

Key Nutrients to Support Optimal Thyroid Health

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STORY AT-A-GLANCE

- › Thyroid hormones are crucial regulators of metabolism, affecting nearly every physiological process. Imbalances can lead to various health issues, including hypothyroidism, hyperthyroidism, goiter and thyroid cancer
- › Key nutrients for thyroid health include vitamin D, zinc, selenium, iodine, magnesium, vitamin B12 and high-quality protein. A balanced diet rich in these nutrients supports optimal thyroid function
- › Healthy saturated fats from grass fed butter, ghee, tallow, coconut oil and full-fat dairy products also help support thyroid health. Avoid polyunsaturated fatty acids (PUFAs) and limit monounsaturated fats (MUFAs), both of which can interfere with thyroid function when consumed in excess
- › Foods to avoid to maintain optimal thyroid health include goitrogens, gluten and processed foods. These can interfere with thyroid function and hormone production
- › Additional strategies for thyroid health include avoiding nighttime light exposure, optimizing bile acid synthesis, minimizing exposure to certain chemicals and normalizing your cortisol and estrogen levels

Your endocrine system is a complex network of glands and organs that produce hormones, the chemical messengers vital for regulating numerous bodily functions. Among the many hormones that this system produces, thyroid hormones are perhaps the most important, as they're key regulators of your metabolism and play an indispensable role in nearly every physiological process within your body.

An imbalance in your thyroid hormones can have far-reaching effects on your health. Thyroid disorders affect approximately 200 million people worldwide,¹ with common conditions including hypothyroidism (underactive thyroid), hyperthyroidism (overactive thyroid), goiter (enlarged thyroid) and thyroid cancer.²

Given the thyroid's influence on numerous bodily functions, an imbalance can also trigger or exacerbate a wide range of issues in other parts of your body. These may include fibromyalgia, irritable bowel syndrome, eczema, gum disease and various autoimmune disorders, to name a few.

Fortunately, thyroid hormone imbalances are both treatable and preventable. Your diet is crucial for maintaining this gland's healthy function. Understanding which foods are beneficial for your thyroid and which ones can disrupt its balance is essential for supporting not only your hormonal health but also your overall well-being.

The Basics of Thyroid Function

The thyroid gland, a butterfly-shaped organ located on your neck just under your voice box, produces the hormones triiodothyronine (T3) and thyroxine (T4). These interact with other hormones, such as insulin, cortisol and sex hormones, as well as various organs, including the cardiovascular, nervous, digestive and reproductive systems, contributing to their proper function.³

The hormone-secretion process begins with the hypothalamus, which releases thyrotropin-releasing hormone (TRH). TRH stimulates the pituitary gland to secrete thyroid-stimulating hormone (TSH), which then prompts the thyroid gland to release T4. Approximately 90% of the thyroid hormone released is in the inactive form of T4.

Your liver plays a crucial role in converting T4 into T3, the active form, with the help of specific enzymes. T3 is essential for regulating the metabolism of every cell in your body, directly influencing processes such as fat burning and energy production.

When everything is working properly, your body makes just enough T4 to be efficiently converted to T3. However, there are many factors that can inhibit this process, including

impaired liver function, stress and excessive levels of [cortisol](#), [estrogen](#), [polyunsaturated fatty acids \(PUFAs\)](#) and [endotoxins](#).

Inefficient conversion of T4 to T3 can lead to hypothyroidism, which affects more people in the U.S. than hyperthyroidism.⁴ Hypothyroidism is characterized by a slowed metabolism, contributing to symptoms such as weight gain, fatigue, sensitivity to cold, dry skin, hair loss, bowel problems, edema, brain fog, anxiety and depression.

How to Assess the Health of Your Thyroid

A simple method to assess your thyroid function is by measuring your body temperature upon waking in the morning. This approach works because higher tissue levels of T3 correlate with a faster metabolic rate, resulting in elevated body temperature and pulse rate.

