note of these findings and the fact that breast cancer is steadily on the rise, it makes it even more critical to be sure your thyroid and immune system is functioning properly.

Reversing Thyroid Disease—Naturally

Whether this book finds you in a state of good health or during one of life’s many challenges, over time, imbalances will occur in most of us. Unfortunately, it is pretty much a guarantee for those who have not learned how to feed their bodies appropriately, as dictated by our cells and body systems. My goal in writing this book, as always, is to help you become more proactive with your health, to reach for the best health you can have.

Remember that diet is the best tool we have in overcoming a vast number of emotional and physical illnesses. But like most things that involve change, it takes practice to develop self-control and a new routine, whether it’s taking a few supplements on a daily basis or making a point to add something different to your diet that is *really* healthy. Know that your body and brain will work with you to help you stick to new healthier choices. In other words, the longer you apply a different food or routine, the easier it gets!

Even exercise has proven to help people exert better self-control and be more disciplined. Improved food choices and activities impact the frontal lobe of our brain, shown to assist us in accomplishing tasks both big and small. One of the biggest hurdles facing someone starting something new is seeing it through to the end. Our brain can actually help us with this challenge. It can help you resist temptation and impulsiveness, help you with organizing and planning, and ultimately assist us in adapting to any challenges we’ve taken on.

My own journey was no different than yours will be. As I adopted better food choices and learned of specific nutrients that are used in greater amounts by the body, I felt the changes that you will feel. These feelings are evidence of a change for the better. Again, though there will be very specific requirements needed to help correct long-term deficiencies that have ultimately created a chronic symptom or disease, you *can* reverse the damage done. Your body will quickly show its appreciation for your efforts towards better nutritional support. By simply picking up a couple of key nutrients needed by your thyroid gland, the change will have already begun. Energy is the first noticeable sign of improved health—look for it!

In the following chapter, we will delve into thyroid-disrupting chemicals and hormone inhibitors, as well as the all-important role of the adrenal glands as they pertain to thyroid gland function. To start with, we’ll take a look at the critical tasks performed by enzymes and what valuable nutrients are needed for thyroid function.

Thyroid Disrupters and Inhibitors

IN THIS CHAPTER, we'll focus on a variety of thyroid disrupters and inhibitors, ranging from enzymes to chemicals—including those of our own adrenal glands.

Thyroid Disrupters: Enzymes

There are over 75,000 enzymes in our body whose role it is to activate metabolic changes, using magnesium and zinc as catalysts. For our purposes, we will be touching on two specific enzymes: iodothyronine deiodinase and adenylate cyclase.

You may well ask why it is important to understand the role these enzymes play in my body. It primarily has to do with *chemicals* that get taken into the body and how they can inhibit those all-important functions tied into the thyroid gland. Chemical toxins can both destroy and deactivate enzymes in our body (hence, they are also known as inhibitors). The net effect is that our hormones cannot deliver messages to our cells (which they do via enzymes), and our hormone blood levels remain normal even though they are no longer having an influence over our cells (catalysts).

The most common inhibitors come from heavy metals, industrial pollutants, medications, pesticides/fungicides, cigarette smoke, our body's own endotoxins, and household chemicals, all of which contribute to the destruction of enzymes in our body.^{1,2}

Iodothyronine Deiodinase and Mercury

Throughout my entire academic and professional career, I have been aware of mercury's potential for triggering autoimmune problems, but it has recently become apparent that it is also a major thyroid disrupter. Like other thyroid-disrupting chemicals, mercury harms cell receptors and negatively affects hormone production. This is particularly troublesome given how prevalent this chemical is, entering our body through flu shots, vaccines, dental amalgams, fish consumption, and coal burning factories.

Regardless of normal serum T₄ levels, mercury has an inhibitory effect on the enzyme **iodothyronine deiodinase**, which results in hypothyroidism. This happens due to the fact that in order to convert T₄ to T₃, the enzyme deiodinase is required (along with the minerals zinc and selenium, which are needed to activate the enzyme).

But how does this reveal itself in a blood test? The problem is that your blood test will still show thyroid hormones to be in normal range even if your thyroid hormone is unable to bind to cell receptors, resulting in symptoms of hypothyroidism.

One of your best options for detoxifying mercury in your body is to maintain sufficient levels of glutathione. **Glutathione** is stored in your liver (also referred to as Phase 2 detoxification), as well in the cells of our body. Foods showing higher levels of glutathione are red beets, whey protein, garlic and other sulfur rich vegetables, raw goat whey and milk, raw eggs, asparagus, avocados, aloe vera, peaches, watermelon, grape seed extract, bilberry, rosemary, Pycnogenol from pine bark, and Brazil nuts (the highest natural source of selenium).

Adenylate Cyclase and Chemical Pollutants

The enzyme Adenylate cyclase plays a prominent role in the sequence of changes occurring in cells specific to important hormones like the thyroid stimulation hormone (TSH). Part of this messenger process also involves Adenosine monophosphate (c AMP), a critical messenger of cells. As the influence of this second messenger trickles down the metabolic pathway, major glands and hormones are affected; if it were not available to activate changes in cells related to specific hormones, it would result in widespread systematic loss of function. In other words, if Adenylate cyclase and Adenosine monophosphate become disrupted, all mechanisms dependent upon these molecules would shut down, including thyroid function. Typical causes of these disruptions include interference by chemical pollutants, taken into the body by way of food, pharmaceuticals, and the environment.

Other Thyroid Inhibitors

There are various reasons why some people cannot convert T4 to T3 efficiently in addition to toxic chemical effects. Some reasons can be related to nutrition, which may be inhibited by malabsorption brought about by the aging process and the effects of certain drugs. There may also be issues related to independently poor functionality in main areas of the endocrine system, such as the liver, adrenals, and pancreas.

Aging Process

Similar to, but slightly different than, the potential causes for thyroid dysfunction, thyroid symptoms can also present when there is a lack of specific elements due to poor absorption or medication. When vitamin and mineral absorption is depressed, it directly affects the thyroid hormone conversion; several medication types affect this, as well, including thyroid medication (discussed in Chapter Two). As people age, nutrient absorption through the intestines becomes impaired; for this reason, supplementation is vital to maintain quality of life, as the missing nutrients will lead to poor conversion of T4 to T3. Nutrients to supplement include antioxidants, selenium, zinc, magnesium, iron, and vitamins A, B6, and B12.

Lack of Important Nutrients

Nutrients that are critical for thyroid function and its production of T4 include iodine, tyrosine, chromium, selenium, and zinc.

The importance of these nutrients will be discussed in greater detail throughout this book; for now, just understand that when these items become unavailable (whether through the diet or are just in very low supply) thyroid function will be diminished. A few other reasons for why someone may be lacking in these nutrients, other than an inadequate diet source, include gastrointestinal problems, oral contraceptives, low acidophilus/bifidus organisms (needed by the thyroid and the immune system), and a diet high in processed foods (food processing easily destroys these nutrients).

The Liver Affects Conversion of T4 to T3

The liver plays an important and protective role in thyroid function. About twenty percent of the body's conversion of T4 to T3 takes place in the liver. The hormone T4 (the inactive form) is produced in far greater amounts compared to T3 (the active form). A compromised liver will be reduced in its ability to convert T4 to T3. Another way the liver inhibits hormone conversion is

when there is a surplus of Reverse T3 (RT3), which hinders the conversion of T4 to T3. A sluggish and lower-functioning liver does not normally reveal itself on blood tests that check for enzymes having to do with chronic liver diseases, and tests do not look for similar problems induced by medications. If your liver isn't functioning optimally and you have a problem converting T4 to T3, consider a liver detoxification program.³

Glyphosate

Our world is overflowing with chemical toxins. An ingredient found in Roundup, **glyphosate**, is cause for alarm, as it renders us susceptible to Hashimoto's Thyroiditis and Graves' disease, among other health risks.⁴ Glyphosate has a negative effect on our gut microbiome, promoting intestinal permeability, which can trigger autoimmune disorders like Hashimoto's.^{5, 6} The beneficial bacterium lactobacillus, when functioning properly in our bodies, converts inorganic selenium into a bioavailable form. While we know selenium is needed in the formation of thyroid hormones, numerous studies show how selenium can help to lower thyroid antibodies.

Soy Inhibits Thyroid Function

Soy has made the list of the eight most significant food allergens, as put out by the Food and Agriculture Organization of the United States. People with thyroid and autoimmune thyroid disorder conditions should consider avoiding soy, especially if you are sensitive or allergic to soy. Remember: if you are simply sensitive to a food or substance, you may not see a reaction for several hours or even a couple of days, while an allergic reaction is usually immediate.^{7, 8, 9}

If you continue to eat foods to which you have a negative reaction, you will develop inflammation that leads to leaky gut syndrome and other autoimmune problems. Soy being a genetically modified (GMO) food, it also contains high residues of **glyphosate**.

Soy also contains **goitrogen** properties, which are substances that inhibit thyroid function. Short term studies (such as one-week studies) show a minimal effect on thyroid hormones, although longer studies did show a marked risk of developing overt hypothyroidism (overt hypothyroidism describes elevated TSH and decreased serum levels of T4 or T3).¹⁰

Adrenal Stress and Fatigue

There are many reasons why adrenal stress reduces the conversion of T4 to T3 and why weak adrenals can cause hypothyroid symptoms, even when the thyroid does not show any deficiencies itself. One example involves adrenal stress disrupting the hypothalamic, pituitary, and adrenal axis (HPA). Chronic stress has also been shown to depress hypothalamic and pituitary function. Since these two organs direct thyroid function, any interruption of the HPA axis will also suppress thyroid function.

In other words, adrenal function must be established and adequately supported before the thyroid gland can function properly. This is because hormones secreted by the adrenal glands play crucial roles throughout the body, some of which are directly related to thyroid health and gonads. Determining factors resulting in stress to the adrenal glands include internal imbalances, such as gut inflammation and digestion problems, and a weak immune system. Other factors to consider include constant emotional stressors, such as the chronic threat of loss (of a job, financial security, or a loved one) and persistent day-to-day occurrences that ultimately deplete our glands and body.

Psychological stress is only part of the problem; environmental stressors are another component, including air pollution, household molds, pathogens, radiation (EMFs), and toxins such as pesticides and fungicides.

We cannot properly treat thyroid dysfunction without considering the role played by the adrenal glands. For this reason, it is necessary to address the needs of the adrenals to prevent further disruption through its excess production of cortisol. The stress hormone cortisol can either inhibit thyroid hormone production or inhibit its ability to bind to receptors.

Adrenal Glands and the Pancreas

Another inhibiting factor to consider is the role of the pancreas. Healthy blood sugar levels are as equally important for optimum thyroid function.¹¹ The thyroid, the adrenals, and the pancreas—these three members of our endocrine system constantly interrelate with each other in an ongoing cycle. The adrenal glands can put the squeeze on the pancreas, causing it to secrete a rush of insulin. In doing so, this surge of blood sugar further decreases thyroid hormone production.

The Adrenal Glands

As more information on our physiology is revealed, we've come to understand the impact our adrenal glands have on our thyroid when they become low functioning and imbalanced in their hormone secretions. This section will shed some light on the important role the adrenals play, the problems of dysfunction, and how to test for their level of function, as well as how to best nutritionally support these tireless glands.

The adrenal glands are small, grape-sized glands that lie on top of the kidneys. You can think of them as our shock absorbers; these very hard-working glands have often been likened to overachievers, and are responsible for regulating our body's response to stress. The adrenal glands consist of two main sections, described as the outer adrenal cortex and the inner adrenal medulla. The adrenal glands have a special connection to the brain (the medulla), as opposed to other glands, whose messages are related via hormone pathways. The medulla is a direct hotline of sorts due to a nerve pathway connection from the brain to the inner medulla. The brain is so designed to allow for rapid responses to stressful situations, such as when the flight-or-fight response is triggered.

As mentioned earlier, the thyroid, adrenals, and pancreas work as a triad, always interrelated. Thus, even though the body is to be treated as a whole, the thyroid and adrenal glands and the hormones they produce greatly impact how we feel and cope when it comes to energy levels, cravings, stress, mood swings, water retention, weight gain and loss, patience, anger, and anxiety. Adrenal dysfunction can also lead to food sensitivities, blood sugar imbalances, and infections. Basically, the adrenal glands are involved in all perceived stressors that impact the body. A few examples of physiological effects due to the adrenal glands include hormonal balancing, gastrointestinal function, thyroid and immune function, bone metabolism, and more.

How the Adrenals Respond to Stress

We are all familiar with how we feel when our body reacts to stress. We tense up, our heart beats faster, and our brain is acutely focused. Of course, modern day stress doesn't involve us fleeing for our lives; more likely, we're worrying over a late-night email from work or how to shuttle our children off to an event because you have to work. But regardless of the triggers, the initial response is stimulated by the hormones **noradrenaline** and **adrenaline**. These are released by the medulla in response to stress.

Initially, the sympathetic nervous system is stimulated by the hypothalamus to alert the body of impending danger. In reaction to this response, the body draws upon nutrients and increases

blood supply to the heart, brain, and muscles. When dealing with normal daily stressors in a healthy way, the body secretes the hormones DHEA, cortisol, and adrenaline.¹²

However, when stress becomes chronic, it severely disrupts the secretion and balance of adrenal hormones. As many of us know, cholesterol is necessary for the production of hormones in the body. Under chronic stress, cortisol becomes highly demanded. The main adrenal hormone, **pregnenolone**, is then directed to progesterone production to enhance cortisol production (pregnenolone is derived from cytochrome p450 enzymes). Pregnenolone can be converted into hormones and derivatives such as progesterone, cortisol, aldosterone, DHEA, and androstenedione (precursors to estrogen and testosterone).

Herein lies the problem: as pregnenolone makes its way towards progesterone and cortisol production, DHEA levels decline, causing estrogen and testosterone levels to also decline. In response to the drop in these essential hormones, the following symptoms surface: depression, hot flashes, sexual dysfunction, low libido, poor memory, lack of energy, and more.

Adrenal Gland Laboratory Testing

The adrenal salivary test is the most popular method for assessing adrenal function. It is simple enough; the patient takes four saliva samples throughout the course of their day. These samples help determine salivary cortisol and DHEA levels (although other factors need to be incorporated, like the patient's history and symptoms).

A study involving serum cortisol and salivary cortisol shows almost no difference in test results. A test conducted by ClinChem Lab in 1998 found that "In 42 of the 45 tests performed, the same conclusion as to cortisol status was drawn when based on serum and salivary cortisol responses. In healthy subjects and good responders, the mean cortisol relative increase was greater in saliva than in serum in all three tests."

Adrenal Gland Dysfunction

Overactive adrenal glands produce too much cortisol, epinephrine (adrenaline), and aldosterone, all of which may lead to insulin resistance and metabolic syndrome.

Underactive adrenal glands essentially do the opposite, producing inadequate amounts of hormones such as cortisol, which then interrupt the release of insulin, causing symptoms of hypoglycemia. Symptoms related to low blood sugar may be trembling, feeling lightheaded, impatience, and irritability.

