

[CN]Chapter 2

[CT]The Unhealthy Thyroid

[IP]When the thyroid is well, you won't give it a second thought. But when the humble gland is diseased, your entire existence can be affected. You may gain or lose weight, feel hot or cold, and notice changes in your energy levels. In this chapter, we'll give you an overview of what happens when the thyroid isn't functioning properly.

[H1]When The Thyroid Gets Sick

[NF]Life is humming along smoothly, but one day you notice that your skin is drier than usual. Or maybe you start to feel more fatigued than normal. Or perhaps you feel anxious, uneasy, and irritable.

While it's easy to chalk up these symptoms to the weather, advancing age, or too much stress, they are also the symptoms of a thyroid problem. Too much thyroid hormone, and your body speeds up. That's hyperthyroidism. Too little thyroid hormone, and it slows down. That's called hypothyroidism.

Many things can go wrong with the thyroid. An autoimmune problem, in which the body is attacking its own healthy tissues, may trigger Hashimoto's thyroiditis and cause hypothyroidism. Or it may cause Graves' disease, which will bring on hyperthyroidism. You may also develop nodules (lumps), goiters (enlargement), or cancer. Your thyroid may also be affected by pregnancy and advancing age.

Each disease creates its own signs and symptoms, some more disturbing and noticeable than others. The good news is, most problems with the thyroid are easily treated. Left untreated however, thyroid disease can cause some serious complications, even death.

[E-Fact]

[SB]When it comes to autoimmune diseases, which include lupus, type 1 diabetes, and Addison's disease, the odds are stacked against women. In fact, about 75 percent of all autoimmune diseases occur in women, leaving experts to speculate that hormones play a role. Autoimmune diseases are also among the

most poorly understood and recognized forms of disease, says the American Autoimmune Related Diseases Association.

[ESB]

Anyone can develop any of these thyroid diseases. But certain factors make you more likely to develop a thyroid problem than the next person who doesn't have that risk. At the same time, having these risk factors doesn't guarantee that you'll have a thyroid problem. Here are some of the main risk factors that can affect thyroid health.

[H2]Gender and Age

No doubt, being a woman makes you more vulnerable to thyroid disease. In fact, according to the American Association of Clinical Endocrinologists, one in eight women between the ages of 35 and 65 have thyroid disease, most cases hypothyroidism. And as you age, the risk gets even higher: twenty percent of all women over 65 have thyroid problems.

Being female is also the biggest risk factor for Graves' disease, which afflicts women eight times more often than men. But

Graves' is not necessarily a condition of advancing age. Rather, most people develop Graves' disease between age 20 and 40.

## [H2]Personal and Family Health History

If you've ever had a problem with your thyroid in the past, your risk for thyroid disease now is higher than normal. For instance, even a brief thyroid problem after pregnancy makes you more vulnerable.

You are also at greater risk for an autoimmune thyroid disease if you have an autoimmune condition such as rheumatoid arthritis, scleroderma, lupus, or psoriasis. Two forms of thyroid disease, Hashimoto's disease and Graves' disease are also autoimmune illnesses. A discussion of other diseases that might raise your risk for thyroid disorders is later in this chapter.

The same risk applies to your family members. If a first-degree relative has had or has thyroid disease, then you are more likely to have a thyroid problem. For instance, if your mother had a bout of postpartum thyroid disease after delivery years ago, your risk is

slightly higher than someone whose mom didn't have the condition.

But remember, having a personal or family history of thyroid disease or autoimmune disease doesn't mean you will necessarily get thyroid disease. It simply means that your odds are slightly higher than the next person who doesn't have that history.

## [H2]Cigarette Smoking

It's safe to say that everyone knows about the toll that cigarettes have on the health of our lungs and hearts. But smoking cigarettes also causes serious problems for the thyroid. In fact, one recent study identified cigarette smoking as a predictor of Graves' disease.

## [E-Alert]

[SB]Giving up the cigarette habit is difficult, to say the least. And 21 percent of the U.S. population still lights up despite efforts to nix the habit. The Centers for Disease Control and Prevention offers a listing of useful Internet resources that can help you quit.

