

## Guillermou

In this comprehensive vision presented in this relevant report, a healthy intestinal microbiota not only has beneficial effects on the activity of the immune system, but also on thyroid function. The microbiome affects the proper functioning of the thyroid gland, and the existence of the gut-thyroid axis is discussed in the context of both thyroid diseases and gut dysbiosis. Thyroid and intestinal diseases predominantly coexist: Hashimoto's thyroiditis (HT) and Graves' disease (GD) are the most common autoimmune thyroid diseases (AITD) and often coexist with celiac disease (CD) and non-celiac wheat sensitivity (NCWS).

This may be explained by damage to the intestinal barrier and consequent increase in intestinal permeability, allowing antigens to pass more easily and activate the immune system or cross-react with extraintestinal tissues, respectively. Dysbiosis has not only been found in AITD. The intestine is a target organ of thyroid hormone (TH) that exerts its action through the nuclear receptor for thyroid hormone 1 (TR1) expressed on intestinal epithelial cells. Disruption of gut microbial homeostasis (dysbiosis) is associated with autoimmune thyroid disease (AITD), including Hashimoto's thyroiditis, Graves' disease, and Graves' orbitopathy.

The gut microbiota largely regulates the homeostasis and development of immune cells. It modulates both the innate and adaptive immune systems, including outside the intestine, and is essential in the development of gut-associated lymphatic tissue (GALT), where more than 70% of the entire immune system is located. . GALT plays an important role in the development of tolerance to autoantigens by controlling its toll-like receptors (TLRs) in the intestinal mucosa.

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There is a positive correlation between the concentration of short-chain fatty acid butyrate and the number of regulatory T cells (TREG), which are key mediators of immune tolerance, as well as with lower concentrations of proinflammatory Th-17 cells. SCFAs can strengthen intercellular tight junctions along with thyroid hormones. The immune system itself influences the composition of the gastrointestinal microbiota, underscoring the symbiotic relationship. Probiotics have shown beneficial effects in thyroid diseases and may have a positive effect on trace elements such as selenium, zinc and copper.

Additionally, microbes function as a reservoir for T3 and can prevent thyroid hormone fluctuation and therefore may reduce the need for T4 supplementation. The importance of maintaining the intestinal microbiota in a normal state arises from the fact that with increased permeability of the intestine due to dysbiosis, lipopolysaccharides from gram-negative bacteria can enter the bloodstream and contribute to the destruction of the thyroid gland.

It has also been shown that SIBO (small intestinal bacterial overgrowth) is seen more frequently in autoimmune hypothyroidism. There is also a potential role for host-microbiota interference in thyroid cancer. [www.mdpi.com/.../1769](http://www.mdpi.com/.../1769) (2020).--- [www.mdpi.com/.../3609](http://www.mdpi.com/.../3609) (2021).--- [www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2023.97..](http://www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2023.97..) (2023).--- [core.ac.uk/.../580113119.pdf](http://core.ac.uk/.../580113119.pdf) (2023).-- [sirpublishers.org/.../548](http://sirpublishers.org/.../548) (2024).-- [academic.oup.com/endo/article-abstract/165/1/bqad184/7458951?login=fal..](http://academic.oup.com/endo/article-abstract/165/1/bqad184/7458951?login=fal..) (2024).--- [link.springer.com/.../s12020-023-03538-w](http://link.springer.com/.../s12020-023-03538-w) (2024).--- [www.frontiersin.org/.../full](http://www.frontiersin.org/.../full) (2024).--

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The decrease in vitamin C causes the creation of free radicals (ROS) that cause a lower production of nitric oxide, worsening the vascularization of the corpus luteum and preventing the normal production of progesterone. 750 mg/day of vitamin C also increases progesterone levels by 77% and improves endometrial thickness and fertility in 3 months. The accumulation of free radicals in the corpus luteum has been shown to reduce progesterone production. Following a diet rich in fruits and vegetables is essential to promote optimal progesterone production.

Vitamin E: 400 IU per day of vitamin E: Increases progesterone production by 67% during the luteal phase. Improves the thickness of the endometrium. Stimulating optimal circulation is one of the interventions scientifically proven to improve progesterone production. L-arginine and L-citrulline are very important for the synthesis of nitric oxide. Foods high in these two amino acids are watermelon, wild salmon, shrimp, meat from free-range animals, L-arginine: 6 g/day increases progesterone by 71%. Together with 600 mg/day of vitamin E, it improves the thickness of the endometrium by increasing blood circulation in the radial artery.

