

A FUNCTIONAL MEDICINE APPROACH TO HYPOTHYROIDISM

Dr. Lisa James

FUNCTIONAL HEALTH & NUTRITION



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A WORD FROM....

Lisa James, DFM, PhD
Doctor of Functional Medicine & Blood Chemistry

The functional health approach to hypothyroidism goes beyond simply managing symptoms with thyroid hormone replacement. It seeks to identify and address the root causes of thyroid dysfunction, such as chronic inflammation, nutrient deficiencies, autoimmune triggers (like Hashimoto's thyroiditis), gut imbalances, adrenal stress, and environmental toxin exposure.

By taking a systems-based, individualized approach, functional health practitioners aim to restore optimal thyroid function through targeted nutrition, lifestyle modifications, advanced lab testing, and personalized supplementation. This comprehensive strategy not only supports the thyroid but promotes whole-body wellness.

Dr. Lisa James



A HOLISTIC GUIDE TO HYPOTHYROIDISM

Your thyroid is a butterfly-shaped gland located in your neck. It produces two thyroid hormones, thyroxine (T4) and triiodothyronine (T3) which are responsible for regulating your body's metabolism, heart rate, temperature and energy levels. Hypothyroidism occurs when your thyroid doesn't produce enough of these hormones.

SYMPTOMS OF HYPOTHYROIDISM

- Fatigue & weakness
- Unexplained weight gain
- Cold sensitivity
- Constipation
- Dry skin & hair
- Hair thinning or hair loss
- Depression/mood changes
- Poor memory & concentration
- Irregular or heavy periods
- Unexplained infertility
- Fluid retention/puffiness
- High cholesterol
- High blood pressure
- Slow heart rate (bradycardia)
- Enlarged thyroid (goiter)





UNDERSTANDING YOUR TEST RESULTS

Thyroid Stimulating Hormone (TSH) - TSH is a hormone produced by your brain that tells your thyroid to make T4 and T3. Elevated TSH indicates that your thyroid may be underactive as your brain is telling it to produce more hormones. Low TSH indicates that your thyroid may be overactive and producing too many thyroid hormones. Optimal range (1.0-2.0).

Free Thyroxine (fT4) - Free T4 is the portion of thyroxine that is not attached to proteins in your blood and is available to be converted into the active hormone T3. Low fT4 is an indicator of hypothyroidism. Optimal range (1.1-1.4)

Free Triiodothyronine (fT3) - Free T3 is the active thyroid hormone that is converted from T4. Low fT3 can be due to hypothyroidism or poor conversion of T4 to T3, caused by nutrient deficiencies, inflammation or stress. Optimal range (3.2-4.2).

Reverse T3 (rT3) - Reverse T3 is an inactive form of the thyroid hormone T3 (triiodothyronine). It is produced when the body converts T4 (thyroxine) into rT3 instead of active T3, often in response to stress, illness, inflammation, or nutrient deficiencies. High levels of reverse T3 can block active T3 from binding to receptors, leading to symptoms of hypothyroidism even when TSH and T4 levels appear normal. Optimal range (<15)

Thyroid antibodies (TPOAb, TGAb) - Thyroid antibodies are produced when your body's immune system mistakenly attacks your thyroid gland. Elevated antibodies can indicate an autoimmune thyroid condition known as Hashimoto's, which is the most common cause of hypothyroidism.

WHAT CAUSES HYPOTHYROIDISM?



Hashimoto's

The most common cause of hypothyroidism in developed countries is an autoimmune condition called Hashimoto's thyroiditis. In this condition, antibodies attack either the protein thyroglobulin or the enzyme thyroid peroxidase which are needed to produce thyroid hormones. The result is inflammation and damage to the thyroid as well as reduced T4 and T3 production.



Nutrient deficiencies

Your thyroid is reliant on certain nutrients to produce hormones and convert T4 to T3. Deficiencies in iodine, selenium, zinc, iron, vitamin A, and vitamin D can contribute to hypothyroidism.



Chronic stress

Stress hormones like cortisol can interfere with thyroid function in a number of ways. Cortisol can disrupt the communication between the brain and thyroid, reducing thyroid hormone output. It can also interfere the conversion of T4 to T3 and increase inflammation in the body.



Inflammation

Inflammation can promote the conversion of T4 into reverse T3 (rT3), an inactive form of T3 that blocks the action of T3 on cellular receptors. This can lead to symptoms of hypothyroidism, as the body has less active T3 available to regulate metabolism and other functions.



Undereating

Low calorie diets can signal the body to conserve energy, leading to a slowdown in metabolic processes. This can reduce the production of thyroid hormones and impair their conversion, contributing to hypothyroidism. In addition, low carb diets are known to impact thyroid function due to the role that carbohydrates play in thyroid hormone production.