The adrenal glands produce epinephrine and norepinephrine (noradrenaline), both of which are hormones that stimulate the heart and metabolic activity. Of the two hormones produced, eighty percent is epinephrine, which is the more potent stimulator.

Symptoms of adrenal exhaustion are extreme fatigue, often accompanied by psychological stress. Adrenal fatigue is a collection of symptoms and indicators; for example, a person exhibiting extreme fatigue may crave salt and experience weakness in the legs. Prolonged and acute stress due to illnesses such as respiratory infections, influenza, bronchitis, or pneumonia, can leave the adrenal glands depleted. Unfortunately, the symptom of fatigue is not relieved by sleep. Another scenario where adrenals become exhausted is in cases where the threat of death is looming, either for the person themselves or a caregiver, such as in cases where a parent with a child is dealing with a prolonged illness.¹³

But being overtired or weak are not the worst symptoms associated with adrenal fatigue. Feelings of being overwhelmed, coupled with the emotion of sadness and depression, add to an already

weakened state. All too often, people suffering from adrenal fatigue or exhaustion routinely turn to stimulants like coffee and colas to get them through the day. Stress may also be compounded by and related to the frequent use of caffeine, alcohol, nicotine, and medications. You may want to consider natural methods of propping up your adrenals if you regularly experience one or more of the following symptoms:

- Fatigue or listlessness, in spite of adequate sleep.
- Still feeling tired in the morning even when you've had eight hours of sleep.
- No "get up and go," feeling worn out and weighed down.
- Do not have the reserves to bounce back from stress or illness.
- Lack of sleep as a result of insomnia.
- Sluggishness, especially in the morning and mid-afternoon (the thyroid gland reaches its low for the day at mid-afternoon).
- Low libido or a decrease in sex drive.
- Requires a great deal of effort to do everyday tasks.
- Stress becomes overwhelming.
- Heightened PMS symptoms .
- Brain fog, hard to focus; memory problems.
- Water retention.
- Far less resistance to bacteria and virus invasion; recovery time is much longer.
- Mild depression to feelings of desperation.

Under these circumstances, a person will not experience much enjoyment or happiness in their life. Other symptoms of low adrenals include higher-than-normal levels of cortisol (a stress hormone), which often signals fat storage. During this time, adrenaline may be over-produced, creating more unwanted feelings. Overproduction of unwelcome substances like cortisol and other hormones needlessly overworks the glands, weakening them. This scenario may create sugar cravings and eating binges.¹⁴

Supporting the Adrenal Glands

A broad range of vitamins and minerals should be considered when supporting the adrenal glands. Adequate nutrition through diet and supplements will lower cortisol output while aiding and relieving stress (while also reducing cravings).^{15, 16, 17}

Many symptoms of adrenal exhaustion may be related to a deficient dietary intake of pantothenic acid, since these glands are dependent on this nutrient. B5 (pantothenic acid) is earmarked for the adrenal glands by the body, and should be balanced with the other B vitamins when taking a higher dosage of B5. Adaptogenic herbs, like ginseng and ashwagandha, are very supportive, and rhodiola and phosphatidylserine are particularly helpful. Essential fatty acids (EFAs) are highly endorsed, as with all glandular tissue issues. Glands in general want high quality protein and fats, and essential fatty acids (EFAs) are a type of good fat that the body requires for proper functioning and restoring. EFAs are always earmarked for the endocrine system as a whole as well as each gland or organ individually.

Full adrenal support formulas can be especially helpful. These are specialized combination products available through practitioners and some health food stores. This type of supplement offers more support than individual supplements and may be a combination of desiccated

glandular extracts or a combination of vitamins, minerals, herbs, and amino acids. Most companies have combination products for glandular support; while fewer in number, there are those who offer raw or desiccated glandular extracts. The United States has several sources, including Natural Sources, Solaray, Seroyal, NatraBio, and others. Combination formulas include Natural Factors, Thorne, Now, Sangsters, Eclectic Institute, Vitamin Shoppe Brand, Herb Pharm, and several other companies.

Other methods of supporting the adrenals through nutrition and supplementation include:

- Omega-3 fatty acids in adequate amounts (fish oil, cold pressed seed and nut oils).
- Avoiding stimulants such as caffeine, alcohol, tobacco, soda, sugar, and excessive carbohydrates.
- Beneficial supplements, including antioxidants, EFAs, vitamin C, vitamin E, and all B vitamins, magnesium (alone or coupled with calcium), and zinc (with 2 mg of copper).
- Raw vegetable juice.
- Bee pollen and propolis.
- Algae, including blue-green and chlorella.
- Amino acid complex.
- Pregnenolone and DHEA.
- L-Tyrosine (the two main adrenal hormones, epinephrine and adrenaline, are formed from the amino acid tyrosine).¹⁸

Now that you have learned about both unnatural and natural thyroid inhibitors, the next chapter will focus on those thyroid issues that can arise due to an autoimmune response, otherwise known as Hashimoto's Thyroiditis.

Hashimoto's Disease

THE THYROID CONDITION Hashimoto's, named after the surgeon who discovered it in 1912, is an autoimmune disorder in which immune cells attack thyroid tissue rather than protect it. Also known as thyroiditis and chronic lymphocytic thyroiditis (CLT), immune cells called **lymphocytes** enter the thyroid gland, damaging cells, tissue, and blood vessels, which results in inflammation of the thyroid gland.^{1, 2}

But why would the immune system attack the thyroid gland?

In truth, the attack is an accident; the immune system mistakenly attacks our thyroid as a result of problems surrounding the ingestion of gluten and gut permeability. In the process of leaky gut syndrome and food sensitivities, gluten finds itself in places where it does not belong, and the body responds with an immune response to remove and destroy the problem.

But instead of it being a normal immune reaction, we see the immune system is malfunctioning. The issue is that gluten has an almost identical matrix, or profile, to thyroid tissue. Because of this coincidence, the immune system cannot differentiate between thyroid tissue and the protein gluten. For this reason, this scenario—Hashimoto's Thyroiditis—has become the number one thyroid condition in North America: **hypothyroidism**.^{3, 4, 5, 6, 7}

So, why does this scenario cause hypothyroidism?

When thyroid tissue comes under attack from rogue immune cells, it inhibits the production of thyroid hormones. As the influence of Hashimoto's disease continues, the thyroid gland will be unable to properly produce thyroid hormones, the end result of which is hypothyroidism.^{8, 9}

People can go for years without realizing they have Hashimoto's Thyroiditis. For general awareness, the two most common conditions associated with Hashimoto's disease are hypothyroidism and goiter. Specific symptoms of Hashimoto's and hypothyroidism can be found in Chapter 3.¹⁰

Two tests can help diagnose the presence of antibodies and their levels: the thyroid peroxidase antibody test and the anti-thyroglobulin antibody test. These tests, known as microsomal antibodies tests, will ultimately help to determine the reason for your hypothyroidism—either to include or exclude Hashimoto's Thyroiditis as the cause.

Immune Imbalance

The immune system operates through several mechanisms (as does autoimmune dysfunction). Th cells, short for T helper cells, are the cells which initiate the release of cytokines that guide other immune cells to attack. A person may be Th1 dominant or Th2 dominant. Th1 cells do not involve antibodies, but do respond to foreign proteins through the release of various cytokines.

Hashimoto's disease is extremely complex, with immune triggers varying from one person to another. What stimulates Th1 activation in one patient may be underactive in another. The same applies to Th2, which may over activate and/or simultaneously depress Th1. Chronic inflammation is strongly associated with Th1 dominance caused by the overstimulation of

immune cells, commonly lymphocytes (T cells and natural killer cells) and macrophages. To help determine which immune category your illness or thyroid condition registers under, consider the following examples:¹¹

Th1 Dominance

- Hashimoto's Thyroiditis: Low T3 levels or an imbalance between T3 and T4
- Graves' disease
- Multiple sclerosis
- Celiac disease

People with Th1 dominance tend to get sick much less often, as their immune system is on guard. There is also a lower probability of cancer, as cytokines like interferon gamma and TNF are in pursuit of tumor cells and destroy them; however, certain cancers (multiple myelomas) are Th1 dominant.^{12, 13}

Th2 Dominance

- Lupus
- Inflammatory bowel disease
- Ulcerative colitis
- Cancer
- Brain fog
- Seasonal allergies
- Asthma
- Eczema (dermatitis)
- IgE-related allergies (producing more immediate response such as in skin tests)

Th2 dominance is shown through lower levels of systemic inflammation; Th2 is considered an anti-inflammatory profile. Instant food allergies are more likely to occur, as Th2 dominance produces more antibodies.

Neither Th1 or Th2 Dominant

- Autism
- Crohn's disease/colitis
- Irritable bowel syndrome
- ADHD/OCD
- Heart disease

Balancing Th1 and Th2 Cells

Both types of immune cells (Th1 and Th2) can be stimulated by the properties in botanicals, meaning supplementing their function is possible.

Examples of Th1 stimulating compounds include astragalus, echinacea, maitake, lemon balm, ginseng, algae (chlorella), licorice, and grape seed extract. To dampen Th1 cells, the following supplements have proven helpful: fish oil, olive leaf extract, boswellia, pregnenolone, EGCG, curcumin (taken earlier in the day), and high dosages of resveratrol.

Th2 stimulating compounds can be found in antioxidants and properties in botanicals such as green tea extract, pine bark extract, matcha tea, white willow bark, caffeine, lycopene, resveratrol, pycnogenol (an extract of the French maritime pine bark), gotu kola, curcumin, quercetin, and genistein (a property in soybeans).

Supplementing with trimethylglycine (TMG), SAM-e, and B-vitamins will help deactivate the immune system to a certain degree.¹⁴

Glutathione has also been shown to have some positive effect in treating Hashimoto's. Glutathione is a potent antioxidant and has demonstrated great benefit as an immune modulator. It has shown to help regulate and strengthen the immune system while dampening autoimmune response with conditions like Hashimoto's disease. Among its long list of credits, glutathione promotes healing and protection to thyroid tissue.

Hashimoto's Disease and Gluten

The hard truth is that you *will* need to eliminate gluten from your diet if any antibodies show up in tests indicating an autoimmune disorder of the thyroid. Gluten is a protein found in commonly-eaten grains and products made from them; examples include wheat, barley, rye, bulgur, setain, triticale, and many derivatives of wheat.

However, most physicians will not mention gluten or other dietary interventions when discussing Hashimoto's Thyroiditis. Rather, patients will be given thyroid medication, but as we have come to know, medications do not address autoimmune responses that damage thyroid tissue and function. Rather, the trigger that sets off the immune response must be discovered and steps must be taken to avoid the instigators of immune response and inflammation.¹⁵

From a holistic perspective, the underlying cause of your thyroid dysfunction, as well as any individual unique causes of hypothyroidism, should be investigated. Finding the origin and trigger of gut complaints involves investigation on the part of the practitioner, as well as full involvement on the part of the patient when initiating the reversal process and in ultimately establishing complete recovery from these conditions.

More awareness and education is needed, both among physicians and the general public. We cannot mask these diseases; we must commit to doing our due diligence and adapting around our intolerances. For many of those desiring to achieve and sustain normality, know that it is attainable through the proper management of diet and lifestyle.¹⁶

Some people will admittedly require additional help from complementary medicine and supplementation, especially in the initial stages. The digestive system is unique to each individual and needs to be treated as such. Long-term illness or more severe conditions (as seen with inflammatory bowel diseases) put a greater responsibility on the patient to incorporate an appropriate time allowance for the healing process. The same may be said of the healing process of Hashimoto's Thyroiditis; understanding the basics of bowel anatomy and physiology will give us further insight into the causes and effects of the many substances that are routinely taken into our bodies and absorbed.

Correcting Hashimoto's Immune Imbalance

A main feature in treating Hashimoto's Thyroiditis, whether the cause is dietary or due to autoimmunity, is to correct the levels of thyroid hormone in the body. Regardless of immune dysfunction, the main focus must involve enhancing regulatory T cell function, removing immune triggers, and treating existing inflammation.

Poor functioning systems, problems with the diet, bacterial infections, and toxins are among the main instigators for promoting autoimmune activity and immune imbalance.

Besides these, certain medications and estrogen fluctuations have also been attributed to autoimmune attacks on the thyroid. Whenever the body is functioning less than optimally or dealing with chronic illness, the following items will enhance thyroid dysfunction (in addition to many other complaints): nutrient deficiencies, problems with gluten, blood sugar fluctuations, adrenal fatigue, leaky gut syndrome, excessive amounts of iodine, and food intolerances/sensitivities.¹⁷

Hashimoto's Thyroiditis Affects Brain Health

We know that inflammation contributes and supports all symptom complaints, whether they are mild or severe. But did you know that your thyroid hormones are necessary for dampening brain inflammation? The inflammatory response generated by Hashimoto's can trigger the brain's immune response, causing inflammation of the brain. This is a direct result of Hashimoto's disease, which leads to reduced thyroid hormone production.^{18, 19}

While thyroid hormone production can be corrected naturally, for many patients dealing with thyroid inflammation issues, their immune dysfunction—as it relates to other areas of the body, such as the brain—goes unchecked. A common problem associated with brain inflammation is neurodegeneration causing brain fatigue, depression, accelerated aging, and brain fog, especially when Hashimoto's is not addressed.

Hashimoto's Disrupts the Brain's Immune System

Our brain consists of two types of cells: neurons and microglia cells. **Neurons** are involved in our bodies' automatic responses like breathing, digestion, and our heart beating, in addition to our intelligence and emotions.

Microglia cells make up the brain's immune system, but they are unlike the immune system in the rest of the body. The brain's microglia cells perform full-on attacks on invaders and lack the other T suppressor cells that would call off the attack. Due to this lack of restraint, the microglia cells create brain inflammation that actually degenerates brain tissue.

As mentioned, thyroid hormones step in at this point to dampen microglial cell overactivity. But because Hashimoto's causes low thyroid hormone production, it in turn activates microglia cells and leads to brain inflammation and degeneration. In other words, Hashimoto's Thyroiditis causes an inflammatory response that increases activity of the brain's cells (microglia), resulting in brain inflammation, while also failing to provide the hormones needed to dampen said activity.²⁰

Healthy microglia cells make for a healthy blood-brain barrier, which is necessary to keep foreign material and pathogens out of the brain. There are several reasons why this important barrier may become leaky, of which prolonged Hashimoto's disease is one. Other causes for blood-brain barrier leakage include inflammation, high serum zonulin, chronic stress, blood sugar problems (especially insulin resistance), poor diet, lack of healthy fats, a diet high in bad fats, and autoimmune activity. Similar in concept to leaky gut syndrome, both are susceptible to many of the same problems, including gluten.^{21, 22}

Since it may be hard to understand the influence of leaky gut syndrome and how best to approach it, the following information will touch on causes, testing for, and suggested nutritional requirements to help restore your mucosal lining while dampening your autoimmune response.