For information, check out:

<http://www.cdc.gov/tobacco/how2quit.htm>

[ESB]

For these reasons – among so many others -- people with a personal or family history of thyroid disease or autoimmune illnesses are generally advised not to smoke. And if you find out you do have thyroid disease, do everything you can to quit.

[H2]Hormonal Upheaval

Many women will develop thyroid disease during periods of tremendous hormonal shifts especially during or after pregnancy and just before or during menopause. Approximately 10 percent of all women will develop some form of thyroid disease after pregnancy. In fact, some women will develop a condition called postpartum thyroiditis, an inflammation of the thyroid gland that usually lasts just six to nine months, then disappears on its own. It is often the reason for postpartum depression.

Thyroid disease also occurs around the time of menopause. But because the timing of thyroid disease often coincides with these

hormonal shifts, many women go undiagnosed. Patients and physicians alike often assume that their symptoms are related to their reproductive hormones, not their thyroid.

## [H2]Exposure to Radiation

Say the word Chernobyl, and most people will recall the 1986 nuclear tragedy in the Ukraine. One of the subsequent results of that nuclear disaster was a higher incidence of thyroid disease in the region, including thyroid cancer in children. Studies suggest that exposing the thyroid gland to significant radiation can raise your risk for thyroid disease, including thyroid cancer. However, routine x-rays – as long as you're not pregnant – are unlikely to increase the odds for developing thyroid disease.

What is of concern is radiation done to the head, neck and throat, such as that used to treat cancers in those parts of the body. For instance, people with Hodgkin's disease who are treated with radiation are at greater risk for thyroid disease. In addition, studies have found that women who undergo multiple x-rays during pregnancy were more likely to give birth to low-weight babies, an

effect that the researchers attributed to the probable effect the x-rays had on the thyroid.

## [H2]Having a Medical Condition

Certain illnesses may actually suggest you have a thyroid problem.

For example, having fibromyalgia, a condition characterized by widespread pain and fatigue, or chronic fatigue immune deficiency syndrome (CFIDS), a similar condition marked by persistent and debilitating fatigue, may be due to an undiagnosed thyroid problem and suggest that you need to see an endocrinologist. The same is also true if you have an endocrine disorder, such as diabetes.

Thyroid problems are also more common in women who have endometriosis in which the tissue lining of the uterus grows outside the uterus, and those who have polycystic ovarian syndrome (PCOS), a condition characterized by irregular periods, excess facial and body hair, infertility, and tiny cysts around the ovaries. In addition, thyroid disease is more prevalent in people who have celiac disease, an intolerance of gluten.

The most apparent link between thyroid disease and other conditions occurs in autoimmune problems: people who already have an autoimmune disease, such as lupus, rheumatoid arthritis, or scleroderma, are at increased risk for thyroid disease. Other autoimmune diseases that raise your risk for a thyroid problem include:

[BL]Addison's disease, an adrenal gland condition characterized by low levels of cortisol, the stress hormone.

[BL]Type 1 diabetes, in which the pancreas stops producing insulin.

[BL]Myasthenia gravis, a neuromuscular condition that causes muscle weakness.

[BL]Pernicious anemia, a form of low red blood counts caused by an inability to absorb vitamin B12.

[BL]Vitiligo, a dermatological condition in which the skin loses its color and creates patches of white

[BL]Alopecia, a condition in which the immune system attacks the hair follicles, causing hair loss.

## [H2]Other Risk Factors

Many people are convinced that other factors are at play in the development of thyroid disease. Some suggest it might be linked to stress. Others wonder whether it might be the result of a viral or bacterial infection. Still others have suggested that thyroid disease is the result of physical trauma, which then physically damages the thyroid gland. Even premature graying and possibly, being left-handed, has been cited as risk factors for thyroid disease.

[E-Fact]

[SB]Our modern understanding of the thyroid is relatively recent. In fact, Theodor Kocher, a Swiss surgeon, was the first doctor to remove the thyroid gland for the treatment of goiter. It was Kocher who realized the profound impact of the thyroid on growth and body functions. In 1909, he received a Nobel Prize in medicine for his work on the thyroid gland.

[ESB]

No single risk factor however, has been identified as a definite cause for thyroid disease. All we know is that you are more likely

to develop thyroid problems if you have one or more of these risk factors.