Vitamin B6: The efficient dose is 50-100 mg/day of the active form of vitamin B6 (pyridoxal-5-phosphate). It can help improve premenstrual syndrome in women who follow a diet low in fruits and vegetables based on dairy and refined sugars. Melatonin (1.5-3 mg/day before bed) improves progesterone levels. If insomnia or lack of rest is the cause of progesterone deficiency, melatonin supplementation may be indicated.

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Some micronutrients are essential to ensure optimal progesterone function. A deficient intake of EOA and DHA, zinc, vitamin B6, or a deficient intake of antioxidants may be the cause of lower progesterone production. Vitamin B6 is especially necessary for the development of the corpus luteum. Alcohol is capable of destroying vitamin B6 and, even if you supplement, it can cause low levels of progesterone and predominance of estrogens in the blood. Oral contraceptives are, without a doubt, the most common cause of low levels of progesterone due to the reduction in vitamin B6 they cause.

Zinc favors the binding of progesterone with its receptors in the endometrium. The increase in omega 3 fatty acids from seafood (blue fish, shellfish and seaweed) increases progesterone levels. The study also reveals that trans fats (pastry, fried foods...) are associated with suffering from endometriosis and infertility. Links in Spanish but references in English. [www.xeviverdaguer.com/es/la-progesterona-te-poder-cambiar-la-vida/](http://www.xeviverdaguer.com/es/la-progesterona-te-poder-cambiar-la-vida/) .-- [www.osanasaludacademy.com/progesterona-ii](http://www.osanasaludacademy.com/progesterona-ii) .--

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## Catryna

I can honestly say in looking back to the beginning of my (health/autoimmune issues) beginning around age 14, following reactions to the OPV and a Tetanus shot before beginning high school. The first immediate indication of reaction to the OPV was headache and intense pain in my back and legs. Six months later with the Tetanus shot, again headache and body pain, much of my hair fell out and my skin dried out. I also experience being cold all the time, with my average temperature dropping from the 98 range into the 96 range. (Beginnings of Hashimotos) Two months after the Tetanus shot, I developed mononucleosis with a second case a year later.

From then on it was gum disease beginning at age 16, IBS and environmental allergies in my late teens/early twenties, with an increase in my migraines, CFS in my 30's, Fibromyalgia in my 40's. And, all that time being told by doctors I was fine according to my blood work. It was not until 2010, almost 50 years later that I was properly diagnosed by a Homeopathic/Chiropractor for Hashimotos, Celiac, Dermatitis Herpetiformis, IBS, Fibromyalgia, and allergies. A complete change in diet and the proper supplements completely changed my life.

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## **mercready**

Hi, Catryna; I am Glad you're feeling better. Can you expand on your diet and supplements? Were you tested for Epstein-Barr antibodies? If yes, were they high and reduced by diet and supplements?

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## **Catryna**

mercready I have never been tested for Epstein Barr. My diet is primarily made up of wild game meat, chicken, turkey, pork, most fruits and vegetables. No grains or soy and no foods high in iodine. I drink large amounts of Kombuchas, and juiced fruit and vegetables every day. The supplements I take are as follows TriEase, Drenamin, Adrenal, Xymogen, Monopure, B12/Folate, D3/K2, Mag Threonate, Mag Glycinate, MSM, COQ10 200mg, Vitamin C, Ginkgo Biloba, Hawthorn, ALA/ALCAR, Astaxanthin, Milk Thistle

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A lot of moving parts to this one. What stands out the most is once again it seems old science and the testing it recommends is in seriously need to be updated. With proper information better treatment to follow. It reminds me of Frank Frazzetta, a very high demand graphic artist through the 60s and beyond. If the memory is working, it seems he at one point hit a wall and productivity, creativity collapsed. Doctors determined his Thyroid was no longer working properly. Thyroid meds were given, and the Doctor determined levels were then 'normal.' Frank however insisted he still was not back to his old self; would the doctor please bump the levels of meds. The doctor was reluctant but eventually relented.