Related Disorders

Since Hashimoto's Thyroiditis is an autoimmune disorder and the thyroid gland is involved in critical relationships with the rest of the body, it's no surprise that hypothyroidism increases one's risk of other autoimmune disorders (and to a lesser degree, thyroid lymphoma, a type of cancer).²³

Some examples include:

- Graves' disease
- Addison's disease
- Type 1 diabetes
- Lupus
- Thyroid cancer
- Rheumatoid arthritis
- Blood clotting problems (thrombocytopenic purpura)
- Pernicious anemia
- Vitiligo (skin discoloration/white patches)
- Ovarian failure (premature)

Viral and Bacterial Infections

In addition, as Hashimoto's compromises the immune system, it can be helpful to test for the following pathogens if you suspect an infection to be the underlying cause of your thyroid disorder:

- Rubella
- Retrovirus
- Influenza B
- Lyme disease
- Epstein-Barr
- H-Pylori
- Cocksakie
- Yersinia (gut bacteria)

These infectious microbes disrupt TSH receptors and imbalance your immune system.

Epstein-Barr Infection and Hashimoto's

Epstein-Barr virus (EBV), also called mono, spreads primarily through personal contact by way of saliva, and is one of the most common human viruses in the world. Apparently, most people have been infected in their lifetime, yet remain symptom free.²⁴

Most people would not consider EBV when discussing a thyroid condition; however, as the immune system weakens over time, this virus can reactivate and even show up in people's thyroid tissue, inciting an autoimmune disorder. One such study (2015) found the Epstein-Barr virus in the thyroid cells of 80.7 percent of participants with Hashimoto's disease and the hyperthyroid condition of Graves', resulting in 62.5 percent of cases.²⁵

Request through your doctor the Epstein-Barr Virus Early Antigen test if you suspect this virus may be active.

Treat Epstein-Barr Virus Naturally

When choosing a natural remedy to treat EBV, keep in mind that it is of the herpes virus family; therefore, any recommendations for the treatment of herpes would be helpful, such as the amino acid lysine and vitamin C. For items that directly eradicate infection, consider olive leaf extract, colloidal silver, and oregano oil.

Other helpful choices include glycyrrhizic acid (a property in licorice) with inhibitory effects on EBV, also proven to be highly effective for soothing inflammation of the digestive system. The immune-boosting qualities in Reishi and other healing mushrooms are also wonderful as an accompaniment to any virus/bacterial program. Lastly, monolaurin (derived from coconut) also works, and has been shown to have potent antimicrobial activity. Lauric acid and capric acid, both properties in coconut, change into a glycerol molecule (monoglyceride) called monolaurin and monocaprin.²⁶

Chemical Toxins

Environmental toxins are prevalent in our daily existence and are a contributing factor of autoimmune disorders. Mercury is a well-known promoter of autoimmune activity involved with Hashimoto's disease, rheumatoid arthritis, fibromyalgia, and autism. Consider testing for mercury and other heavy metals/chemicals, as these will negatively contribute to your thyroid condition.²⁷
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Reducing Inflammation

All of these conditions are directly tied into the body's inflammation response initiated by the immune system. Initially, the immune reacts to anything it registers as harmful. Inflammation is then set in motion; therefore, in treating an autoimmune complaint, all substances (organic or inorganic) that incite immune cells to attack should be eliminated. These include cooking oils (omega 6 fatty acids), which are pro-inflammatory and disease promoting, as well as food additives and preservatives and any food items that cause digestion problems.

For a complete guide on the best methods to treat and stop the spread of inflammation in the body, pick up my book **Reverse Inflammation Naturally**. Thyroiditis is an inflammatory/autoimmune condition. Learn all about what initiates an autoimmune response in this and many other mainstream disease complaints **and** how to undo this process in your body.

Leaky Gut Syndrome

Individuals with leaky gut syndrome do not absorb nutrients properly. This is because a person's gut, which has experienced a lot of inflammation and irritation from a variety of causes, has holes in it. There are a number of causes which can lead to damage and deterioration of the gut's mucosal barrier; a few of these include high levels of fecal and serum zonulin (an intestinal protein), chemical toxicity, excessive alcohol consumption, chronic stress, infections, medications, lack of digestive enzymes, food intolerances, allergies, and nutritional deficiencies.

There are also conditions associated with leaky gut syndrome, such as gastric complaints and digestive disorders involving bloating, constipation, and diarrhea, as well as candida and fungal infections.

To reiterate, when a gut becomes damaged from extended periods of irritation, as seen in the cases of gut disorders, the intestinal lining will be far more permeable than a gut would be from a normal bad habit, such as drinking too much coffee. When the gut has become too permeable,

substances like gluten (the protein found in grains) will slip through the holes and into the bloodstream. The body does not tolerate this protein in the blood and instructs the immune system to remove it. Because of this immune response and the fact that gluten is identical in matrix to thyroid tissue, the body triggers an autoimmune response that attacks both gluten and thyroid tissue simultaneously.

As many people know from taking too many antibiotics, once an invader has been recognized, the body will be on the alert for the next time it shows up. Consequently, a person who did not have a problem eating starches with gluten in the past now discovers an allergy or intolerance to the protein gluten. This condition may not be permanent, especially if the individual does not have a history of gluten intolerance, but the initial protocol to resolve the issue will be the same.

Lab Tests for Leaky Gut

When testing to determine how leaky your gut is, practitioners will use a test called the lactulose--mannitol challenge test, which measures the permeability of the patient's gut. In performing this test, the patient consumes orally five grams each of the sugars lactulose and mannitol. The normal ratio within the gut is less than one percent permeable of lactulose, to approximately fourteen percent of mannitol, which is a smaller molecule. Once absorbed, the test measures urinary excretion of both sugars and then compares the ratio of lactulose to mannitol. Under normal conditions, the gut would measure less than 0.03 percent of lactulose to mannitol, whereas a leaky gut will register a higher ratio of lactulose to mannitol, indicating a loss of lactulose across the intestinal barrier wall.

Zonulin and Gut Permeability

A main aspect of gut permeability is the breakdown of intestinal junctions (tight junctions between intestinal epithelial cells) which allows foreign particles, microbes, and poorly-digested food to enter the blood stream.

Dr. Alessio Fasano recently discovered zonulin, an intestinal protein whose primary function is to regulate the passage of substances between the gut and the bloodstream. Dr. Fasano determined that when too much zonulin is released, intestinal junction points become weak and begin to leak. Other cellular receptors for zonulin can be found in the brain and heart, in addition to the small and large intestine.

When viewed alongside increased gut permeability and elevated levels of zonulin, a strong correlation has developed with several autoimmune and inflammatory disorders, as well as neoplastic diseases (abnormal growth, whether benign or malignant). Higher levels of zonulin increases the risk of developing Crohn's disease, type 1 diabetes, glucose intolerance, juvenile nonalcoholic fatty liver disease, and obesity in adults. Data continues to accumulate for all inflammatory bowel disease (IBD) conditions, plus rheumatoid arthritis, multiple sclerosis, and asthma.

The good news is dietary changes and supplementation of nutrients that support the restoration of the gastrointestinal mucosal have been shown to lower fecal and serum zonulin levels. Examples include probiotics, L-glutamine, vitamin C, aloe vera, curcumin, gamma-linoleic acid, omega-3 fatty acids (EPA, DHA), zinc, beta-carotene, pantothenic acid, and quercetin.

Nutritional Recommendations for Leaky Gut

Leaky gut syndrome is well-known for producing a long list of mineral deficiencies, such as magnesium, zinc, calcium, boron, silicon, and manganese. L-Glutamine can assist in the

protection of the mucous lining of the intestines and stomach. Other lost nutrients to be considered for supplementation are coenzyme Q10, B complex vitamins (especially folic acid and vitamin B12), and selenium.

The occurrence of malabsorption is initiated by inflammation and results when the transporter of proteins in the gastrointestinal tract has been damaged and is no longer able to carry minerals from the intestine to the bloodstream. An example is the mineral magnesium; even with higher levels of supplementation, when the carrier protein for this mineral is damaged, an intake of higher dosages will not compensate. Take care to replenish magnesium, since metabolic systems require magnesium to function. Similarly, a zinc deficiency—a necessary component for the immune system—produces its own list of problems, such as hair loss or baldness, and may also lead to high blood pressure and high cholesterol.

Dampening inflammation response in the body initially requires adequate omega 3 fatty acids. These fats are a necessary element to ensure a beneficial outcome. To further assist the gut in reducing the damaging effects of inflammation, additional antioxidant supplements are beneficial and will prevent tissue damage brought on by inflammation. To naturally increase antioxidant levels, include foods that contain high amounts of carotenoids, such as carrots, squash, yams, and berries. Exotic berries, such as acai, aronia, and wolfberry have extraordinary amounts of antioxidants, as do certain plant enzymes such as those found in green kamut, barley green, and whole leaf aloe vera juice with high MPS (mucopolysaccharides) content. Bioflavonoids, available in many foods including citrus fruits, onions, garlic, peppers, buckwheat, and black currants, are also useful. Other potent enhancements are spirulina, chlorella, bee pollen, and royal jelly, which all aid in the repair of leaky gut syndrome. A few more examples of staple supplements would be vitamin C and E and amino acids like cysteine, N-acetyl-cysteine, methionine, and reduced L--Glutathione, all of which are important antioxidants.

Another area of assistance to improve nutrient absorption is with substances equipped to aid the digestive process. Such items include the pancreatic enzyme, proteolytic enzymes like proteinase or serrapeptase, glutamic acid, hydrochloride, betaine hydrochloride, pepsin, apple cider vinegar, lemon juice, and stomach bitters.

When Can I Re-Introduce Gluten?

As always, when many areas of your body have become low-functioning, the list of immune triggers will escalate, producing autoimmune responses to other foods, food additives, and environmental chemicals. This is also more pronounced for patients with Crohn's, colitis, and other similar disorders.

That said, if you start to feel better or have a blood test performed showing your antibodies have returned to normal, I would still recommend you wait six months to one year from when you last ate gluten. When reintroducing gluten back into your diet, start slowly to help avoid triggering an autoimmune response. For example, try eating sourdough bread, which is lower in gluten than other bread choices due to its leavening process. Begin by eating one half slice of sourdough bread every third day for two weeks. A person with a full-blown gut disease might experience an immediate reaction such as diarrhea, gas, bloating, and pain; this either means they need more time to recover or that they are permanently intolerant.

If you do not experience any adverse symptoms and continue to feel good but want to be sure, have your thyroid antibodies checked. Many of my patients who were not originally celiac have

been able to reintroduce gluten back into their diet. On the off chance you may be celiac but have yet to be diagnosed, the overview outlined below may help with your decision to determine whether you should be tested for the disease. Because of the connection between thyroid disease and gluten, it is especially important to be sure you are not at risk for celiac disease.

Celiac Disease and Hashimoto's Thyroiditis

Celiac is an autoimmune disease that breaks down an individual's intestinal barrier. Celiac disease is triggered by consumption of the plant protein gluten, which is found in grains like wheat, barley, and rye. Currently, research is shedding light on the sequence of events which produce the T-cell antigens to specific polypeptides or hydrolysates of gluten. Further studies and education will hopefully pinpoint the amino acid sequence in the gluten protein of grasses.

Since celiac's discovery in 1908, many discoveries have been made helping to explain why so many reactions occur that are related to biological factors. Such findings include many types of mental disorders and physical disorders connected to yeast infections. Other areas of interest were studies on neurological disorders associated with adult celiac disease and psychoses with digestive origins.

Many of these studies involved measuring the level of toxins within the intestinal tract, which were affecting normal brain function and the overgrowth of intestinal microbes. In 1982, the New England Journal of Medicine reported that D-lactic acid, a waste product from bacterial fermentation, was invading brain tissue and harming brain cells. Chronic diarrhea and epileptic seizure episodes were also occurring in babies. Once a child is weaned and put on formula or solid food, problems such as these began taking place. Favorable results were reported when certain grains and dairy products were removed from the diet. The protein gluten found in many grains and lactose in dairy are frequently the offending substances, promoting imbalances throughout the body of sensitive individuals. An estimated eighty-three percent of Americans who have celiac disease are either misdiagnosed or undiagnosed. With the many debilitating risks facing celiac patients, adhering to a gluten-free diet is critical for preventing further complications.^{29, 30}

Because gluten can trigger an autoimmune attack of the thyroid, it increases the likelihood of developing Hashimoto's Thyroiditis for those who are gluten-sensitive, including celiac patients. To help reduce levels of thyroid antibodies and inflammation of the digestive tract, adopt a gluten-free diet.^{31, 32}

How to Heal Gastrointestinal Problems Associated with Gluten

For help in healing all aspects of gluten and other triggers associated with Hashimoto's Thyroiditis, pick up my book **Reverse Gut Diseases Naturally**, which contains step-by-step instructions to reverse your gut disorder, and Hashimoto's disease in the process. It contains a complete dietary program for gut wellness, as well as natural substitutes for popular over-the-counter and prescription medications and detailed case histories demonstrating the effectiveness of natural methods. You will learn how to achieve safe and sustainable results that will let you reclaim your life and your independence.

Hyperthyroidism

THE THYROID GLAND produces the hormones that control the way every cell in the body uses energy, otherwise known as our metabolism. An overactive thyroid, one where the thyroid gland produces too much hormone, is known as **hyperthyroidism**. Symptoms typically include rapid heartbeat, weight loss, nervousness, not enough breath, increased appetite, insomnia, irritability, absent menstruation, moist skin, and damp or increased perspiration. (Note that overactive thyroid conditions and overactive adrenals often occur at the same time, which may lead to interlinked or additional symptoms.)

Depending on the type of thyroiditis, it is not uncommon for the thyroid to become enlarged, with or without pain or tenderness. Hypothyroidism (an underactive thyroid) is far more common than an overactive thyroid condition, but due to the rise in gut permeability and the long-term use of certain medications, the rate of hyperthyroidism has been steadily rising.

Causes of Hyperthyroidism

Many conditions can cause hyperthyroidism, including:

- Graves' disease (most common)
- Inflammation/thyroiditis (common)
- Viral infections (common)
- Certain medication (common)
- Following pregnancy (common)
- Taking too much thyroid hormone (common)
- Growth (noncancerous) of the thyroid or pituitary gland (rare)
- Some tumors of the testes or ovaries (rare)
- Medical imaging tests with contrast dye that has iodine (rare)

An overactive thyroid may be initiated by problems with the immune system or food intolerances, bouts of high fever, and Graves' disease (an autoimmune disorder). These conditions (as well as others) can cause hyperthyroidism. Cultures like the Japanese, who consume higher amounts of iodine more often than others, are at higher risk for contracting Hashimoto's disease (discussed in Chapter 5). Medications such as interferon-alpha, interleudin-2, lithium, and amiodarone can also bring about thyroiditis; these are strongly associated with hyperthyroidism as a result of their side effects.