## [H1]Things That Can Go Wrong

[NF]When it's healthy, the thyroid gland quietly performs its tasks like an unsung hero, a quiet but instrumental cog in the marvelous machine known as the human body. But when it gets diseased, the problems can become annoying at best, and life-threatening at worst.

According to the American Association of Clinical Endocrinologists, approximately 27 million people in the U.S. suffer from some form of thyroid disease. Half of those people are undiagnosed. And as you have probably already gathered by now, thyroid problems are especially common among women. More than eight out of ten thyroid patients are women.

Thyroid disease is actually several medical conditions, each with its own set of signs and symptoms. While we'll go into more detail about each one in coming chapters, we're going to provide an overview here of these different conditions.

## [H2]Hypothyroidism

Inexplicable weight gain. Fatigue. Memory loss. In people whose thyroid gland doesn't produce enough thyroid hormone, the result is a slowing down of all bodily functions, causing a condition called hypothyroidism.

Hypothyroidism is the most common form of thyroid disease.

Although it can be temporary in some cases, most often it is a permanent medical condition that requires lifelong medication and vigilance. People who have it may notice that they feel sluggish, depressed and unable to concentrate. But in its milder forms, they may notice nothing at all. Some people like Susan, had no symptoms at all. In fact, it was family history that inspired Susan to have her thyroid checked:

[CS]When Susan told her nurse practitioner that her sister had been diagnosed with Hashimoto's, the nurse practitioner suggested she get screened, even though she had no symptoms. Sure enough, they found that Susan had it, too. She was immediately put thyroid hormone replacement and notices she has more energy.

[ECS]

Many factors can cause an under active thyroid, but the most common one is an autoimmune disease called Hashimoto's thyroiditis (or disease). In an autoimmune disease, the body's immune system mistakenly treats healthy tissue as a foreign invader, and attacks its own body cells. But hypothyroidism can also be caused by inflammation, radioactive iodine treatments for hyperthyroidism, removal of the thyroid gland – possibly as the result of cancer -- certain medications, and problems with the pituitary gland.

[E-ssential]

[SB]Children who have Down's syndrome are more likely to develop hypothyroidism. The two conditions, as they appear in children, share similar features. Hypothyroidism, if severe, like Down's syndrome, can involve, mental retardation and slow growth. Treating the hypothyroidism can lessen some of the symptoms.

[ESB]

Some women develop hypothyroidism during or after pregnancy, and some children are born with a deficiency in hormone production or thyroid tissue. In some cases, the cause of the hypothyroidism may remain a mystery.

## [H2]Mild Hypothyroidism

Some cases of hypothyroidism are less clear cut. TSH levels may be normal or near normal, but you may still be experiencing all the symptoms of hypothyroidism. Some doctors may be uncertain about whether to treat you or not. This condition is known as mild, or subclinical, hypothyroidism.

Doctors who consider TSH levels only in making a diagnosis may say you do not have hypothyroidism at all. But those who consider the symptoms you're experiencing as well as your TSH levels may be more inclined to say you are hypothyroid and give you thyroid hormone replacement.

In any case, people who have mild hypothyroidism may have the same symptoms as those with hypothyroidism – fatigue, weight gain, and depression. Some experts believe that treating mild

hypothyroidism can prevent a patient from developing full-blown hypothyroidism.

## [H2]Hyperthyroidism

Unexplained weight loss. Nervousness. A fast heartbeat. In people whose thyroid glands are producing too much thyroid hormone, the body speeds up, and the result is a less well-known thyroid condition called hyperthyroidism.

Hyperthyroidism afflicts about one percent of the U.S. population, and affects women five to ten times more often than men. People who have it are jittery, anxious, and have trouble catching their breath. They may be plagued by insomnia and notice that their eyes bulge. In milder forms, hyperthyroidism may produce no symptoms at all.

Many cases of hyperthyroidism are caused by Graves' disease, an autoimmune condition that causes enlargement of the thyroid gland. But it may also be the result of the growth of several nodules in the thyroid, a single nodule, inflammation and enlargement of the thyroid gland (called thyroiditis), or the over

ingestion of iodine. Some people who are taking thyroid medication for hypothyroidism may become hyperthyroid too, if they take too much medication. In some women, hyperthyroidism may develop after pregnancy.