SUBCLINICAL HYPOTHYROIDISM

Subclinical hypothyroidism is where TSH levels are mildly elevated but T4 and T3 are within range. The elevation in TSH suggests that the body is working harder to produce thyroid hormones but has not yet reached the threshold for hypothyroidism. It's important to investigate and treat subclinical hypothyroidism to prevent it from progressing.

CELLULAR HYPOTHYROIDISM

If you're experiencing symptoms of hypothyroidism but your thyroid results appear normal, then you may have cellular hypothyroidism. This is where your thyroid is making enough hormones, but these hormones can't be transported into your cells to do their job. Common causes of cellular hypothyroidism include oxidative stress, deficiencies in B vitamins, carnitine, iron, magnesium & antioxidants, low calorie diet, insulin resistance & metabolic syndrome.

THYROID HEALTH & YOUR GUT

Your gut and thyroid health are intricately interconnected. Factors such as food sensitivities, leaky gut and dysbiosis (microbial imbalance) can disrupt your immune function and predispose you to autoimmune conditions like Hashimoto's. They can also create systemic inflammation which can affect thyroid function. Your gut is also responsible for absorbing essential nutrients for thyroid health. For this reason, it's important to investigate and address any underlying gut dysfunction when it comes to managing your hypothyroidism.



IMPORTANT FACTS ABOUT THYROID ANTIBODIES

- Thyroid antibodies are often the first markers to go out of range in early thyroid disease, however are usually the last markers to be tested.
- Hashimoto's isn't diagnosed until thyroid antibodies have begun to affect thyroid function by increasing TSH and decreasing T4 & T3.
- Thyroid antibodies can show up 5-10 years before TSH moves out of range. Routine screening gives an opportunity for early intervention and prevention of Hashimoto's.
- There is no pharmaceutical treatment for thyroid antibodies, which is why they are not routinely tested for. Thyroxine helps with symptom management but does not address the autoimmune process. Studies have found many effective natural interventions for lowering thyroid antibodies.

GLUTEN AND THYROID HEALTH

Gluten proteins can resemble proteins found within the thyroid gland. In those with a compromised gut barrier, celiac disease or gluten sensitivity, the body forms an immune reaction against gluten and then may mistakenly begin attacking the thyroid gland. This process is called molecular mimicry and is a known driver of autoimmune diseases. For this reason, going gluten-free can often be beneficial in reducing thyroid antibodies.

NUTRITIONAL SUPPLEMENTS

Iodine

Thyroid hormones are made from iodine, making it one of the most important nutrients to consider in hypothyroidism. It should only be supplemented with the help of a practitioner, as it has the potential to worsen thyroid antibodies in excess.

Selenium

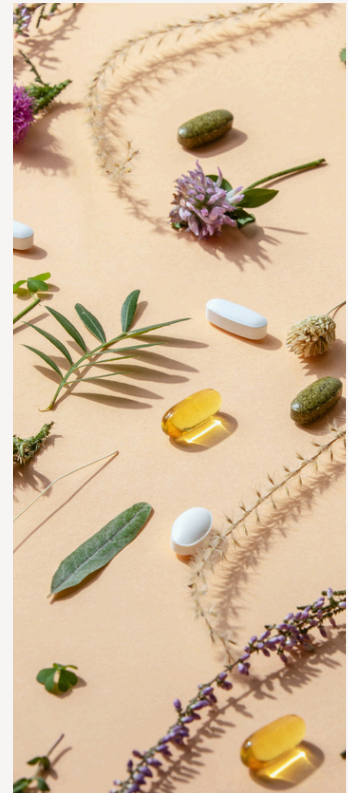
Selenium is an antioxidant nutrient that plays a role in the conversion of T4 to T3. A 2024 systematic review found that selenium is safe and effective for treating Hashimoto's by reducing TPO antibody and lowering TSH [1].

Myo-inositol

Inositol is a type of sugar that has been shown to support thyroid health. A 2020 study found that supplementing with 83mcg of selenium & 600mg of myo-inositol in people with Hashimoto's decreased TSH by 38% after 12 months of treatment [2].

Vitamin D

Vitamin D deficiency is a known risk factor for Hashimoto's [3]. A 2023 study found that vitamin D supplementation can significantly decrease thyroid antibodies TPOAb & TGAb [4].



HERBAL MEDICINE

***Nigella sativa* - Black cumin**

Black cumin possesses anti-inflammatory, antioxidant and immunomodulatory properties, making it a beneficial herb for complex autoimmune conditions such as Hashimoto's. A 2016 study found *Nigella sativa* supplementation to be effective at reducing TSH and TPOAb, increasing T3, and reducing BMI, waist-to-hip ratio and body weight when compared to placebo [5].