If your morning body temperature is around 98 degrees Fahrenheit, it means you have a healthy thyroid. By midday, aim for a temperature of approximately 98.6 degrees Fahrenheit, accompanied by a pulse rate between 60 and 100 beats per minute, showing a healthy metabolic response.

Having a consistently low body temperature and pulse rate could mean that you have a sluggish metabolism. If your temperature drops after breakfast, that's another bad sign indicating reliance on stress hormones, which can be harmful to your health.

If you're having your doctor assess your thyroid function, a common test they might order is the TSH test, which measures the level of TSH in your blood.⁵ It's important to note that while a low TSH level is generally desirable, it can sometimes be suppressed by cortisol and adrenaline. Checking your temperature and pulse after meals provides further insights into your thyroid function.

Even with normal lab results, abnormal body temperature and pulse readings can indicate subclinical hypothyroidism. Additionally, a cholesterol test can offer valuable clues. Elevated cholesterol levels (mid- to high-200s) may indicate poor thyroid

conversion of cholesterol into steroid hormones. Low cholesterol levels, on the other hand, could signal an underlying infection.

Important Nutrients for Your Thyroid Health

Getting your thyroid health sorted out might seem challenging with all the factors that can potentially affect it. Focusing on dietary adjustments is a good starting point, as it's a noninvasive and foundational approach that can yield significant benefits without the need for medication or more intensive interventions. I recommend optimizing your intake of these nutrients to support healthy thyroid function:

Vitamin D – Vitamin D plays a supportive role in thyroid function, though its exact impact is still being researched.

According to a comprehensive review⁶ published in the journal *Cureus*, optimal vitamin D levels help lower anti-thyroid antibodies in autoimmune conditions and reduced TSH levels in hypothyroid patients, which indicates an improvement in their thyroid hormone production.

Vitamin D may also have protective effects against thyroid cancer progression. The researchers concluded:⁷

“The overwhelming amount of evidence pointed to a correlation between vitamin D deficiency and an increased risk of having or developing hypothyroidism, elevated thyroid antibody titers and thyroid cancer ... Normal physiological vitamin D concentrations appear to be required for optimal thyroid function.”

The most efficient way to increase your vitamin D levels is through sensible sun exposure. I recommend exposing as much skin as you can to the sun for at least an hour daily, ideally around solar noon, which is from 12:30 to 1:30 PM for those on Daylight Saving Time because of the perversion of the time system. Timing your walk

during this time allows you to get additional benefits of UVB and near-infrared solar radiation.

Zinc – Zinc is an essential mineral that plays a role in thyroid hormone synthesis, metabolism and function. A deficiency in this nutrient has been linked to hypothyroidism. Researchers have also found a positive correlation between zinc concentration and volume of thyroid, as well as thyroid antibodies in patients with thyroid-related autoimmune conditions.⁸

Additionally, patients diagnosed with malignant tumors, including thyroid cancer, have been found to exhibit significantly reduced serum zinc concentration, indicating the protective action of this mineral on the thyroid gland. Increased zinc intake has been found to help improve thyroid function by reducing TSH levels and promoting the production of T3 and T4 hormones.⁹

Some good dietary sources of zinc include grass fed meat and dairy products, organic eggs from chickens fed a low-PUFA diet, broccoli and blueberries.¹⁰ While nuts and seeds are often recommended for their zinc content, I advise against relying on them, as they contain high amounts of PUFAs, which can counteract any benefits they may have to offer.

Selenium – The thyroid gland has the highest concentration of selenium in your body. It plays a role in thyroid hormone biosynthesis and metabolism, and a deficiency has been linked to increased thyroid volume (particularly in women), decreased conversion of T4 to T3, as well as an increased risk of autoimmune hypothyroidism and Graves' disease.¹¹

Researchers have also implicated low selenium levels to an increased risk of thyroid cancer. According to an article published in *Frontiers in Endocrinology*:¹²

“Many data support the hypothesis that low levels of Se [selenium] are associated with an increased incidence of thyroid cancer, especially PTC [papillary thyroid carcinoma] ...