Since conventional testing typically measures T4 and thyroid stimulating hormone (TSH) and may not include T3 levels, it's important to ensure this area of testing has been properly considered. Another area of testing to consider is determining whether foods or other substances are triggering an autoimmune response.

Symptoms of Hyperthyroidism

Common symptoms of hyperthyroidism to be on the lookout for include^{1, 2, 3, 4, 5, 6, 7}:

- Problems with concentration
- Fatigue
- Goiter/thyroid nodules
- Protruding eyes (exophthalmos)
- Skin blushing (flushing)
- Hair loss
- Heat intolerance/increased sweating
- Increased appetite
- Irregular menstruation in women
- Nervousness
- Pounding of heart (palpitations)
- Restlessness/sleep problems
- Weight loss
- Frequent bowel movements or diarrhea
- Itchy or irritated eyes/itchy skin
- Moist/clammy skin

The Holistic Approach to Hyperthyroidism

Understanding the properties of different plants, foods, and nutrients can be instrumental in the treatment of an overactive thyroid. Equally helpful are the natural and safe ways they provide to block antibodies that attack thyroid tissue.

Foods Can Help Reduce Hormone Secretion

Foods that can decrease the amount of thyroid hormone your thyroid gland produces are called **goitrogens**. Cruciferous foods like broccoli are part of the goitrogen family.

Foods that inhibit hyperthyroidism include cabbage, Brussels sprouts, bok choy, broccoli, cauliflower, kale, spinach, turnips, soy beans, and mustard greens. (Even though soy is a thyroid hormone inhibitor, it is also associated with inflammation, which may reduce absorption of thyroid medication.)

Avoid all foods and substances that lower the immune system and promote stimulation such as sugar, caffeine, alcohol, wheat, refined foods/carbohydrates, and dairy (with exceptions made for health-promoting probiotic cultures, both fresh and supplemental).

Supplements

Essential fatty acids (EFAs)—in particular omega-3s, for their inflammation lowering capabilities—are very beneficial for lowering the hormone secretion of an overactive thyroid. The body's inflammation response requires an omega-3 fatty acid, as does the immune response. Only fish oil possesses 100 percent omega-3 fatty acids; other good sources can be found in cold pressed oils like flaxseed oil, chia oil, evening primrose oil, and borage oil.

Vitamins and minerals are necessary for normal thyroid hormone production. Be sure to include vitamin C, A, E, B complex, riboflavin (B2), niacin (B3), and pyridoxine (B6), and the minerals zinc and selenium.

Bromelain is an enzyme found in pineapple and is used as a digestive aid and for its inflammation-reducing qualities. For this reason, it is often combined with turmeric, which enhances its effects.

L-carnitine is an amino acid that has demonstrated an ability to inhibit thyroid hormones from getting into the body's cells. Sometimes, when taking thyroid medication for the treatment of a goiter, the treatment can result in too much hormone production, causing hyperthyroidism. One such study verified the benefits of L-carnitine's ability to counteract symptoms associated with mild hyperthyroidism, such as heart palpitations and nervousness.⁸

Patients with hyperthyroidism should *avoid* **bladderwrack** (*Fucus vesiculosus*) and **ashwagandha** (*Withania somnifera*).

Hyperthyroidism and Gluten

When it comes to hyperthyroidism and autoimmune responses, it's best to consider treatment "through the back door." The key is to determine exactly what is triggering the immune response while supporting the immune system and picking up as many deficiencies as possible. To calm down the autoimmune response, include higher amounts of magnesium in your diet and remove gluten from your diet. Gluten happens to have an almost identical matrix to thyroid tissue, which causes the immune system to attack gluten as well as the thyroid gland. In such cases, extracts from herbs such as bugleweed have proven to be extremely valuable for the treatment of hyperthyroidism.

Herbal Medicine for Thyroid Health

While many practitioners think in terms of nutritional support when considering thyroid health, there are wonderful botanicals that can assist in the rebalancing process. Herbal preparations will calm an overactive thyroid and boost an underactive one. An area most do not think about is the removal of toxins like mercury from the thyroid gland. Natural medicine is safe and can even make synthetic hormone medications work better.²

A note: the remedies and symptoms for hyperthyroidism are not dissimilar to those of Graves' disease. Both conditions can express themselves with rapid weight loss, a rapid heart rate, excessive perspiration, nervousness, agitation, and insomnia. Bulging eyes can be noted in both conditions, but more classically with Graves' disease. Graves' is considered an autoimmune disorder; therefore, in treatment, the underlying cause of autoimmunity should be addressed.

Bugleweed

Bugleweed is a member of the mint family (*Lamiaceae*), traditionally used worldwide to treat hyperthyroidism and Graves' disease. Its usefulness extends to include properties that block thyroid-stimulating hormones (TSH) while decreasing peripheral T4 deiodinization and, in some cases, can inhibit iodine metabolism.

For remedying hyperthyroidism and Graves' disease, the herb bugleweed (*Lycopus americanus*) is my preferred choice. Bugleweed also affects the antibodies that block thyroid hormone receptors and even inhibits the conversion of T4 into T3.¹⁰

Herbal tinctures of bugleweed are more potent and convenient to take as compared to other preparations. Look for bugleweed liquid tinctures with a dosage concentration of 1:5. These products may be weaker or stronger; for a guide, the lower the second number is in the ratio, the stronger the potency. For example: 1:2 would be stronger than 1:5, while 1:10 would be weaker than 1:5. Adjust accordingly, but do not stress over a slight difference in dosage; herbal dosages, unlike drugs, are very forgiving.¹¹

Preparation: Add two droppers of tincture to one ounce of water and hold in your mouth for thirty seconds before swallowing. Take on an empty stomach 10–20 minutes before a meal. Maintain dosage for three months, or until your thyroid has normalized. Do not continue to take bugleweed over the long-term.

For herbal enthusiasts, bugleweed couples great with supportive herbs such as Astragalus, North American ginseng, or Siberian ginseng (keep tincture potencies the same for less complicated formulas).

Motherwort

Motherwort (*Leonurus cardiaca*) works similarly to bugleweed, and both may be found in natural medicine products to treat hyperthyroidism and Graves' disease. Like bugleweed, Motherwort also inhibits the conversion of T4 into T3 and helps to regulate a rapid heartbeat (tachycardia), a common symptom of an overactive thyroid.¹²

Lemon Balm

Lemon balm (*Melissa officinalis*) works wonderfully with bugleweed and motherwort. It offers carminative qualities and a pleasant taste. Besides the overactivity of the thyroid gland, lemon balm is extremely useful for lowering adrenaline output by the adrenal glands, essentially calming them down. Lemon balm is excellent for nervous body tension and agitation associated with hyperthyroidism. For children, lemon balm is safe and effective for hyper conditions.

Hawthorn

Hawthorn is an excellent herb to use for heart health and for “hypothalamic-pituitary-thyroid-axis” support. Problems can occur even when the thyroid gland is healthy, but when this axis system is not working properly, either the pituitary or hypothalamus can fail to secrete enough hormones. In this situation, hawthorn is very helpful.

Turmeric

Turmeric, the yellow pigment known as the main ingredient in Asian curry cuisine, is currently being heavily researched to ascertain the positive properties of its prime component, curcumin.

Curcumin has been found to possess profound anti-inflammatory properties and is well-established as an effective adversary against inflammation problems throughout the whole body, including the thyroid, intestinal tract, and autoimmune disorders. Supportive studies show how curcumin protects the intestinal barrier against bacterial invasion by utilizing key inflammation pathways, all while helping to heal a leaky gut and reduce heavy metal liver toxicity.^{13, 14, 15}

However, there is an issue involving curcumin's poor rate of absorption and the rate at which the body purges it from its system. The product Theracurmin was developed to address these issues, and when tested against all other commercial brands, ranked far superior in terms of its absorption rate. The reason for its success is due to its particle size (100 times smaller than the average

curcumin powder particle), which radically increases its solubility in water, resulting in an unequalled absorption rate. The benefits of Theracurmin range from reduced tissue damage caused by inflammation and increased mobility to improved heart and liver function.^{16, 17, 18}

Herbs for Other Specific Thyroid Imbalances

Blue Flag

Blue Flag (*Iris versicolor* or iris root) is relatively unknown in the realm of thyroid supporting plants; however, its use in correcting thyroid imbalances dates back as far as 1895. The focus of Blue Flag's use in thyroid correction is its ability to remove toxins (such as mercury and other environmental chemicals) from the thyroid. As referenced in Chapter 4, mercury is an autoimmune trigger and disrupts thyroid function, causing Hashimoto's thyroiditis.

Blue Flag is a valuable remedy for several types of conditions where purging of substances from the body, either organic or inorganic, is called for. It is most notably recommended for cases of thyroid enlargement, goiter, and exophthalmia. It helps remedy and prevent inflammation of the thyroid by removing toxins that trigger an immune response. Blue Flag seems to have a particular affinity for the glandular system, stimulating it to release through their respective channels.^{19, 20}

Ashwagandha

Immensely popular, Ashwagandha, an Ayurvedic herb also known as Indian Ginseng, is well known for its adrenal restorative qualities. As discussed, when the adrenals are functioning less than optimally, there will be a negative effect on the thyroid. Because of its adaptogenic properties, Ashwagandha is very helpful for those with Hashimoto's disease in addition to enhancing the conversion of T4 (inactive form) to T3 (active form).

Anyone suffering with an overactive or stressed thyroid gland may have trouble sleeping. Ashwagandha doesn't appear to have any type of stimulating effect and may actually help with sleep issues in some people.²¹

Thyroid medications (such as synthroid and levothyroxine), which are only comprised of T4, can be ineffective in patients who have difficulty converting T4 into T3. The good news is Ashwagandha stimulates this conversion, meaning it is a natural remedy well-suited to helping a drug work better.²²

Eleuthero

Once called Siberian Ginseng, Eleuthero (*eleutherococcus*) is another adaptogen. Where Ashwagandha is earmarked for the adrenals, Eleuthero is highly supportive of the thyroid gland. When the thyroid is functioning at low levels, Eleuthero is great at improving chronic fatigue and depression. Eleuthero has a positive influence on the adrenal glands when stressors are too high, raising DHEA levels while lowering cortisol output. This herb was extensively researched by the Russians while looking for natural ways to boost their Olympic athletes' performance and stamina. Consider Eleuthero if your moods, energy, and metabolism need boosting.

Eleuthero will benefit hypothyroidism, Hashimoto's disease, and hyperthyroidism.

Bladderwrack

When iodine is needed, many professionals recommend bladderwrack (in fact, the homeopathic Fucus is sourced from bladderwrack; for more information about this remedy, see page xx). Ordinarily, one would shy away from iodine when conditions of thyroiditis and overactive thyroid

are present. Luckily, it is still safe to take for Hashimoto's Thyroiditis because it isn't a high iodine source. Like other sea plants, bladderwrack supports the thyroid gland and body as a whole through its high trace mineral content.

Pokeweed

Pokeweed tincture is my favorite remedy for lymphatic congestion. Pokeweed is also earmarked for other swollen glandular tissue and inflammation. As a homeopathic remedy, it is called *Phytolacca Decandra* (please refer to page xx for much more on its various applications). Pokeweed reduces thyroid swelling and goiter while increasing lymphatic circulation. Because of its beneficial action on circulation in general, it is also useful for overactive thyroid conditions (hyperthyroidism).

Guggul

Guggul myrrh (*Commiphora mukul*) dates back to biblical times and possesses many anti-inflammatory, antiviral, and immune-boosting properties. In studies, guggul has shown to enhance the conversion of T4 into T3 as well as support iodine absorption *and* important thyroid enzymes.^{23, 24}

Other Conditions Affecting Thyroid Health

Goiters

In the case of Hashimoto's disease, the immune cells malfunction and attack healthy thyroid tissue, resulting in inflammation which causes the thyroid gland to swell and develop what is known as a goiter.

Another cause of goiters relates to the thyroid gland's nutritional needs. When the necessary nutritional elements are not adequately supplied, the thyroid gland cannot function normally. Mainly through a lack of iodine (required for several aspects of thyroid health), the thyroid gland begins to swell, trying desperately to do the job it is meant for.

A goiter may be visible, or may be discovered through a physical examination at the doctor's office. If left untreated, it will continue to enlarge to the point where it interferes with swallowing and breathing.

Menopause

My treatment of patients with menopausal symptoms always involves the thyroid gland. Hot flashes are the main area that benefits from boosting thyroid activity, along with adrenal health. Since thyroid function involves mood enhancing neurotransmitters and hormones, supporting the thyroid gland with the essential nutrients required for optimum function automatically alleviates depression, mood swings, night sweats, and flushes, increases energy levels, reduces irritability, and improves sleep, memory, and concentration.

Recommendations for hot flashes are the same as for those properly supporting their thyroid, in addition to light support for the body as a whole. Depending on health circumstances, the adrenal glands may require attention to address various menopausal symptoms.

**Exercise caution when taking prescription estrogen such as HRT or similar products. Studies have proven it to be risky, increasing the threat of breast cancer, ovarian and uterine cancer, and heart disease.*

Oral Contraceptives

The chemical estrogen blocks the thyroid hormone. How this actually happens is estrogen increases the protein that binds to our thyroid hormone. This leaves thyroid hormone bound to protein which remains inactive until it becomes unbound. As a result, women who are given birth control (with its high levels of estrogen) can essentially deactivate their thyroid's functions, especially when taken in an injection form that goes into body and lasts for three months. At least when birth control is taken in a daily pill form, the patient has some control over the impact the medication will have upon their body. If you are taking oral contraceptives and experiencing thyroid-related symptoms, cease taking it until the thyroid gland has been properly supported.

Pregnancy

Thyroid disorders are one of the most prevalent complications among pregnant women. An endocrine problem such as this can impact the health and well-being of the fetus, as well as promote infertility and miscarriages. Monitor the thyroid gland closely with proper testing and support with proper nutrition.²⁵

Stress

Stress is a natural part of everyday life. However, stress also affects our thyroid and endocrine function in a number of ways. When the demands placed upon us exceed our ability to cope, we find ourselves on the path to anxiety and depression. When these circumstances become chronic and on-going, the body begins to buckle under the constant bombardment of high levels of cortisol and corticosterone.

Our body's master gland (the pituitary) stimulates and controls the hormone production of the adrenal cortex, which secretes adrenocorticotrophic hormone (ACTH). This hormone secretion is critical to the production of our main stress hormone, cortisol, in response to stress. In today's world, stress is a constant companion, and the pituitary gland can become overworked. In such an incidence, the pituitary gland may stimulate the synthesis of too much ACTH, which in turn will redirect away from manufacturing other necessary balancing hormones such as thyroid stimulating hormone (TSH), follicle stimulating hormone (FSH), and luteinizing hormone (LH).

Excess cortisol will also deplete levels of the amino acid L-tyrosine, which happens to be the same one required for synthesis of thyroxine. (Refer to Chapter 7 for all the important reasons why we must strive to maintain sufficient levels of L-tyrosine).