With a change outside of the standard 'normal' levels Frank returned to his old self. The family believed it all stemmed from a large purchase of inexpensive turpentines used for his oil paintings. They expressed they could not stand to be in his studio for the overwhelming fumes. While this could serve as an obvious example of environmental toxins influencing the thyroid and its function, today we are swimming in a sea of toxins. As the interview covers, the estrogen disruptions from the thyroid being messed with would be another source of some people exhibiting extreme mental, emotional Dis-ease and very likely the general population's ability for their bodies to maintain their gender functions.

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Very important just, environmental toxins. Many studies have focused on the relationship between environmental endocrine disruptors (EDDs) and the pathogenesis of thyroid disease. This review summarizes such studies exploring the effects of exposure to common EEDs on thyrotoxicosis, and found that EEDs contribute to the pathogenesis of thyroid-related diseases, such as thyroid cancer, goiter, thyroiditis, hyperthyroidism and hypothyroidism. The following three aspects may EED exert their impact on the occurrence and development of thyroid disease:----- (1) damage to thyroid tissue structure, including disruption of mitochondria and stratification of thyroid follicular epithelial cells; -----

(2) alteration of thyroid hormone signaling, including disorders of thyroid hormone synthesis and secretion, destruction of normal function of the hypothalamus-pituitary-thyroid axis, alteration of estrogen signaling in the body, alterations in the level of thyroid-stimulating hormone, inhibition of thyroglobulin release from thyroid cells and reductions in the levels of sodium iodide cotransporters, thyroid peroxidase, deiodinase and transthyretin; and -----(3) molecular mechanisms underlying impaired thyroid function, including competitive binding to T3 and T4 receptors, disruption of the hypothalamic-pituitary-thyroid axis, activation of ERK and Akt pathways, oxidative stress, regulation of protothyroidism expression. -k-Ras oncogene, PTEN tumor suppressor gene and TSHR thyroid gene, and induction of autophagy in thyroid cells.

[www.sciencedirect.com/science/article/abs/pii/S0009279724000553](http://www.sciencedirect.com/science/article/abs/pii/S0009279724000553) (2024)

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Environmental epidemiology and toxicology have seen a growing interest in environmental factors that contribute to the increased prevalence of neurodevelopmental disorders, with the aim of establishing appropriate prevention strategies. A literature review was performed and 192 articles were found covering the topic of endocrine disruptors and neurodevelopmental disorders, focusing on polychlorinated biphenyls, polybrominated diphenyl ethers, bisphenol A, and pesticides. This study contributes to analyzing its effect on the molecular mechanism in maternal and infant thyroid function, essential for childhood neurodevelopment, and whose alteration has been associated with various neurodevelopmental disorders.

[www.sciencedirect.com/science/article/abs/pii/S0091302224000128](http://www.sciencedirect.com/science/article/abs/pii/S0091302224000128) (2024).----- Both estrogenic and androgenic chemicals are common contaminants in municipal wastewater. The results of the present study show that DHT, E2, and BPA, which are common EDCs in wastewater, can alter the inflammatory response and thus immune function. The results also show that DHT, E2 and BPA can inhibit the production of inflammatory mediators in macrophages, Exposure to environmental estrogenic and androgenic compounds causes many adverse health effects on the endocrine system, leading to various disorders in humans and animals.

The most common reported effects are reproductive disorders, including reproductive abnormalities, sexual dysfunctions, and cancers of reproductive origin. The altered immune response is usually characterized by suppression of immunity or stimulation of the immune response. Immune suppression is typically characterized by increased susceptibility to disease and an inability to eliminate cancer cells. Overstimulation of the immune system is characterized by immune hypersensitivity. [www.ncbi.nlm.nih.gov/.../PMC6721122](http://www.ncbi.nlm.nih.gov/.../PMC6721122) (2019)

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**juststeve**

Gui, amazing how one little organ and how well it functions can have such a massive impact on so many, if not all the body organs and systems function. Our complex collection of many organ systems are like a collective co-op acting in concert, or in chaos depending on too, how individuals can differ in what does or does disrupt them. There are other 'Shepard's' too, other small organs with massive influence on our quality of life. Throw any one off and they all are impacted.

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**gle1013**

Steve, interesting story about Frank. I lived on Boca Grande and knew Frank's daughter, Holly. That is how I became familiar with his work. But I didn't know about the turpentine! Thanks!