## [H2]Goiters

Before the introduction of iodized salt in the 1920s, the United States was plagued with goiter, which is an enlargement of the thyroid gland. Goiters may be the result of too much or too little thyroid hormone, and they are not cancerous. Some patients with a goiter may have hypo-or hyperthyroidism. Others may have normal thyroid tests and still have a goiter.

But goiters can develop if you have either hypothyroidism or hyperthyroidism. In people with under active thyroids, inadequate amounts of thyroid hormone cause TSH levels to go up, spurring the development of a goiter. Goiters that result from hypothyroidism in the U.S. are most often caused by Hashimoto's disease. Goiters may also be the result of an overactive thyroid brought on by Graves' disease, which causes the gland to swell and

enlarge. Elsewhere in the world, where iodine deficiencies are more common, the goiter may be caused by inadequate intake of iodine.

[E-Fact]

[SB]The Great Lakes region, the Midwest, and the mountainous regions of the interior U.S. were once called the “goiter belt,” areas of the country where goiter was prevalent because of an iodine deficiency. That problem was remedied with the introduction of iodized salt in the 1920s.

[ESB]

Goiters also occur when you have other thyroid problems. In some people, a goiter may be the result of a single nodule, or multiple nodules, a condition called multi-nodular goiter. You may also develop a goiter as the result of inflammation of the thyroid gland. Some women may develop a goiter during pregnancy as the result of a hormone called human chorionic gonadotropin (HCG).

[H2]Thyroid Nodules

Simply put, a nodule is a lump. The vast majority of thyroid nodules are small, benign, and harmless. They may occur as a single nodule or as a clump.

Most thyroid nodules are stealth invaders. You may not even notice you have a nodule until your doctor feels one in your throat during a routine physical. But if the nodule gets bigger, you may see it on your throat as a lump in the lower front of your neck.

Women may see it when they're applying makeup. Men may notice it while they're shaving or that their shirt collars are uncomfortably snug.

Large nodules may actually press against your windpipe or your esophagus, making it difficult for you to breathe or swallow. They may even cause hoarseness in your voice.

[E-ssential]

[SB]Even a benign nodule may sometimes warrant surgical removal. If the nodule becomes so big that it interferes with breathing and swallowing, surgery can remove the obstruction and

alleviate the pressure. You may also consider removing it if the nodule becomes large and unsightly.

[ESB]

Most nodules are benign (non-cancerous). But in some cases, the nodule may be cancerous. A single nodule in an otherwise healthy gland, a nodule that is hard to the touch or one that doesn't shrink after thyroid hormone treatments are all signs that your nodule may be cancerous. Nodules accompanied by enlargement of the lymph nodes in the neck may also indicate cancer. The bottom line is this: All nodules warrant medical attention and evaluation to pin down the exact cause and type of nodule.

[H2]Thyroid Cancer

There are four distinct types of thyroid cancer: papillary, follicular, medullary, and anaplastic. Each form develops in different cells of the thyroid gland and is distinct from the others. Although having cancer can be frightening to anyone, most cases of thyroid cancer are readily treated with surgery. And though having thyroid cancer

means you'll need regular monitoring to detect any recurrence, most patients go on to live normal productive lives.

[E-Alert]

[SB]Vigilance is everything when it comes to thyroid cancer, which has a recurrence rate of about 30 percent. Sometimes, the cancer returns decades after the initial diagnosis. Monitor your thyroid health regularly with routine visits to the doctor, blood tests, physical exams, and imaging techniques. Make these doctor visits a top priority.

[ESB]

The incidence of thyroid cancer has increased in recent years. And like most other thyroid problems, the condition is more common in women than men. Your risk also goes up if you were exposed to radiation as a child and if you have a family history of the disease.

[H2]Euthyroid Sick Syndrome

You're in the hospital for heart problems when the doctor announces your thyroid is off-kilter, too. These abnormal findings in the absence of thyroid disease is what experts call euthyroid sick

syndrome. People with this condition have not had thyroid problems in the past, but are now experiencing abnormalities because of another medical problem.

Euthyroid sick syndrome – sometimes called sick euthyroid -- can occur with many illnesses including cardiovascular disease, pulmonary disease, and renal problems. It may also occur with gastrointestinal disease, inflammatory conditions, and sepsis. Some people have it after surgery, trauma, or burns.