Chronic stress inhibits the conversion of T₄ to T₃ as well, by inhibiting the secretion of TSH. One of the ways stress harms our bodies is by depleting necessary nutrients; in this particular case, the nutrients required for the production of T₄, namely chromium and zinc. When we have inhibiting factors of hormones associated with thyroid function, there is another net effect: your metabolism will be significantly reduced, as will your immune system. And in other cases, auto-immune issues can show up, such as inflammation of the thyroid (Hashimoto's disease).

Regardless of the level of stress a person suffers with, assessing the needs of the thyroid gland is always part of my initial protocol. When our bodies cannot sustain a healthy balance, stress goes unchecked and the entire body becomes affected. A constant state of readiness leads to exhaustion and chronic fatigue.

Sleep Deprivation

An all-too-common symptom reported by patients is disrupted or insufficient sleep. J.M. Krueger, F. Obal, D. Parker, and L. Rossman are among physicians who have dedicated themselves to researching the problems of sleep and hormone inhibition, among other sleep deprivation

symptoms. Krueger and Obal (2001) shared valuable data: “When sleep deprivation is maintained for weeks, the plasma concentrations of T4 and particularly T3 decline but TSH remains normal.” Make a point to discuss your sleep patterns when referencing symptoms of thyroid dysfunction.^{26, 27}

Thyroid Cancer

We have covered many problems involving the thyroid gland, some of which are majorly disruptive and life-altering. Perhaps the most disruptive and life-altering is thyroid cancer.

The factors involved in developing a tumor are very complex. We do know that inflammation is the driving force in a cancer’s development, all aspects of its growth, and its spread throughout the body. The link between cancer and inflammation was first discovered by Rhudolf Virchow, a German pathologist, who was also the first person to discover immune cells existing in cancer tumors. He then made the correlation between inflammation and tumors, which has remained a focus in present day research.²⁸

Cancer Development

A tumor requires the same elements for survival as any other main body part (such as an organ): it needs a support system of blood vessels to supply itself with nutrition, oxygen, and waste removal. Tumors use a process called **angiogenesis**, which describes how a tumor draws its blood supply from nearby blood vessels. The angiogenesis process is one of great interest to researchers all over the world, as it is the primary means for how cancer manifests and spreads in the body.

At the outset, a minuscule tumor can gather enough nutrition and oxygen from its surrounding environment. But things quickly become desperate when the tumor’s ecosystem can no longer support its growth. At this point, the tumor is forced to go further afield for what it needs, which draws more attention from the immune system. The tumor, in its struggle to survive, sends out malfunctioning signals that attract immune cells (macrophages and granulocytes), which penetrate the tumor. Upon entering the tumor, these immune cells begin secreting cytokines, which induces angiogenesis (growth of new blood vessels). Once oxygen and nutrition are supplied to the tumor, it continues to establish itself through various cytokines. Certain cytokines prepare the area where the tumor will rest (called the stroma) by initiating cellular growth to cushion and support its mass. Meanwhile, free radicals (such as inflammatory cells) are sprayed onto the tumor, which causes further DNA impairment. Research has suggested that inflammation could also be what promotes spreading of the tumor.

Picturing this series of events, it’s not hard to imagine how immature tumors use the inflammation process to accelerate into a full-blown disease like cancer. For some time now, drug companies have been trying to find a way in which to manipulate inflammation in an attempt to try and prevent the onset and spread of cancer. It has even been suggested that taking aspirin may be a solution, since it dampens inflammation. But aspirin, just like all the other medications, comes with its own list of shortcomings.

Problems such as cancer develop over long periods of time. Regardless of inflammation’s role in the process, it first required an environment to allow for rogue cells to mature and proliferate. Evaluate your diet and lifestyle to determine what areas may need to be adjusted and propped up.^{29, 30, 31}

Case History: Full Reversal of Thyroid Cancer

It was early in my career when I first treated a male patient with thyroid cancer. This was an interesting case for me, in that the patient's wife did the main therapy protocol along with her husband for support. The main part of the treatment plan involved a vegetable juice "fast" of forty-two days. Numerous cases documented by patient reports and continued by other practitioners has demonstrated cancer dying off during the forty-two-day fast.

In this case, the patient was put on the Breuss juice formula, recommended teas, and thyroid support. This program was one which I had studied during my academic years, so named after its originator, Rudolf Breuss, an Austrian naturopath. This program is the strictest I have used, involving a very limited daily amount of juice with absolutely *no* sediment. If you consider using the R. Breuss cancer protocols, be sure to investigate the program thoroughly, as there are different nuances for certain cancers and related symptoms.

The patient is only permitted to drink 2 cups (500 ml) per day. Dr. Breuss considers the less juice drank per day, the better. The recipe is included below; you will notice black radish and celeriac (celery root) as part of the ingredients list, and while many patients are unfamiliar with these items, they are usually available in large or upscale grocery stores. (Black radish is oval, hairy, and blackish-white inside; celeriac is quite large, beige in color, and very knotty-looking).

Dr. Breuss' Juice Recipe

9.6 ounces (300g) beet root
3.2 ounces (100g) carrots
3.2 ounces (100g) celeriac
1.06 ounces (30g) black radish

Drink the juice slowly and do not swallow immediately; allow it to remain in your mouth for a few seconds or longer (consumed throughout the day).

I do advise the patient to start drinking this formula for several days to one week prior to starting this juice fast. It is always a good idea to ease into a fast, as well as ease out of one. In other words, do not immediately go back to eating heavy foods (bread, potato, flesh protein, junk food, chemical- and sugar-laden drinks). At this program's inception, research had not advanced to the level it has reached today, showing us that one of cancer's favorite foods is sugar. Back in the day, Breuss felt it was mainly solid food that fueled cancer in the diet; therefore, he was adamant about only consuming clear liquids.³²

Teas for Cancer Treatment

There are many wonderful plants and substances found in nature with the ability to rid the body of cancer cells. In this particular case study, we mostly stuck to the program outlined by Breuss.

Sage Tea

2 teaspoons ground sage
2 cups (500 ml) water
1 teaspoon St. John's Wort
1 teaspoon peppermint

1 teaspoon lemon balm (**Melissa officinalis**)

Drink ½ cup of sage tea at one time 4 times per day (room temperature).

Though normally an infusion process would be indicated for aerial plant parts, Breuss preferred the sage to be boiled for three minutes to remove the essential oils for drinking. Once the boiling stage has been completed, add the following herbs and further steep the blend for another ten minutes and allow to cool. Add 1 teaspoon each: St. John's Wort, peppermint, and lemon balm (*Melissa officinalis*). Sage is thought by many to be one of the most important teas to be drunk, and is extremely health promoting.

Cranesbill Tea

¼ teaspoon Cranesbill

½ cup boiling water

Steep for ten minutes. Cool tea to room temperature and sip slowly once per day.

The patient also consumed iodine, which can be taken through both dried or liquid forms. Take as directed (usually 2–3 times a day).

Weight Loss on Juice Fast

It has been my experience that weight loss is different from person to person. My male patient lost sixty pounds in forty-two days, while his wife lost twenty-three pounds. A main factor in weight loss is how much extra adipose tissue a person is carrying. Again, my experience is we only lose body fat while on a health-promoting fast.

In order to reverse and prevent the onset of cancer, dietary factors must be considered. You must determine what will best support a healthy immune system and liver function. Equally as important is the level of carcinogens being taken into the body. As science has shown us, the list extends much further than merely removing solid food from the diet for a protracted period of time; cancer is linked to toxins in the environment, lifestyle choices, nutrient deficiencies, bad habits, carcinogenic substances in the food we eat and drink, and dead food.

We should all take a page from Rudolf Breuss's book and incorporate fresh raw juices into our weekly routine to ward off and lessen the known contributors of cancer. If I do not succumb to the ills of cancer, I will give full credit to my routine of regularly consuming vegetable juice for more than thirty-five years. Consuming this liquid since my twenties was the main step that ultimately influenced me in my current career and lifestyle path.

Michelle Honda's Formula

3–4 pounds carrots

1 medium beet

1 apple

Dandelion, parsley, or other comparable green

Do not peel the vegetables. Pare and trim any bad spots and/or tops and ends that are damaged. Do not mix fruit with vegetables; however, you are allowed an apple in a vegetable juice formula to increase the mixture's sweetness. This recipe makes enough for two adults. For one person, cut recipe in half and consume two cups.

Buy once a week (or as needed) and divide. One bunch of dandelion typically lasts five juice formulas. On occasion, add black radish and/or a portion of celery root. If these vegetables seem large, divide and reserve for another day, or juice again within the same day.

Drink 1 pint at a time within an hour or less. Makes 4 cups.

L-Tyrosine and Iodine

L-Tyrosine: The Rising Star

THE AMINO ACID L-Tyrosine continues to be the subject of robust research studies, especially in the area of pharmaceuticals. L-Tyrosine (among other amino acids) have been investigated for use as medications for ADHD, depression, and reducing blood pressure, and for improving individual coping abilities during stressful situations. There is much investigative work being presented in this area, including work partnering tyrosine with medications to increase the drug's effectiveness.

Classified as a nonessential amino acid, tyrosine is derived from the amino acid phenylalanine. It is essential for the production of several neurotransmitters (brain chemicals), including dopamine, epinephrine, and norepinephrine. Functionally, neurotransmitters assist nerve cells with their communication, as well as aid the organs/glands responsible for making and regulating hormones (the adrenal, thyroid, and pituitary glands). Tyrosine is also needed for the production of melanin (the pigment responsible for skin/hair color).

Before we get into the supportive research of the benefits and application of tyrosine, take a quick look at a light overview of this influential amino acid.

L-Tyrosine: What Does It Regulate and Affect?

- This amino acid is the main component in producing energy. For that reason, chronic fatigue is greatly helped by higher levels of tyrosine. Tyrosine makes all the difference in brain exhaustion and fatigue.
- L-Tyrosine (combined with Vitamin B6 and Vitamin C) is required to convert and sustain proper levels of the uplifting and energy-producing hormone dopamine, which has an enormous impact on metabolic energy.
- L-Tyrosine is necessary for the production of epinephrine and noradrenaline, two key adrenal hormones.
- L-Tyrosine is required for cortisol production.
- L-Tyrosine supports hormone production of T3 and T4.
- L-Tyrosine is instrumental in the availability of a constant energy output to the body by way of promoting balanced metabolic rates.
- The amino acid tyrosine is needed for thyroxine synthesis.

Tyrosine and Phenylalanine

Serious conditions can also result when tyrosine isn't in balance with other aspects of the body, such as the amino acid phenylalanine, of which tyrosine is a byproduct. The condition phenylketonuria (PKU) is a serious condition that occurs when the body cannot properly utilize phenylalanine. People with PKU will find themselves deficient in tyrosine because it is made from

phenylalanine. This serious problem can lead to mental disability and brain damage. People with PKU *must* take tyrosine as a supplement while also *avoiding* intake of excess phenylalanine.¹

L-Tyrosine is a Major Metabolic Component

Tyrosine is part of the hormones T3 and T4's matrix. This means it is a precursor for thyroid hormone synthesis; therefore, the presence of tyrosine increases the availability of these hormones. It is also a precursor for stimulating neurotransmitters and adrenal hormone production. But it is also the main component in our body for making energy.² Chronic depression, exhaustion, and poor metabolism are all potential symptoms of low blood levels of L-tyrosine. Many people today over the age of twenty-four are struggling with lower levels of tyrosine as a result of poor quality protein choices and protein absorption problems due to a compromised digestive system.

The thyroid gland is the crucial component and regulator for efficient energy production throughout the whole day. The thyroid gland actually only makes one teaspoon of hormones each year; and yet, if this hormone is not available in sufficient quantities, it will have the greatest impact on your energy levels.

As previously indicated, the reason for this is because our energy levels are determined by the rate at which our bodies metabolize the food we eat into energy, a process which is established and controlled by the thyroid gland. Thyroid hormone reaches every cell in our body, and is therefore instrumental in all aspects of our body's functioning and maintenance.

When the thyroid gland becomes sluggish, so, too, does our metabolism, which results in energy dysfunction on a cellular level. By evaluating the following symptoms and what tyrosine regulates in the body, we may help shed some light as to why you and your body have been struggling:

- Depression and overall moods being lowered
- Decreased cognitive function
- Poor circulation
- Chronic fatigue
- Poor digestion
- Constipation

L-Tyrosine as Antidepressant

Tyrosine is the precursor of the neurotransmitters dopamine (DA) and norepinephrine (NE), also known as catecholamines (CA), which play a part in the brain's response to acute stress. Depression is linked to specific neurotransmitters, of which more than one is affected by depression. Knowing that tyrosine produces the mood enhancing chemical dopamine and that people who suffer with depression often have low levels of tyrosine, researchers are looking into tyrosine as a treatment option for depression. Overall, many studies suggest using L-Tyrosine as an antidepressant.^{3, 4, 5}

In patient treatment for all manner of depression, as well as ADHD and mental disorders like bipolar disorder and schizophrenia, L-Tyrosine is a main feature of my treatment plans. Most patients see noticeable improvement in one week's time.⁶

Foods High in Tyrosine Help Raise Dopamine

When looking to raise dopamine levels, look for the following foods, which are high in the amino acid tyrosine. Starting with the highest tyrosine food category (1-10), each list also starts with the highest level of tyrosine of each food.

Cheese

Parmesan cheese
Gruyere
Swiss
Edam
Low fat mozzarella
Blue cheese
Monterey
Hard goat cheese
Cottage cheese

Soy Foods

Roasted soybeans
Dried, frozen tofu
Soy flour
Tempeh
Fried tofu
Natto
Sprouted soybeans

Lean Beef/Lamb

Lean beef
Grilled steak
Beef sirloin
Lamb shoulder
Stewing lamb

Lean Pork

Pork chops
Bacon
Ham
Pork tenderloin
Shoulder

Fish/Seafood (Cooked)

Salmon
Tuna
Snapper
Mackerel
Shrimp
Halibut
Haddock
Cod
Crab

Chicken/Turkey

Chicken

Turkey

Seeds/Nuts

Pumpkin seeds

Peanuts

Sesame seeds

Sunflower

Chia

Pine nuts

Macadamia

Flax seeds

Pistachio

Almonds

Eggs/Dairy

Eggs

Fat-free natural yogurt

Natural yogurt

Skimmed milk

Buttermilk

Whole milk

Sour cream

Butter

Beans/Lentils (Cooked)

White beans

Adzuki

Lentils

Split peas

Roman

Kidney

Black beans

Broad (fava)

Pinto

Chickpeas

Whole Grains (Cooked)

Wild rice

Raw oats

Teff

Kamut

Brown rice

Millet

Bulgur

Quinoa

Couscous

Barley (pearl)

L-Tyrosine Helps Stress

Stress is a natural part of everyday life, but when the demands placed upon us exceed our ability to cope, we need to provide our bodies with what our biochemical nature requires to help restore harmony and balance. Anxiety and depression are reaching epidemic proportions, and when these conditions become chronic, the body cannot withstand the constant bombardment of high levels of cortisol and corticosterone.