***Withania somnifera* - Ashwagandha**

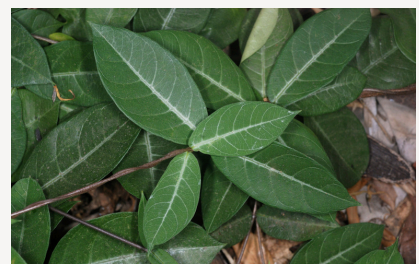
Withania is a powerful adaptogenic herb that helps to reduce the physiological effects of stress on the body. A 2018 study found withania to reduce TSH and improve T4 & T3 levels in patients with subclinical hypothyroidism [6]. A 2023 systematic review found that Nigella, ashwagandha and peppermint can improve the signs and symptoms of primary hypothyroidism [8].

***Hemidesmus Indicus* - Indian sarsaparilla**

Hemidesmus is another immunomodulatory herb that helps to balance the immune system and reduce thyroid antibodies.

***Curcuma longa* - Turmeric**

Turmeric has powerful anti-inflammatory and antioxidant properties, making it an ideal herb for protecting your thyroid gland and supporting thyroid function.



DIETARY RECOMMENDATIONS

A 2024 study highlighted the effectiveness of both the Mediterranean diet and gluten-free diet in reducing inflammation and improving thyroid function in those with Hashimoto's. While both diets led to an increase in FT3 levels and a reduction in antibodies, the Mediterranean group showed the most significant improvements [7].

EAT MORE	EAT LESS OR AVOID
• Colourful fresh fruit and vegetables • Wholegrains and legumes such as oats & brown rice • Nuts and seeds such as hempseeds, brazil nuts & cashews • Healthy fats including extra-virgin olive oil & fatty fish like salmon & sardines • Quality protein sources including tempeh, tofu, beans, eggs, organic meats in moderation • 3x brazil nuts daily for selenium	• Refined grains like white bread, flour, pasta • Added sugars like in sugary drinks, baked goods & sauces • Processed meats such as deli meats, bacon & sausages • Trans fats such as margarine & fried foods • Alcohol • Limit goitrogenic foods such as soy and cruciferous vegetables. Ensure they are cooked before eating

MEAL IDEAS

Breakfast

- Overnight oats with chia seeds, walnuts and stewed apples
- Banana buckwheat pancakes with Greek yoghurt and blueberries
- Avocado and salmon on gluten-free sourdough

Lunch

- Grilled chicken salad with leafy greens, fresh herbs, feta, nuts and an olive oil dressing
- Falafel gluten free wrap with hummus, fresh herbs and vegetables
- Vegetable and lentil soup

Dinner

- Grilled salmon with roast vegetables
- Chicken stir fry with soba noodles
- Chickpea and vegetable coconut curry

Snacks

- Vegetable sticks with hummus
- Handful of mixed nuts
- Rice cakes with avocado
- Greek yoghurt with berries
- Apple slices with almond butter



OPTIMIZING YOUR LIFESTYLE

Your daily lifestyle is equally as important as your diet when it comes to managing hypothyroidism

Exercise - Ensure that you're doing at least 20-40 minutes of moderate-intensity exercise everyday. Moderate-intensity exercise includes anything that increases your heart rate and breathing, but still allows you to carry on a conversation. This could include a fast-paced walk, bike ride, swim, pilates, climbing stairs, or even household chores like gardening or sweeping. If you have physical limitations, you can opt for chair exercises, short controlled walks, Tai Chi, Qigong or resistance band training.

Stress - When your body is in fight or flight mode, stress hormones put strain on your cardiovascular system. Practice daily mindfulness activities like meditation, journaling, deep breathing, Qigong or yoga and minimize stressors as much as you can. This could mean changing your routine, setting boundaries or seeking the help of a therapist.

Reduce toxin exposure - Choose natural cleaning products, skincare, cosmetics and fabrics. Avoid artificial fragrances like perfumes. Ensure plenty of ventilation and incorporate plants that improve indoor air quality such as Aloe Vera, English Ivy, Peace Lily or Spider Plant.

Alcohol - Alcohol is transformed into a highly toxic substance called acetaldehyde in your body. It impairs detoxification and is directly toxic to thyroid cells. Limit alcohol consumption as much as possible.

Smoking - Smoking, whether it be cigarettes or vaping, adds a huge toxic load to your body and can significantly disrupt your thyroid. For support visit <https://www.smokefree.gov>

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9. Blood test reference ranges are typically measured in US or international units:
 - a. TSH (μ IU/mL (micro-international units per milliliter)
 - b. Free T3 (pg/mL picograms per milliliter)
 - c. Free T4 (ng/dL (nanograms per deciliter)
 - d. Reverse T3 (ng/dL (nanograms per deciliter)