The anticancer effect of Se can selectively induce apoptosis of cancer cells without causing significant damage to normal cells. Therefore, the fluctuation of Se levels can affect the normal physiological process of thyroid gland and promote the development of pathological processes, including cancer.”

You can obtain selenium from organ meats, especially beef liver, organic eggs, grass fed meat and dairy, and bananas. Brazil nuts are often recommended as a rich source of selenium, but like other seeds and nuts, they're high in PUFAs, which is why I advise against using them as your primary source.

Iodine – Iodine and selenium play a synergistic role in your body. Excessive iodine levels can reduce selenium concentration and selenoprotein production in the thyroid, which can impact thyroid function, as selenoproteins are important in the conversion of thyroid hormones and in protecting the thyroid gland from oxidative stress. It also helps mitigate the effects of excess iodine, as it protects your thyroid gland from inflammation, scarring and damage.¹³

Conversely, low iodine intake is associated with excessive levels of selenium in the thyroid, higher selenoprotein expression and elevated blood selenium markers. Excessive selenium levels then exacerbate the effects of iodine deficiency, which include decreased thyroid hormone production and thyroid dysfunction. The mentioned *Frontiers in Endocrinology* study highlighted that “[a]dequate iodine levels should be established before increasing selenium intake.”¹⁴

Foods that contain higher amounts of iodine include sea vegetables, such as kelp, kombu and wakame.¹⁵ Kelp has the highest amount of any food and just one serving gives you four times the recommended daily allowance. Organic, grass fed butter is another good source of iodine. Iodized salt can also help increase your levels if you don't avoid eating it in the mistaken belief that it's bad for your heart.

Magnesium – According to a study¹⁶ published in *Biological Trace Element Research*, “Magnesium is an essential cofactor in numerous enzymatic reactions involved in thyroid hormone synthesis and metabolism. It facilitates the conversion of thyroxine

(T4) to triiodothyronine (T3) ... Magnesium also influences the sensitivity of thyroid hormone receptors in target tissues.”

The researchers also found that individuals with low magnesium levels exhibit high levels of anti-thyroid peroxidase antibody (TPOAb) and anti-thyroglobulin antibody (TGAb), which are markers for thyroid dysfunction.

Some good dietary sources of magnesium include dark chocolate, well-cooked dark leafy greens, well-cooked potatoes (peeled and boiled) and plain organic yogurt, to name a few.¹⁷ Avocados are also rich in magnesium, but they’re also high in monounsaturated fat (MUFAs), which can harm your metabolic function if consumed in excess.

Vitamin B12 – Low vitamin B12 levels have been associated with a higher risk of autoimmune thyroid diseases (AITD) and high levels of TPOAb.¹⁸ A study in the journal *Endocrine, Metabolic & Immune Disorders* noted, “The vitamin B12 level correlates significantly to AITD. The concentration of vitamin B12 should therefore be determined in patients with autoimmune thyroiditis ...”

Vitamin B12 is found almost exclusively in animal foods, such as grass fed beef and beef liver, lamb, organic eggs and grass fed dairy products. The few plant foods that are sources of B12 are actually B12 analogs that block the uptake of true B12, so do not make the mistake of thinking you can rely on vegan sources for all your B12 needs.

If you rarely eat the foods listed, consider using nutritional yeast. It’s high in B12 and has a cheesy flavor that can work well on any number of dishes. One 16-gram serving (just over 2 tablespoons) provides 24 micrograms of natural vitamin B12.¹⁹ Advancing age can diminish your body’s ability to absorb B12 from food, so you might want to consider supplementation as you get older.²⁰

High-quality protein – Protein helps support the activity of the hypothalamic-pituitary-thyroid (HPT) axis, which in turn plays a role in thyroid function.