The adrenal glands are directly implicated in the effects of stressors on the body, whether they are the result of emotional stress, injury, infection, diet, or fatigue. It is the adrenal glands that manage the body's stress response, resulting in the physiological symptoms that promote heart distress, such as increased heart rate and breathing, blood sugar regulation (which affects triglyceride levels), and many more.

When looking to properly manage your adrenal glands, tyrosine levels must be considered. Tyrosine is involved in the production of our stress neurotransmitters epinephrine and norepinephrine, secreted by the adrenal glands. Researchers have come to realize that, while under stress, our bodies cannot convert enough tyrosine from the amino acid phenylalanine.

Tyrosine's benefits extend to those experiencing acute stress, as well. Taking tyrosine prior to physical and environmental stressors reduces adverse behavioral and execution incidences such as memory problems and physiological stress due to heat and cold exposure.^{7, 8, 2}

L-Tyrosine Benefits Neural Aging

Neural aging describes the process by which cells in the brain (neural) and peripheral nerves degenerate and weaken over time, resulting in a decline of sensory, motor, and cognitive functions of the brain. L-Tyrosine has sparked interest in the pharmaceutical industry as a means to alleviating neurological decline in the area of dementia and Alzheimer's disease. Being that tyrosine increases levels of catecholamines in the brain, which are typically decreased in dementia patients, the addition of tyrosine can increase levels of catecholamines, shown to be antioxidants to the brain, thereby obtaining neuroprotective properties.¹⁰

Memory

L-Tyrosine was tested to see if it would benefit individuals suffering from sleep deprivation. A series of tests administered tyrosine and other drug substances to healthy young men to evaluate their memory (running and long-term) and cognitive and motor performance. Of the various drugs tested, the nutritional amino acid L-Tyrosine improved performance on several tests, warranting further testing of nutritional strategies.^{11, 12}

Vegetables/Fruits

Many fruits and vegetables contain tyrosine to aid in dopamine production; plus, the benefit of dopamine protective antioxidants against free radical damage.¹³

Other

Spirulina is one of the richest sources of tyrosine commonly taken as a dietary supplement. Ginkgo biloba, ginseng, and turmeric have shown to increase levels of extracellular concentrations of dopamine in the brain, while oregano oil helps to maintain sufficient levels of dopamine. Green tea, through its levels of polyphenols and the mood enhancing properties of L-Theanine, supports dopamine production.

Foods That Lower Dopamine

Certain foods and chemicals simulate dopamine while providing a temporary surge of energy. Sugar, store-bought cookies (such as Oreos), and chemical sweeteners are examples of items that give you a short-term rush followed by a long-term crash. Many people become addicted to artificial sweeteners, sugar, and carbohydrates and end up having a very difficult time breaking the habit. Over time, excessive sugar consumption will deplete dopamine in the body.

Tyrosine Supplementation

For the most part, people who crave sugary, chemical-laden foods and substances are not inclined to offset this behavior with foods that will replace the nutrients missing and being leached from the body.

In such cases, it is helpful to supplement with sufficient quantities of the unbound, free form amino acid L-Tyrosine (in capsule or tablet form). When supporting the thyroid with iodine or tyrosine, it is best to take it three times a day.

Sometimes the vitamins B6, B9 (folate), and copper may be needed for those who have difficulty converting tyrosine into brain chemicals.

Tyrosine and iodine are interrelated in several aspects of thyroid function and hormone production. We will now look at major benefits of iodine and its role in thyroid health.

Iodine

Iodine Deficiency

The thyroid gland requires a small amount of iodine in order for the thyroid gland to produce thyroid hormone each day. Lack of iodine impacts fertility, cognitive ability, energy, metabolism, and circulation.

Like most essential nutrients, the body does not make iodine on its own. As a result, iodine must be consumed through one's diet or taken as a daily supplement. It is imperative that this trace mineral be supplied to the body, since the thyroid gland cannot make thyroid stimulating hormone without it. Yet the repercussions and benefits surrounding the availability of iodine go far beyond the mandatory thyroid hormone production. Remember, the common occurrence of an enlarged thyroid (goiter) is due to a lack of iodine, as the gland swells, attempting to do a job it is ill-equipped for.^{14, 15, 16}

The Wonders of Iodine

One area that is not getting enough attention from traditional medicine, despite being well established in studies, is how hypothyroidism promotes mental retardation in children of mothers who were deficient in dietary iodine. It is for this reason that infertility and miscarriages are closely related to iodine levels in the body, since the thyroid gland cannot make TSH without a daily supply of iodine. The body recognizes that your thyroid gland is low, and you therefore may not have a healthy baby, so it doesn't let you get pregnant. As referenced in Chapter 6, pregnant women have a long-established history of thyroid problems.¹⁷

Iodine Prevents and Treats Breast Cancer

The trace mineral iodine may very well be an unsung hero in the prevention and treatment of breast cancer. Breast cancer is steadily on the rise, with 4,000 new cases weekly. One does not need

to look very far for supportive evidence; simply observe prominent cultures around the world whose incidence of cancer remains much lower compared to statistics in North America.

To begin with, the RDA for iodine, set at 150 mcg per day, is too low for optimal health. Dr. Guy Abraham points this out and suggests 12.5 mg of iodine per day would be a closer equivalent to the Japanese daily iodine intake. The Japanese are showing to have the lowest rates of breast, thyroid, and prostate cancer. Dr. Abraham credits this statistic to their higher daily levels of iodine.¹⁸

Iodine Allergy and Fetus Development

Like other essential elements in the body, it is not possible to be allergic to something like elemental iodine. It would be akin to a person being allergic to the oxygen in their cells or long-chain fatty acids. Without iodine, a fetus cannot develop properly; if there was any chance of it being allergic to iodine, it would not survive.

In the context of developing embryos, a great analogy for thyroid support is the growth stages of the tadpole. Frog metamorphosis is regulated by thyroid hormones, advancing the transformation of the aquatic larvae into an adult tetrapod. It is the hormone thyroxine that stimulates this growth and development in the tadpole, just as thyroxine is essential in all stages of human development (embryo/fetus/infant). A point to note: whether it is amphibian or human biology, when the hormone thyroxine is depressed, the embryo does not develop past the larvae stage. When more thyroxine is added to the environment, the larvae transforms into a small frog at an accelerated rate.¹⁹

How Safe is Iodine Supplementation?

The mineral iodine is water-soluble, which indicates that it cannot be absorbed into tissues and held there like our fat-soluble vitamins, A, D, E, and K2. The FDA recommends 130 mg of iodine for safety purposes, and suggests this amount of iodine can serve as protection against thyroid cancer due to radiation poisoning (even though the RDA is much lower, at 150 mcg). In fact, iodine has shown to be the only trace element that can be safely ingested in amounts up to 100,000 times that of the RDA value. Add to that, potassium iodide is being prescribed safely in dosages of up to six grams per day for patients suffering with chronic obstructive pulmonary disease (COPD). High dosages of this amount have been taken for years by individuals due to its therapeutic value in activating lung secretions.²⁰

Iodine Kills Antibiotic Resistant Germs

Many of us as children were familiar with an iodine solution being topically applied on a scrape or cut. It works to enhance wound healing because it kills most pathogens on the skin within ninety seconds. As a general reference for what iodine may combat, the following list can provide guidance:

- Antibiotic activity
- Antiviral (many viruses)
- Antifungal (molds, yeasts)
- Anti-parasite activity (protozoa)
- Antibacterial (gram-positive and gram-negative bacteria and mycobacterium*)

***Gram-positive samples**

- Actinomyces (Gram +) Filamentous
- Bacillus (Gram +) Endospore

Clostridium (Gram +) Obligate Anaerobe Endospore

Corynebacterium (Gram +) Pleiomorphic

Enterococcus (Gram +)

Gardnerella (Gram +) Rods

Lactobacillus (Gram +)

Listeria (Gram +) Rods

***Gram-negative samples**

Escherichia coli (E. coli)

Salmonella

Shigella

Enterobacteriaceae

Pseudomonas

Helicobacter

Stenotrophomonas

Legionella

I wish to inspire you to think of iodine for a wide range of disorders. It is clear that the thyroid gland requires iodine, and the immune system requires a healthy functioning thyroid for optimum performance.[21](#), [22](#)

Homeopathic Remedies for Thyroid Conditions

IN THE EARLY stages of thyroid conditions, homeopathic treatment is often effective. The domain of a professional homeopath includes addressing other constitutional imbalances and remedying them appropriately, according to the modality of each recommendation.

That said, there are rarely any definite protocols for treating specific disorders using homeopathy. Therefore, two patients suffering with the same disease would most likely be given different sets of remedies. This makes it difficult for an individual trying to pick the best remedy to suit their problem, since homeopathic treatment is so individualized.

Homeopathy also follows the holistic approach, evaluating the whole person—their mental, emotional, and physical state—in addition to their symptoms. Another principle of homeopathy that differs from traditional treatment is the understanding that a poison can become a remedy in a sufficiently diluted state (similar to how vaccines function in conventional medicine).

Homeopathy is perhaps one of the most misunderstood treatment modalities when examined for its tangible properties. In homeopathy, the energy frequency of the original remedy is what is retained, which then works with our own biochemical energy make-up. Simply put, there are specific vibration frequencies or patterns that neutralize the disease's frequency, all the while reinforcing our own innate body energy. From homeopathy's perspective, disease involves inherent patterns called **miasmas**. Miasma has retained its same meaning ever since it first appeared in English in the 1600s: it comes from the Greek word *miainein*, meaning “to pollute,” as in a disease-causing substance. These patterns may be genetically predisposed or acquired throughout one's life. The aim of a professional homeopath is to have these patterns made latent or reduced, and ideally eradicated from the body.^{1, 2, 3}

Because of the inability of thyroid medication to work optimally for many patients even with additional supplementation of T3, homeopathic remedies have shown their usefulness in conjunction with conventional medicine like Synthroid or its generic equivalent (T4 hormone). Thyroid medication has shown to be inadequate at fully maintaining thyroid balance and functioning despite adjustments; therefore, homeopathy offers great benefit for relieving patient's symptom complaints when given alongside traditional thyroid medications.⁴

Considering as many factors as possible, there are a few go-to remedies to choose from when looking to help a low-functioning thyroid or one that is overactive. Homeopathic treatment has been used successfully to help patients manage both hypothyroid and hyperthyroid disorders.

As a general guide with these remedies, try 30c strength three times a day in the form of pellets or liquid drops, placed under the tongue for maximum absorption. If there is *no* noticeable improvement or permanent change, then other avenues need to be explored, such as food allergies, gut permeability, and heavy metals. In addition, depending on the person's current health status, other symptoms and complaints, along with their level of nutrition, might also need to be addressed.

Homeopathic Remedies for Hyperthyroidism

Iodum, Lachesis, and Nat mur are three of the most commonly used homeopathic remedies in the treatment of an overactive thyroid gland, although there are others like Fucus, Lycopus, Ferrum iod, and Spongia tosta that provide great help for many of the symptoms involved with hyperthyroidism.

Iodum (Iodine)

The homeopathic remedy iodum is indicated for patients experiencing hyperthyroidism. When given in correct dosages, iodum helps both the thyroid and pituitary glands. It is also useful in the treatment of goiter and exophthalmoses (bulging eyes). Check the following symptoms to determine whether its application is warranted:

- Eating excessively and still losing weight
- Experiencing heart palpitations and body pulsations (shaking)
- Glandular atrophy of lymph nodes, thymus, ovaries, breasts and testes
- Very impatient, rushing
- Unusually talkative, like to keep busy
- Difficulty relaxing, feelings of agitation or anger
- Body runs hot (feeling worse indoors); feels better in cool temperatures and out of doors
- Bulging eyes

Lachesis (Bushmaster)

Lachesis is very useful for treating an overactive thyroid and inflammation of the thyroid gland. It is also useful in cases of hypertension, heart palpitations, hot flashes, goiter, and bleeding vulnerability. Consider Lachesis if your symptoms coincide with the conditions listed for iodum, as well as:

- Neck feels constricted
- Difficulty swallowing
- Heat sensitivity; feel worse in the heat and sun
- Nervousness; intense feelings (talkative)
- Feelings of jealousy, may have had heart broken; not trusting
- Increased sex drive
- Tired, extra sleep does not help; feeling unwell
- Unwanted thoughts; may succumb to substance or alcohol abuse

Nat mur (Sodium Chloride)

Nat mur is one of the most commonly used remedies (in conjunction with others mentioned in this section). In particular, treatment protocols for problems of hyperthyroidism, thyroiditis, exophthalmoses, and goiter benefit from the accompaniment of Nat mur. Symptoms to be on the watch for include the following:

- Exhaustion, experiencing great weakness
- Heart symptoms: palpitations and fluttering
- Weight loss
- Dry skin and mouth

- Oily face
- Migraines
- Flushing or light hot flashes
- Suppressing emotions (seeking solitude)
- Sense of grief and loss; does not wish to be consoled
- Feel worse in heat and sun; feel better in cool surroundings and outside
- Mental work is best in the morning

Fucus vesiculosus (Sea kelp)

Fucus mainly helps underactive thyroid conditions, but when the dosage is increased, it has applications for hyperthyroidism, as well. Seek professional help in regularizing dosage levels of fucus for hyperthyroidism. Much more on the usage and benefits of fucus can be found under *Hypothyroidism* on page xx.

Lycopus (Bugleweed)

While iodum, Lachesis, and fucus may be the most commonly used, lycopus is one of my favorites when dealing with an overactive thyroid involving inflammation. (You can find out more about bugleweed under “Herbal Remedies for Thyroid Conditions,” where it is used in a different preparation for the treatment of thyroid auto-immune disorders and thyroiditis.)