In most cases, levels of T3 are low, and reverse T3 is high, a condition called low T3 syndrome. It's possible that when the body is ill, reducing the amount of T3 – and thereby slowing bodily functions – is the body's way of conserving its resources. But in other cases, other thyroid hormones may be involved. For instance, if the euthyroid sick syndrome is severe, both T3 and T4 levels drop. And among the sickest patients, TSH levels become abnormally low.

The good news is, euthyroid sick syndrome is usually a temporary problem. As patients recover from their illness, their TSH levels

may rise to hypothyroid levels until thyroid hormone levels stabilize. Eventually, all thyroid hormones become normal again. Most experts agree that euthyroid sick syndrome is not hypothyroidism in spite of the drop in hormone levels. But many doctors are now finding that treatment with T3 has benefits. For instance, those who are suffering from heart failure may experience an improvement in their heart's pumping capacity after being treated with T3, even though they technically do not have a thyroid disorder. As a result, doctors these days are increasingly inclined to treat euthyroid sick syndrome.

[H1]A Great Imitator

[NF]Now that you know something about all the thyroid does for your health, you may be baffled why anyone would overlook a thyroid problem. After all, wouldn't you notice, if you were putting on weight without overeating? Or that your skin was drying out? Or that you felt more sluggish than usual?

In reality, the thyroid is often overlooked, ignored, or dismissed as the source of your suffering and symptoms. That's because the

symptoms of thyroid disease mimic those of other conditions as well as common lifestyle issues. You're gaining weight because you're getting older. Your skin is dry because it's winter, and the heat is on. You're sluggish because you're working long hours and raising kids. Many other factors in your life can make it easy for you to dismiss your symptoms as anything more than minor inconveniences.

[E-ssential]

[SB]To ensure correct diagnosis of thyroid disease – or any condition for that matter – be open and honest about all your symptoms. Also, look for a skilled and knowledgeable doctor. It won't guarantee a perfect diagnosis, but it will increase your odds.

[ESB]

At the same time, you may suspect your thyroid when in reality, your symptoms are actually the result of another medical condition. Many conditions produce symptoms that resemble those that occur in thyroid disease. (Note: As you go over this list, you'll notice that many of these conditions are the same ones that may

elevate your risk for thyroid disease.) Depending on the symptoms you have and the type of thyroid disease, these imitators might include:

[BL]Chronic fatigue immune deficiency syndrome

[BL]Fibromyalgia

[BL]Menopause

[BL]Depression

[BL]Anxiety and panic attacks

[BL]Arthritis

[BL]Sleep apnea

[BL]Diabetes and insulin resistance

[BL]Irritable bowel syndrome

If you notice that your neck looks larger than usual or recall that your mother once had thyroid problems, you may want to reconsider your thyroid as the source of your health problems. But remember, thyroid disease is not always apparent in your neck. Only a blood test can help determine whether an over active or under active thyroid is the culprit.

## [H1]Thyroid Disease and the Rest of Your Body

[NF]As you know, the thyroid gland affects virtually every aspect of your well-being. So it should be no surprise that a sick thyroid can wreak havoc on many aspects of your health and put you at risk for other health problems. The ways that thyroid disease can affect you is long and varied. Below is a partial list of some of the potentially major problems you might experience. Fortunately, most of these problems are resolved with prompt and proper treatment.

### [H2]Eye Disease

The eyes are sensitive to the effects of thyroid hormone. Nowhere is that more apparent than in people who have hyperthyroidism.

Almost everyone who has hyperthyroidism will develop a stare, in which the eyes appear to have a wide-eyed startled appearance.

And people who have Graves' disease often develop a separate condition called thyroid eye disease, or infiltrative op<sup>h</sup>thalmology.

With this condition, the eyes develop a distinct bulging of the eyeball. This protrusion occurs as a result of swelling in the

muscles around the eyes, which pushes the eyeball forward. Some people may have difficulty closing their eyes completely, which leads to redness and irritation of the eyeball.

[E-Fact]

[SB]During his presidency, George Bush and his wife Barbara both had hyperthyroidism as a result of Graves' disease. The former first couple provided the perfect example of the incidence of infiltrative ophthalmology, which occurs in about 50 percent of people with Graves' disease. Barbara had it, and George didn't. Incidentally, the couple's dog Millie also had hyperthyroidism.