An animal study²¹ published in the Turkish Journal of Medical Sciences showed that decreased dietary protein intake disrupts the HPT axis by reducing the production of TRH and TSH, which then leads to lower levels of T3 and T4, impairing thyroid function. Conversely, a high-protein diet has been shown to increase T3 levels.

Protein deficiency during pregnancy has also been shown to negatively impact the thyroid development of the fetus, leading to smaller thyroid glands and potential thyroid issues in newborns. Moreover, certain amino acids found in high-protein foods, such as tyrosine, are directly involved in the synthesis of thyroid hormones, underscoring the importance of adequate protein intake for optimal thyroid function.²²

Some of the protein sources I recommend include grass fed beef, whether ground or in collagen-rich cuts like beef shank, beef cheek and oxtail. Low-PUFA pork hock and ground bison are good meat choices as well. Incorporating bone broth, collagen powder or gelatin powder into your diet can also provide essential amino acids and high-quality protein to further support your thyroid and overall well-being.

Healthy saturated fats – In a 2021 study²³ published in the journal Nutrition, researchers evaluated the impact of various food groups and nutrients on thyroid hormone levels, noting a “positive effect” from the frequent consumption of foods high in saturated fats on thyroid function. Good sources include grass fed butter, ghee, tallow and coconut oil.

Full-fat whole milk, ideally raw, and the dairy products made from it, such as yogurt and cheese, are also good sources of saturated fats. However, make sure the cheese you’re buying is made using animal rennet, since most cheeses sold in the U.S. are now made using a genetically modified rennet called Fermentation-Produced Chymosin (FPC).

To learn more about GMO cheese and how to spot it, check out [“Genetically Modified Ingredients in Most U.S. Cheeses.”](#)

Polyphenols – The antioxidative actions of polyphenols found in fruits and vegetables can help protect your thyroid gland from oxidative damage.²⁴ Seasonal,

ripe fruits are excellent choices, as are fresh fruit juices like organic orange juice (that is sweet, not bitter), homemade or high-quality lemonade, and grape juice.

It's also ideal to incorporate vegetables into your diet, but make sure to cook them thoroughly to increase their nutrient absorption and minimize their potential goitrogenic compounds.

Keep in mind that fruits and vegetables are rich in fiber, which is a complex carbohydrate. While complex carbs are beneficial for the gut microbiome, I don't recommend filling your diet with them right away. If you have an impaired microbiome, complex carbs can worsen your health by feeding the pathogenic bacteria in your gut.

These pathogenic bacteria produce an endotoxin called lipopolysaccharide, which can impair cellular energy production. If you're experiencing bowel issues after eating complex carbs, that means your gut isn't well-equipped to digest them.

To address this problem, you need to improve your mitochondrial function and their ability to produce enough cellular energy. Once you achieve that, you can benefit from complex carbohydrates again.

Until then, slowly incorporate complex carbs into your diet. Start with fresh fruit juices, and once your body can tolerate that, move on to healthy, whole ripe fruits and then onto other more complex carbohydrates.

Avoid These Substances to Protect Your Thyroid Health

Optimizing thyroid health isn't just about incorporating beneficial foods into your diet — it's equally important to be aware of potential dietary pitfalls, as certain foods and compounds can interfere with thyroid function and hormone production. To manage or avoid thyroid issues, consider limiting or eliminating the following foods from your diet:

Goitrogens – Goitrogens are substances that can interfere with thyroid function by inhibiting the uptake of iodine or interfering with thyroid hormone production. They are found in many plant-based foods and can contribute to a higher risk of goiter or exacerbate thyroid conditions, especially when consumed in large amounts or if iodine intake is insufficient.²⁵

Some common goitrogenic foods include raw cruciferous vegetables (such as broccoli, cauliflower and cabbage), soy-based products (such as soy milk, tofu, tempeh, miso and soy sauce) and millet.²⁶ This is why I highly recommend cooking your vegetables thoroughly.