In its homeopathic state, Lycopus is indicated for hyperthyroidism, exophthalmoses, and an enlarged thyroid. A person needing this remedy may have the following symptoms:

- Heart and lung problems
- Rapid palpitations or heart pain
- Chest constriction and shortness of breath
- Prone to bleeding
- Hemorrhoids may be present
- Nervousness coupled by a tendency to rush; may encounter trembling
- Hard to focus, mind wanders
- Heightened symptoms during motion and exertion, and when it’s too hot
- May feel worse upon waking up from sleep and nearing the end time of day; approaching sunset
- Feeling weak
- Suffering with insomnia
- Worse during menopause
- Disliking the lingering smell of food

Phytolacca Decandra

The homeopathic version of pokeweed, Phytolacca Decandra is an excellent remedy for treating an enlarged thyroid gland or goiter. It is among the top chosen remedies in thyroid-related disorders, especially when accompanied by excessive weight gain and hardened, swollen thyroid tissue. Another way it benefits the thyroid and other glandular tissue is by increasing lymphatic flow and circulation throughout the body. Phytolacca Decandra is indicated for the following symptom complaints:²

- Glandular enlargement

- Swelling, accompanied by heat and inflammation
- Swollen tonsils
- Throat lesions and soreness
- Lymph node pain and swelling
- Breast inflammation
- Mastitis in breastfeeding
- Pain and inflammation of fibrous tissue and muscles
- Heat and inflammation of the skin
- Other various types of pain (sharp to dull)

Ferrum iod (Iron Iodide)

Ferrum iod is very useful in uncommon situations where a person is overweight and suffering with hyperthyroidism. Ferrum iod is indicated for individuals dealing with an overactive thyroid, especially after menses have stopped. Other associated symptoms may include a hard goiter, enlarged glands, the absence of regular menstrual cycles, or urinary troubles. Strong indications for iron iodide may involve the following symptoms:

- Weight loss
- Anxiety and restless
- Irritability and feeling the need to rush
- May be anemic
- Pale complexion or flushed (red face)
- Blood rushing; increased circulation
- Worse at night while lying in bed
- Feel worse in hot temperatures and during physical exertion
- Feel better outside in the open air

Spongia tosta (Roasted Sponge)

Spongia tosta helps thyroid conditions when the gland appears hard and swollen (goiter), as well as the problem of bulging eyes. This person could have a history of asthma and coughing episodes during the night. They may feel that the cough is related to the goiter and not simply their difficulty breathing. Pain might also be involved when touched or when pressure is applied. Other indicators include:

- Heart palpitations
- Anxiety, fear, and despair
- Hot flashes or flushing
- Swollen testes
- Exophthalmoses (bulging eyes)

Homeopathic Remedies for Hypothyroidism

Homeopathy offers several great choices when looking for relief from the all-too-common condition of a low-functioning thyroid gland. We'll be covering *Fucus vesiculosus* and *Kali carbonicum*, *Graphites*, *Sepia officinalis*, *Calcarea carbonica*, *Nux vomica*, and *Lycopodium*

clavatum. These are among the most popular choices for treating hypothyroidism homeopathically.

Fucus vesiculosus (Sea kelp)

Fucus is most often called for when the thyroid is low-functioning, especially when coupled with a slow metabolism. Stimulating the thyroid and pituitary glands is essential for providing our metabolism with a much-needed pick-me-up, and fucus has shown to have a positive effect on both. It is also suitable for Hashimoto's Thyroiditis; you don't want too much iodine in this case, and fucus provides a much lower amount compared to some other iodine sources.

This is perhaps my most commonly prescribed homeopathic remedy. Consider fucus if you recognize the following symptoms, especially if they are persistent:

- Fatigue, sluggishness, and low metabolism
- Weight gain shown as loose, flabby fat
- Cold hands and feet
- Goiter in obese patients
- Swollen glands
- Heart disease; clogged arteries
- Complain of pressure around the head; subject to headaches
- Excessive hair loss
- Excessive perspiration
- Sexual dysfunction
- Tend to be constipated
- May experience joint and muscle pain

Kali carbonicum (Potassium carbonate)

Kali carbonicum is another very helpful remedy for a slow metabolism combined with an underactive thyroid. There may be additional indicators of benefit for this remedy, but the symptom list expressed above, for fucus, would generally indicate some benefit for the use of Kali carb. A few other indicators include:

- Obesity
- Fatigue and exhaustion
- Constipation and flatulence
- Feeling cold; disliking very cold drinks
- Digestion problems; may be milk intolerant
- Water retention and puffy eyes
- History of bronchitis, sinusitis, or anemia
- May suffer with back pain
- Craves sweets

Graphites (Graphite/Black Lead)

Graphite is useful in circumstances where an underactive thyroid presents with excess body weight, especially when the individual is very sensitive and emotional. It is also helpful for persons who may lack confidence or complain of digestion and bowel problems. Some of the patient's symptoms will be the same as described under Kali carb; otherwise, look for the following:

- Very obese
- Ongoing chronic constipation
- Constant abdominal discomfort; bloating
- Upsets easily and may have anticipation anxiety
- Difficulty making decisions
- Dry skin; cracked, crepey, or eczema
- Nails may be corrugated (ridges and grooves)

Sepia officinalis (Ink of Cuttlefish)

Hypothyroidism is strongly associated with menstrual problems, especially when menses are very profuse. The patient's cycle may be starting earlier than normal, though there may be other accompanying contributors to this problem, such as the xeno estrogens in our environment and food. However, sepia is an excellent remedy to help correct menstrual imbalances. The remedy *Calcarea carbonica* (which will be discussed next) is best accompanying sepia when there is heavy menstrual bleeding, in particular when a person's outer extremities are extremely cold.

Ferrum metallicum and Cinchona officinalis is another suggested combination to consider when excessive bleeding during menses is a problem. Ferrum is very effective in cases of anemia associated with heavy menses, and Cinchona is for the same indicators when found in conjunction with the presence of dark clots. A few more hints for using these recommendations include:

- Pale, anemic and feeling faint
- Very sensitive to cold, feeling cold
- Obesity
- Exhaustion
- Excessive hair loss (alopecia)
- Pelvis discomfort; may have experienced early menses
- Excessive menstrual flow
- Apathy toward loved ones and sex; possibly depressed
- Uterine prolapse
- Problematic perspiration and night flushes

Calcarea carbonica (Calcium carbonate)

Calcarea carb is an excellent choice for an underactive thyroid when there is extreme weight gain involved. The patient may be of fair complexion and suffer from sweating, especially during the night. Their excess weight appears flabby and the person always complains of being cold. In addition, the remedy graphite is useful to help control ongoing weight gain, and Lycopodium clavatum may be helpful for patients who retain their weight in the lower half of their body (buttocks and thighs). Look for the following indicators of Calcarea carb and similar remedy characteristics:

- Excessive weight gain
- Flabby childhood fat
- Problematic perspiration in head area; overexertion
- Dislikes cold environments
- Desires warm drinks
- Worries about their future

- Fair-haired and chalky skin
- May suffer with constipation and anxiety
- Swollen glands
- Arthritis and weak bones could be an issue
- Craves sweets

Nux Vomica (Quaker Button)

Nux vomica works wonderfully in those patients of hypothyroidism who find themselves easily offended. It is particularly helpful when there is a low-functioning thyroid coupled with obstinate constipation. In the instance of women who are experiencing prolonged menses with hypothyroidism, Nux vomica would be an additional remedy choice.

Other symptoms expressed by individuals possessing an underactive thyroid that may have indicators for Nux vomica include:

- Intense, impatient, and temperamental
- Critical and irritable
- Desire stimulants; coffee and alcohol
- Craves fatty and spicy food
- Bloating is a constant companion, before and after eating
- Patient feels cold
- Scanty stool; feeling of incomplete bowel elimination

Lycopodium clavatum (Club Moss)

Slightly different to other remedies suggested for constipation, Lycopodium is excellent for those who suffer with gastric complaints and an underactive thyroid. This remedy is also indicated for excessive hair loss (alopecia). The following symptoms may indicate the need for Lycopodium clavatum:

- Gastritis or problems with acidity
- Digestion complaints later in the day between 4:00–8:00 PM
- Difficult defecation and hard stools
- Desires hot food and drink
- May crave sweets
- Skin pallor; yellowish with dark circles under eyes
- Liver weakness and hemorrhoids
- May suffer with low self esteem
- Feels hungry but fills up quickly
- Does not feel better lying down
- Worse after eating foods that tend to produce gas (legumes and cruciferous vegetables)
- Declining memory and mental acuity

Treating Goiter with Homeopathy

There is a wide range of homeopathic support available for individuals suffering from a goiter, many of which have been mentioned. There are, however, some specifics for certain remedies, having to do with whether the swelling is on the left or right side of the thyroid gland. As always,

the chosen remedy depends on the patient's constitutional symptoms, but popular choices include *Fucus*, *Calcarea iod*, *Lachesis*, *Lycopodium*, and *Spongia*. Specific indications continue below:

- **Lachesis** is called for when the goiter is on the left side of the thyroid. Patients may experience difficulty swallowing liquids as opposed to solid food and generally complain of feeling hot.
- **Lycopodium** is indicated for when the swelling is on the right side of the thyroid.
- **Spongia** is very useful when the goiter is so large that it can cause suffocation while sleeping.
- **Calcarea iod** is helpful when a goiter appears around puberty.
- **Fucus** is highly beneficial when there is obesity or steady weight gain.

Graves' Disease

Hyperthyroidism is synonymous with Graves' disease, and even though there are a couple of go-to remedies, detailed patient evaluation must be performed for all contributing factors.

Iodum is especially indicated for hyperthyroidism as well as for treating Graves' disease. Symptoms to be on the lookout for are extreme heart palpitations even when there was very little physical activity and the patient feeling extremely hot. This individual will continue to lose weight even though they continue to eat and have an increased appetite.

Lycopus virginicus is of great help in treating Graves' disease, in particular when there is the presence of exophthalmoses (bulging eyes). There will be similar problems of palpitations and pounding heart; also, expect the heart rate to be up. These occurrences often accompany agitation and nervousness.

We have looked at many ways to treat thyroid dysfunction, covering different treatment modalities as well as looking at other health complications that may be preventing your thyroid gland from fully functioning optimally. The next step is to ensure specific nutrients are not missing from your diet, which can add to or even cause your thyroid imbalance. The information contained in the next chapter will help you pinpoint any further nutrient deficiencies that may need to be propped up.

How to Care for Your Thyroid Gland

ALACK OF KEY nutrients can instigate a thyroid condition, especially a hypo state. Adding quality supplements or herbs to increase intake of mineral and vitamins can help ease various deficiencies. For a general overview, use whole food supplements whenever possible, such as those found in nutritional yeasts (all B vitamins and amino acids) and algae (blue or green works best as a complete food source); include raw juices for antioxidants, nutrition, and enzymes; and sea vegetables or algae for trace minerals and iodine. Vitamin D3, selenium, zinc, alpha lipoic acid, and magnesium should also be considered.

Nutrition for Thyroid Gland Disorders

Sugar and Caffeine

Whether your thyroid condition is hypo or hyper, it's best to avoid sugar and caffeine products. Often, people with low thyroid condition turn to these stimulants to compensate for their lack of energy. But what they don't realize is the harm being inflicted by high amounts of caffeine and sugar. In general, eat less starchy foods, carbs, sugar, and sugar products (unless it is deemed safe, as for a diabetic) and eat more non-starchy vegetables and greens. For hyperthyroidism, avoid all refined foods, dairy products, wheat, gluten, sugar, caffeine, coffee, alcohol, and other chemical stimulants.

Good Fats

Vitally important as well is your intake of omega-3 fatty acids in the form of fish oil and seed oils (such as flax seed). Your glands require high quality protein and fat. Other good fat sources include nuts and nut butters, avocados, seeds (like flax and sesame), olive oil, ghee, coconut oil and milk products, full fat and aged cheese, yogurt, kefir, and cottage cheese.

Protein

Adequate quality protein sources benefit thyroid function, as it is protein that transports thyroid hormone to the tissues. Choose drug-free flesh proteins and vegetarian sources such as legumes and nuts, seeds, and butter made from the same.

L-Tyrosine

Covered more extensively in Chapter 7, L-Tyrosine is an amino acid earmarked for the thyroid gland which, during times of under-activity, offers more than one benefit. Most often, amino acids are tied into the neurotransmitters of the brain. In the instance of L-Tyrosine, it is a required element for dopamine, a neurotransmitter responsible for any number of functions, including mood and sleep. Increasing the health of the thyroid, then, has a direct effect on one's emotional wellbeing—a win-win, all round.

Probiotics

Another essential dietary component for health maintenance and functioning of the thyroid gland is the consumption of “probiotics” in supplement form, or else in certain foods such as yogurt, kefir, and clabbered milk. Twenty percent of thyroid gland function depends on friendly flora.

Nutrition for Thyroid Dysfunction

Besides the numerous chemicals we are bombarded with daily, nutrient deficiencies are a prime suspect in compounding thyroid problems. Let’s take a brief look at a few nutrients known to contribute to thyroid function, which need to be supported to prevent thyroid instability.

How to Take Minerals

All minerals require a protein to be ingested at the time of consumption; for example, small amounts of yogurt, ground flax seeds, nut butters, whey, or other protein powders and meals where a portion includes protein. All other supplements are to be taken with food unless specified on the label. The reason protein is needed when taking minerals is because they require an amino acid to carry and direct them onto their designated path throughout the body.

Zinc

Zinc is a mineral required to ensure thyroid cell receptors successfully bind to thyroid hormone, as well for activation of these hormones. Studies reveal dramatic benefits to those suffering with thyroid problems, especially hypothyroidism, when supplementing their diets with zinc. In the conclusion of a four-month study where zinc deficiency was clinically corrected, participants’ thyroid hormone concentrations increased, as did their resting metabolic rate.¹ For the transference of inactive T4 into the active T3, zinc must be present. Additionally, the pituitary and hypothalamus require zinc to signal thyroid activation.²

For sustaining and enhancing the healing process, zinc is the second most important element in our bodies, performing a hundred or more functions, among them tissue repair and immune function.

Iron and B12

Iron is another mineral to keep an eye on; when iron levels become low, it supports hypothyroidism. Low ferritin (iron) values are more commonly noted with women and people who have difficulty sustaining B12 levels. Oftentimes, low ferritin is an inherit predisposition (B12, along with folic acid, holds iron in the blood). Therefore, dietary iron intake may not be the culprit in cases of anemia. Blood tests should provide a clear picture of which nutrient is needed for balance.

Iodine

Iodine is synonymous with thyroid health and figures prominently in different stages of growth; is important for body functions and provides protection. Please refer to Chapter 7 for more on the critical benefits of and sources for iodine.³

The thyroid gland requires a small amount of iodine daily to make thyroid hormone. It follows, then, that you should avoid iodine when the thyroid gland has become overactive or inflamed

until the condition is rectified. Having said that, depending on the iodine source and dosage, a more modest amount has shown to be helpful in certain instances of thyroid overactivity.

During the 1950s, the incidence rate of goiters was such a problem that salt became iodized to ward it off. However, salt is not the ideal method of getting iodine into your system; not only that, but our soil has far fewer nutrients than in years previous. In other words, a supplement is required to feed our gland's need for iodine. The good news is that iodine is an inexpensive product to buy, and there are several natural sources, such as sea plants like kelp, dulse, and seaweed, as well as convenient liquid iodine drops. Other choices include potassium iodide or full thyroid support in a combination product and homeopathic preparations. These should be taken daily, as directed by product of choice.