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**juststeve**

This was covered in \* Frank Frazetta ICON \* one of the graphic books put out. Franks wife did an amazing job promoting his work in posters, graphics in books and sharing what they wanted in writing about his life's story. His work is on Tarzan, Conan the Barbarian novels, LP records, all over magazines and movie posters, was even involved with much, much more. Very prolific and when looking at the whole of his life's work, seems to be very much an example of someone who tapped deeply into the Joy of doing what he was meant to do. Popular culture material and have heard so many exclaim I don't care for the subject matter, But, the work is so beautiful, hard to take the eyes off of it.

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## **dogmom**

I was originally diagnosed with hypothyroidism in 2000 after many years of being told I was "fine." Unfortunately thanks to Dr. Mercola and many others like him, I have been eating a low carb/intermittent fasting diet for well over a decade, and as a result, my free T3 level has been very low for a long time. Now in addition to Hashimoto's disease, I struggle with SIBO, leaky gut, and histamine intolerance. I have enrolled in the Rooted in Resistance program, and am finally crawling out of the hole. Now it finally makes sense as to why despite doing all of the "right" things (eating real food and exercising), my health has continued to decline.

Posted On 06/16/2024

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## **Ronald\_H**

dogmom, I haven't found "Rooted in Resistance" in any search, so please provide links.

Posted On 06/17/2024

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## **ela3783**

Thanks Dr M and Prof Gui!!! Brilliant and so very imp for all to remain healthy

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Thank you very much, Also: Sulforaphane (SFN), a natural compound derived from broccoli/broccoli sprouts, has been demonstrated to be used as an antitumor agent in different types of cancers. However, its antitumor effect in thyroid cancer remains largely unknown. The aim of the study was to investigate the therapeutic potential of SFN for thyroid cancer and explore the mechanisms underlying antitumor effects of SFN by in vitro and in vivo studies. Our data demonstrated that SFN significantly inhibited thyroid cancer cell proliferation in a dose- and time-dependent manner, induced G2/M phase cell cycle arrest and apoptosis, and inhibited thyroid cancer cell migration and invasion by suppressing epithelial-mesenchymal transition (EMT) process and expression of Slug, Twist, MMP-2 and -9.

Mechanically, SFN inhibited thyroid cancer cell growth and invasiveness through repressing phosphorylation of Akt, enhancing p21 expression by the activation of Erk and p38 signaling cascades, and promoting mitochondrial-mediated apoptosis via reactive oxygen species (ROS)-dependent pathway. Growth of xenograft tumors derived from thyroid cancer cell line FTC133 in nude mice was also significantly inhibited by SFN. Importantly, we did not find significant effect of SFN on body weight and liver function of mice. Collectively, we for the first time demonstrate that SFN is a potentially effective antitumor agent for thyroid cancer. [www.ncbi.nlm.nih.gov/.../PMC4694875](http://www.ncbi.nlm.nih.gov/.../PMC4694875)

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## josephunger

Essential article, THANKS! A lot of personal experience with low thyroid. For a couple decades my TSH was 1500% normal. Waking, active body temp 94 degrees. Many therapies and diet as described in this article. No help. Eventually consulted with industry experts claiming I needed the Synthroid. Tried for a month. Did not like the feel and became more determined to find and fix the problem. Had to address the MTHFR gene deficit, Iodine saturation and Hypothalamus supplementation. Still searching for health improvement but thyroid tests normal. A valuable resource by the God Father of Endocrinology, available in pdf online and for purchase in book form. Practical endocrinology by Henry Robert Harrower [ifnh.org/.../practical-endocrinology](http://ifnh.org/.../practical-endocrinology)

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## **nesanel**

"and your exposure to environmental pollutants, like endocrine-disrupting chemicals" - I once read that cleaning ladies have a higher cancer rate than others, as they are exposed to so many unhealthy chemicals. Today, thankfully, there are numerous healthy types, including, of course from Mercola, also Shaklee and Seventh Generation.

Posted On 06/17/2024

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## **rdn1395**

I am not finding the recommended powder anywhere. It does show unavailable on one site. All sites just seem to have progesterone cream.

Posted On 06/16/2024

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## **dogmom**

I was not able to find the powder on Amazon either, only creams.