Gluten – Known for its inflammatory properties, gluten is found in grains like wheat, rye, barley and triticale, as well as any foods containing these as ingredients.²⁷

Research²⁸ shows that adopting a gluten-free diet helps reduce inflammation of the thyroid gland and improve its function, especially in individuals with Hashimoto's thyroiditis, an autoimmune condition that causes goiter and hypothyroidism.²⁹

Processed foods – Processed foods are loaded with health-degrading ingredients, such as added sugar (especially fructose), genetically engineered ingredients, unhealthy vegetable oils, processed salt, bromines and other chemical additives. They're also a major source of PUFAs, including linoleic acid, which can interfere with your cell's ability to use active thyroid hormone.

Damaged fats in ultraprocessed foods can elevate your estrogen levels, which can interfere with normal thyroid function. Hence, avoiding processed foods is a foundational strategy for preserving your thyroid health. To encourage the conversion of T4 to T3, eat a diet of whole, unprocessed or minimally processed foods.

Alcohol – Alcohol can inhibit the release of TRH and TSH, leading to decreased thyroid hormone levels. It can also increase inflammation and oxidative stress,³⁰ which can further impair thyroid function and exacerbate symptoms of thyroid disorders.

Excessive fiber – If you have a thyroid condition that requires medication, it's important to monitor your fiber intake, as consuming too much fiber can interfere with the absorption of thyroid medicines.³¹ Also be mindful of your coffee and green tea intake, as these beverages have been found to affect the absorption of thyroid drugs as well.³²

Lectins – Lectins can increase gut permeability (leaky gut) and disrupt the gut microbiome, which can trigger or exacerbate autoimmune responses in conditions like Hashimoto's thyroiditis³³ and Graves' disease.³⁴ Some of the highest sources of lectins are uncooked beans, peanuts, cashews, whole grains and raw nightshade vegetables.³⁵

More Ways to Protect Your Thyroid Health

In addition to dietary tips, here are additional strategies you can implement to support your body's optimal thyroid hormone production:

- 1. Avoid exposure to light at night** – Nighttime light exposure, such as from shift work or jet lag, interferes with circadian rhythms, potentially increasing the risk for thyroid cancer by affecting hormone levels and metabolic processes.³⁶
- 2. Optimize bile acid synthesis** – Bile acids upregulate the conversion of T4 to T3. Taurine, pregnenolone and progesterone are all known to facilitate bile acid synthesis.
- 3. Avoid fluoride, perchlorate and flame-retardant chemicals** – These chemicals have a very deleterious effect on thyroid hormone. Polybrominated diphenyl ethers (PBDEs) are commonly found in household dust, so clean often to keep dust to a minimum.

Meanwhile, perchlorate is a chemical frequently found in tap water (along with fluoride), so a water purification system is a good health investment. Perchlorate prevents iodide uptake at the thyroid gland, and your thyroid requires iodide to

produce thyroid hormone.³⁷ So if the perchlorate prevents iodide uptake, it reduces the amount of thyroid hormones in your body.

4. **Lower excessive estrogen levels** — In my [previous interview with Keith Littlewood](#), a U.K. clinician specializing in endocrine health, he noted that estrogen dominance and estrogen excess could be among the primary causes of thyroid dysfunction. I urge you to check our discussion to learn more about the connection of estrogen to thyroid health and how you can counteract its effects using progesterone.
5. **Maintain normal cortisol levels** — Excess cortisol, much like estrogen, can disrupt optimal thyroid function. A study³⁸ in Cureus revealed that elevated cortisol levels correlate with decreased T4 and T3 thyroid hormone levels, alongside increased TSH levels. These findings underscore the importance of managing cortisol levels, a topic I delve into further in my article [“Key Strategies to Reduce Your Cortisol Levels.”](#)

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