Selenium

Selenium is required for thyroid hormone activation and has the ability to decrease thyroid antibodies. Selenium is crucial for the conversion of T4 to T3, without which T3 cannot be produced in the correct amounts. Selenium also really helps to boost glutathione and can aid in treating Hashimoto's.^{4,5}

Essential Fatty Acids (EFAs)

The word "essential" has never had a more important meaning. Without these fats in their proper proportion, it is impossible to remain well—let alone pain-free—throughout one's lifetime. Huge strides have been made in science, showing us the necessity for adequate amounts of EFAs for disease prevention and for fully functioning body systems. Of these, omega-3s are the ones most sought after by the body (typically found in fish and seed oils), especially since our diets have been traditionally high in the omega-6 fatty acids found in vegetable and grain cooking oils. The proper ratio for optimum balance in the body of omega-6 fatty acids compared to omega-3 fatty acids is a 1:1 ratio, whereas most people maintain a 20:1 or even 30:1 ratio.^{6,7,8}

EPA/DHA Fatty Acids

Essential fatty acids, especially from cold water fish, are abundant with EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). Omega-3 fatty acids are referred to as EFAs (essential fatty acids) or PUFAs (polyunsaturated fatty acids); these fats are required in their correct balance for utilization throughout the body. Dietary sources of omega-3 fatty acids include fish oils and seed oils such as flax seed oil, hemp oil, chia oil, and walnut oil.

But what is the difference between fish oil and seed oil? Fish oil differs from plant-based oils in that fish oil has long-chain fatty acids and seed oils have short-chain fatty acids. Only long-chain omega-3 fatty acids have the ability to directly feed the brain and the body, whereas plant omega-3s nourish other parts of the body.

Our body's inflammation response, immune response, tissue repair, and formation of every cell membrane all require an omega-3 fatty acid. Knowing that, it isn't hard to understand why our bodies aren't able to restore properly or block the progression of chronic inflammatory problems on their own. People with chronic inflammation taking fish oils a few times a day have significantly less pain and a better quality of life. When choosing a quality blend of fish oil, look for the ratio between DHA (docosahexaenoic acid) and EPA (eicosapentaenoic acid) to be in higher concentrations.

Alpha Lipoic Acid

Referred to as a semi-essential nutrient, alpha lipoic acid is a key player in the antioxidant recycling process and therefore is of value when found in multiple supplement formulas. It is the only nutrient that is both water- and fat-soluble. Alpha lipoic acid's superb antioxidant action protects thyroid tissue from oxidative stress and improves endothelial function in people with subclinical hypothyroidism. For those taking thyroid T4 medication therapy, alpha lipoic may interfere with its conversion process.⁹

Antioxidants

In nature, antioxidants are the pigments in plants that give them their intense and brilliant colors. But more importantly, antioxidants are a major part of our body's defense team and come in many different categories. Even though we've been consuming these nutrients for thousands of years, only recently have comprehensive studies taken place to understand the complex role they play. By incorporating foods rich in antioxidant qualities, dangerous free radicals in the body are neutralized, preventing degenerative diseases while also providing protection against infections and repairing damaged genes.

Antioxidants are classified into two groups: water-soluble (hydrophilic) or lipids (hydrophobic). They are also grouped by their response time in the body, as fast acting and slow acting. A slow-acting antioxidant example is classified as a complex organic antioxidant (such as phenolics), while a fast-acting antioxidant would be something closer to vitamin C.

Vitamin C

Vitamin C is especially needed in cases of hyperthyroidism. One reason may be due to a prolonged deficiency of this vitamin, which in itself will cause the thyroid to secrete too much hormone, resulting in thyroid overactivity. People with hyperthyroidism require high amounts of vitamin C, mainly because it is leaving the body so quickly.

Vitamin C is impressive on many levels. It reaches every cell of the body and plays a significant role in fighting infection by stimulating immune response (production of white blood cells) against the onslaught of disease-causing invaders. A powerful antioxidant, vitamin C is highly endorsed for combating cancer and inflammation. Vitamin C is required for the repair of connective tissue, as well as the production of collagen.

Vitamin A

Vitamin A has proven useful in the treatment of goiter and low thyroid function, even when iodine is deficient. For a little background, vitamin A has multiple effects on the pituitary-thyroid axis function. Vitamin A is involved in the peripheral metabolism of thyroid hormone and the production of thyrotropin (TSH) by the pituitary, in addition to modulating thyroid gland metabolism.

It is common knowledge that these conditions are related to iodine deficiency; however, studies showed vitamin A to have a positive impact (without the addition of iodine) on these thyroid disorders. Researcher Zimmermann reports on a study of children presenting an enlarged thyroid and hypothyroidism, "Vitamin A given alone, without iodine repletion, high-dose vitamin A supplementation in combined vitamin A deficiency and iodine deficiency may reduce thyroid hyperstimulation and reduce risk for goiter."¹⁰

Because vitamin A is noted for decreasing autoimmune responses in the body, it's presence reduces the risk of autoimmune diseases like Hashimoto's Thyroiditis.¹¹

Vitamin E

Vitamin E is stored in the body's fatty tissue and is perhaps best known for its highly-motivated assault on free radicals. What may not be commonly known is that vitamin E has a cellular metabolic effect on the thyroid gland, the adrenals, and pituitary gland. Vitamin E also prevents the blood from clotting, and hence is great for heart disease and boosts the immune system, which is naturally beneficial for those people with autoimmune thyroid conditions such as Hashimoto's Thyroiditis and Graves' Disease. Vitamin E also works synergistically with other nutrients, including fatty acids, selenium, and manganese. Vitamin E and selenium are required nutrients for the proper conversion of T4 to T3. Always choose naturally-sourced vitamin E because it is fifty times more powerful than the synthetic form.¹²

Vitamin B Complex

As with all nutrients in the body, B vitamins collectively are vital for good thyroid health and have individually different roles, as outlined below:

- B1 (thiamine) is particularly helpful in treating a hyperthyroid condition.
- B2 (riboflavin), when deficient, will inhibit thyroid function, depressing the secretion of thyroid *and* adrenal hormones.
- B3 (niacin) seems to be multi-purposed, being involved in all body cells.
- B6 (pyridoxine) is instrumental in thyroid function. B6 is essential for the thyroid's ability to utilize iodine effectively (to make thyroid hormones) and may be needed even more during hyperthyroid activity.
- B12 is vital for those who no longer have a thyroid gland and for hypothyroid conditions. In these instances, they either cannot absorb this vitamin or have great difficulty.

Magnesium

Magnesium is arguably the most important mineral in the body. It is involved in many biological roles and performs more functions than any other mineral by a significant margin. Not only does magnesium assist in the production of cellular energy, but the heart cannot make use of the constant energy supply needed to function properly without adequate magnesium.

Like other areas in the body, magnesium is also utilized by the thyroid for the conversion of T4 to T3. A few other requirements of magnesium include energy production, bones and teeth, neuromuscular and sensory systems, and the synthesis of vitamin D to assist calcium in finding its way into the bloodstream.

Superoxide Dismutase (SOD) Enzyme

Superoxide dismutase is a potent antioxidant, highly regarded for its ability to break down potentially harmful oxygen molecules in cells, thereby preventing tissue damage. Among its many profound benefits is excellent inflammation control, which assists in Thyroiditis conditions and oxidative stress.

Candida and Gut Permeability

Because the over proliferation of candida is a major instigator of leaky gut, which then becomes the foundation for many autoimmune disorders such as Hashimoto's, we'll need to take a closer look at the role of yeast and probiotics.

Several causes have already been explored, but one of the roots for disease is an overgrowth of candida albicans, which makes its way into the lining of our intestinal tract, causing gut permeability. When our intestinal lining becomes compromised, it allows for unwanted proteins, particles, sugar molecules, and bacteria to seep into the bloodstream. This automatically initiates an immune response, causing inflammation. These and other pathogens also release toxic substances throughout their life cycle, known for degrading and decaying tissues within the gastrointestinal tract.

Candida seems to be more of a permanent fixture, since it appears to be much hardier than other bacteria. It is an opportunistic pathogen which flourishes when good gut flora (*acidophilus* and *bifidus* strains, also known as probiotics) become insufficient in our intestinal tract. Another element that alters the balance of the friendly flora in our body are toxic chemicals and genetically modified organisms (GMOs). Pesticide- and GMO-laden foods all have an adverse effect on our good gut bacteria. Candida will continue to bounce back (as will other pathogens) so long as toxins continue to invade the intestinal tract.

N-acetyl-cysteine and Candida

N-acetyl-cysteine (NAC) is a form of the amino acid Cysteine, a precursor to glutathione (our most potent antioxidant), which plays a key role in liver detoxification. As we have come to know, toxic chemicals *do* affect the health and function of the thyroid gland. Inflammation and autoimmune disorders of the thyroid are interrelated with candida and other infectious bacteria residing in the intestinal tract that precipitate gut permeability. It is in this area that NAC has shown a unique benefit for autoimmune disorders, including Hashimoto's Thyroiditis.

NAC is not only disruptive to bacteria biofilms (the protective layer formed by bacteria and yeast), but research shows NAC also disrupts the biofilm of candida. Many biofilms are resistant to our immune system and traditional antibacterial therapies.¹³

For stubborn cases of yeast and bacteria overgrowth or weak immune systems, you may want to consider adding NAC to your list of remedies.^{14, 15}

Being that NAC is a natural precursor to glutathione, it is also effective as a chelator of mercury. As already discussed, mercury is very damaging to the thyroid and NAC has shown to be very effective in assisting its removal from the body, as well as other poisons.¹⁶

Probiotics and Gut Flora

Our body's individual microbiome environment—the community of microorganisms that perform a number of crucial functions in our body—is our constant companion and caregiver throughout our life, without which we could not survive. And, because these beneficial bacteria are key to a well-functioning immune system, it's only natural that they help ward off chronic inflammation. We have 100,000 billion viable microbes in our intestines; of the fecal mass excreted from the body, 85 percent is biomass (bacteria).

Lactobacillus acidophilus and *Bifidobacterium bifidum* have the unique ability to increase our body's built-in defense mechanisms. Probiotics assist in fighting superbugs and routinely balance certain pathogens in the body like H-pylori, yeast, fungus, and e-coli to assist with the maintenance of normal intestinal health.

The biggest threat to these 200 different species (7,000 strains) is antibiotics. Considering the prominent place these microbes hold in our body, it isn't hard to see how chronic inflammatory intestinal diseases like Crohn's and colitis can besiege the body as a result of our gut having been

essentially napalmed by antibiotics. To support this crucial system, supplement daily with probiotics and eat fermented foods like kefir, natto, and sauerkraut.^{[17](#), [18](#)}

Many lifestyle changes may need to be introduced to support the function of your thyroid gland and related systems, depending on your individual health status. By recognizing diet triggers and making necessary nutritional adjustments, along with supplement regimens, is a first step in rebalancing this most crucial endocrine gland.

CONCLUSION

WE HAVE COME a long way since the days of our ancestors. Our lives have been shaped by the introduction of modern agricultural practices and modern medical practices, and the challenges of being healthy and staying happy in the industrialized world we live in is an everyday struggle.

Our ancestors had limited access to year-round food and supplies, the sort of luxuries that we now take for granted. Yet physically, our ancestors were superior in many ways. The stressors our biological ancestors dealt with resulted in their completely different evolution. They did not eat from chemical-laden and nutrient-void soil. Their drinking water wasn't full of toxic pollutants caused by agricultural runoff and environmental chemicals in the air.

Today, our bodies have been shaped by improper food choices, modern-day agricultural practices, and advanced medical procedures that have disrupted our biochemical makeup. Over the course of this book, you've seen the impact medications have on our bodies—how they block thyroid hormones and disrupt thyroid cell receptors. You now understand that thyroid medication is not ideal, but more importantly, you now know how to properly take care of this crucial gland, which has the greatest influence over our day-to-day existence.

Our journey is no longer as simple as providing proper nourishment to our endocrine system. We are also faced with the repercussions of medication routinely used to treat complaints that has led to the manifestation of autoimmune problems. A primary cause of leaky gut syndrome is antibiotics or the prolonged use of other drugs, the consequences of which are directly linked to inflammation of the thyroid gland, as well as other autoimmune disease complaints.

Hypothyroidism is rampant today due to inadequate testing and lack of proper nutrition. There is a major imbalance in our society, one that is not being taught to those we trust most, who in turn are responsible for telling us how to keep our bodies nutritionally sound to prevent disease. Our body cannot utilize synthetic compounds that no longer possess the ability to grow tissue (medications). It is only through whole, natural biochemicals found in nature that we are provided the required elements to function.

I've tried to provide as many practical tools as possible to help treat the myriad of symptoms associated with a poorly functioning thyroid. Some of these include natural medicine and specific dietary nutrients tailored to suit individual needs, as well as a comprehensive homeopathic guide for those who favor an alternative healing approach.

Take comfort in knowing there is a brighter future ahead of you once your thyroid is properly supported. That said, you do not need to be treating a disease of the thyroid to take advantage of fast improvements in your energy levels and mood; the supplements described in this book can be beneficial for anyone looking to ensure their thyroid is properly supported and working at optimum levels. And you cannot achieve optimum health without managing the health of your thyroid/endocrine system.

By understanding the intricate dance between your thyroid and the rest of your body, you place yourself on the path to phenomenal health—one in which you can renew and rejuvenate physically and mentally.

RESOURCES

Herbal Remedies: Additional Research Resources

54 Herb Society Forum

www.network54.com

Natural Standards Database

3rdparty.naturalstandard.com/frameset.asp

Cochrane Database Systems Reviews

community.cochrane.org

National Institutes of Health

<https://nccih.nih.gov/>

The National Institutes of Health (NIH) is a biomedical research facility primarily located in Bethesda, Maryland. An agency of the United States Department of Health and Human Services, it is the primary agency of the United States government responsible for biomedical and health-related research. The NIH both conducts its own scientific research through its Intramural Research Program (IRP) and provides major biomedical research funding to non-NIH research facilities through its Extramural Research Program.

National Institutes of Health Office of Dietary Supplements

ods.od.nih.gov/

National Center for Complementary and Alternative Medicine

nccih.nih.gov/

Natural Database Therapeutic Research

naturaldatabase.therapeuticresearch.com/

Herbs-at-a-Glance

nccih.nih.gov/health/herbsataglance.htm

Ayurvedic Medicine

nccih.nih.gov/health/ayurveda/introduction.htm

American Botanical Council ABC

abc.herbalgram.org

American Herbalists Guild

www.americanherbalistsguild.com/

The College of Practitioners of Phytotherapy

www.phytotherapists.org/

Herb Research Foundation

www.herbs.org/herbnews/

International Herb Association

www.iherb.org/

National Institute of Medical Herbalists

www.nimh.org.uk/

Herbs are Special

www.herbsarespecial.com

Herbal and Supplement Sources

ACS

www.allcosmeticsource.com Sales worldwide.

Eclectic Institute

www.eclectichrtb.com

Frontier Co-op

www.frontiercoop.com/ourproducts.php

Herb Pharm

www.herbpharm.com

Natural Factors

www.naturalfactors.com

Now Foods

www.nowfoods.com

Nutraceutical Solaray

www.nutraceutical.com/collections/healthy/solaray

Seroyal Genestra Professional Products

www.seroyal.com

Vitamin Shoppe

www.vitaminshoppe.com

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