Posted On 06/17/2024

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## **Dr. Mercola**

Apparently company sold out late last night and for some reason chose to take their page down rather than keep it up.

Posted On 06/17/2024

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**rn53now**

Check Micronutrients or Bulk Supplements.

Posted On 06/17/2024

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**EllenLavigne**

I wish this interview was dated. I read it on 6/16/24 but the comments below are from 2015. I wish Mercola did seminars. He's closer to me now in Cape Coral FL but is not taking patients. I would love to be under his care.

Posted On 06/16/2024

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**Jud8611**

If you want to do labs, check SHBG which the liver creates with excess estrodiol and thyroid and handcuffs it all up. Ladies I know will lather on more estrogel to compensate for feeling estrogen deficiency throwing more fuel onto the fire. It is a beast to tame.

Posted On 06/18/2024

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**nat3939**

When you have an underactive thyroid there are a number of nutrients that can be deficient. Such as protein, iodine, selenium and possibly pantothenic acid, aka B5, aka coenzyme A. B5 helps to prevent adrenal exhaustion, which is your stress gland that controls your fight or flight tendencies. ...., It's very possible that you may not agree with my next nutrient because of things said in the past, but an Iron deficiency slows your body's thyroid function and blocks its metabolism-boosting effects. Hypothyroidism is often missed, meaning a lot of people don't even know they have a thyroid disease. So, if you notice low energy levels, weight gain, weight loss, body hair loss, or even a lower basal body temperature, talk to your doctor, as these could be signs of an underactive thyroid.

Posted On 06/17/2024

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**yla6634**

Dr Mercola as youve seen from the comments above the progesterone powder is not available. Any chance you will start stocking it in your store?

Posted On 06/17/2024

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**Dr. Mercola**

we are unable to sell in our store, but will find another source to recommend.

Posted On 06/17/2024

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## Ronald\_H

I understand that there are four types of natural estrogen in the body and two of them are bad. A chemical in broccoli called DIM which is short for diindolylmethane will eliminate the bad estrogens which is particularly important for males. But, I don't eat broccoli everyday, so I supplement diindolylmethane when missing it in foods.

Posted On 06/17/2024

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## alpine22

I'm menopausal approximately 10 years. I've taken 200mg oral micronized progesterone nightly for 5 years and it's a godsend. Lately, though, hot flashes and insomnia are breaking through again. My gynecologist tells me that I'm on the maximum safe dose. But several menopausal sleep improvement studies seem to have used 300mgs safely and successfully. I'd like to try this trans-mucosal method for an added 50 mg per night. Friends, do you think this would be safe?

Posted On 06/16/2024

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## Catryna

alpine22 You might try Valerian for your insomnia.

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## Almond

Due to inflation and shortages, many people are no longer eating butter, fruits and vegetables. The main reasons I hear are high cost and poor quality. That is, rotten produce. Even if it appears fresh, it may be contaminated with Apeel and other chemicals that can no longer be washed off. Not everyone has land under their feet, but there are good options even for apartment dwellers without balconies. Some dollar trees and Home depots sell 3-way stackable pots for about \$1.25-\$1.75 each. So, for about \$5-7, you could have a 4-layer high, indoor, mini- "greenhouse" with a catch basin underneath it.

This link is just to show the image of how they work--you may find better prices elsewhere.

[www.lowes.com/pd/Nature-Spring-Stacking-Planter-Tower-3-Tier-Space-Sav..](http://www.lowes.com/pd/Nature-Spring-Stacking-Planter-Tower-3-Tier-Space-Sav..) There are also various kinds of hydroponic systems ranging in cost from about \$39-\$100+, and plant towers grow boxes. (You prob want legs or wheels under them to protect your floors.) Leaf lettuce can be pruned and will continue to grow, unlike head lettuce. If you could only get one fresh salad a day, this would improve many diets and budgets.

Purchase ORGANIC potting soil, by the bag from a nursery that produces their own as so many commercial products are contaminated and will actually kill plants. We have been paying \$5 a bag and this would easily fill a few 4-layer towers of stackable 3-way pots. other expenses would be a packet of seed (often free from various sources and seed swaps) and an occasional pinch of fertilizer and homemade mulch/compost (coffee grounds, etc.).

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