[ESB]

In more severe cases, the eyes may not move in sync, and you may experience double vision. You may also notice that your eyes are more sensitive to light, and that they frequently feel gritty, dry and irritated.

[H2]Cholesterol Levels

In people who have hypothyroidism, cholesterol levels may become elevated. In particular, an under active thyroid raises levels

of LDL, or low-density lipoprotein, the “bad” cholesterol that promotes heart disease.

Unless you have a blood test, you won’t know that you have high cholesterol or that your LDLs have gone up. But it’s important to keep tabs on your cholesterol if you do have hypothyroidism.

Cholesterol is the waxy fat-like substance that clogs arteries, and too much of it can lead to heart disease, or even a heart attack.

Likewise, if blood tests show that you have high cholesterol, ask for a thyroid test as a follow-up. An under active thyroid can make it hard for your body to metabolize. In fact, the average cholesterol level for someone with hypothyroidism is 250 mg/dL, well above the 200 mg/dL recommended for good health. Treating thyroid disease can lower your cholesterol.

## [H2]Depression and Anxiety

The thyroid gland has a powerful effect on mood. Many people with thyroid disease may notice that they feel depressed.

Depression is a serious mood disorder that frequently involves feelings of sadness, emptiness, helplessness, and hopelessness.

You may withdraw from others and lose pleasure in activities that you once really enjoyed.

In people who have hyperthyroidism, the depression may coexist with major mood swings. Some people may experience bouts of mania and elation interspersed with erratic bouts of crying and sadness. The erratic moods may even cause bizarre behavior, atypical of your personality.

Some people with an overactive thyroid may experience anxiety, which can make you edgy, irritable, nervous, and fearful. Others may develop panic disorder that causes similar symptoms such as heart palpitations, trouble catching your breathing, numbness, and sweating or chills. In fact, some people may be diagnosed with panic disorder when the problem is really an overactive thyroid.

## [H2]Heart Problems

A faulty thyroid gland can take a toll on the heart as well. A recent study in the *Archives of Internal Medicine* found that even people with subclinical (mild) hypothyroidism had higher rates of heart disease. The risk for heart disease may be largely linked to higher

cholesterol levels caused by even the slightest decrease in thyroid hormone levels.

In people with hyperthyroidism, the heart may beat too rapidly or erratically, causing palpitations. When the heart beats too fast and too strong for a long time, you may experience heart failure, a potentially fatal condition that causes shortness of breath, swelling, and fluid in your lungs.

[E-ssential]

[SB]Your pulse tells you how many times your heart beats in a minute. To take your pulse, place two fingers gently on the artery on the palm side of your wrist. Do not use your thumb, which has its own pulse. Count the number of beats in 30 seconds, and multiply it by two. A normal pulse is 50 to 100 beats per minute.

To get your normal resting pulse, sit still for 10 minutes before taking your pulse.

[ESB]

In some cases, an overactive thyroid gland can lead to atrial fibrillation, an abnormal heart rhythm that raises your risk for

spontaneous blood clots that could lead to a stroke. This condition is most common in people who already have a heart problem. It is quite serious and warrants attention from a cardiologist.

## [H2]Weight Problems

For someone who always wanted to lose weight, an over active thyroid might seem like a blessing at first. People with hyperthyroidism are prone to weight loss, even as their appetites surge. Sometimes however, they may actually experience weight gain because they're eating so much to compensate for their body's demand for more energy. People who have a hypothyroidism tend to gain weight even as their appetite declines.

## [H2]Other Problems

These are just a few of the more serious ways that a malfunctioning thyroid can affect your health. But thyroid disease can also affect many other aspects of your health including your hair, skin, nails, digestive tract, and muscles. It can take a toll on your energy levels, your sleep habits, and your ability to concentrate. It can affect your fertility and make it difficult for you

to get pregnant. Over time and if it goes untreated, it can even affect your ability to function and perform your job.

In later chapters, we'll get into more details about how the thyroid gland affects other parts of your body. But as you can see, the impact of the thyroid is rather significant and can affect your health in many ways. Again, the key to preventing these problems from worsening is prompt diagnosis and treatment.

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