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GRAVES + TED FUNCTIONAL MASTER GUIDE

A COMPREHENSIVE FUNCTIONAL MEDICINE GUIDE TO START THRIVING WITH GRAVES DISEASE AND THYROID EYE DISEASE

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This protocol serves as a general guideline and should be personalized based on individual health conditions and needs. Consultation with a functional health practitioner or qualified healthcare professional is essential before initiating any new supplement or lifestyle changes and to determine the personalized doses required for each person. Regular monitoring and adjustments may be necessary based on individual responses and evolving health status.

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HI.. *and welcome!*



Welcome to my comprehensive guide to thriving with Graves Disease! My name is Elena Genik, Pharm.D, NBC-HWC. I am a doctor of pharmacy practicing for over 15 years, functional health coach, holistic and herbal integrative pharmacist, yogi, reiki practitioner, and a mindfulness coach. I am a Graves, TED, PCOS, and autoimmune warrior, and so are YOU! Thank you for sharing this journey with me, I can't wait to meet you.

After my initial struggles with Graves, feeling so lost and confused, I decided that I wanted to alchemize my pain into medicine for myself and others. I thought, maybe I could write a survival guide. But just surviving wasn't enough, we should be THRIVING!

Whether you're newly diagnosed, seeking more information, or supporting someone on their Graves autoimmune journey, I extend a warm welcome to this resource crafted to empower and inform.

Navigating Graves can feel overwhelming, but this guide is here to provide clarity, support, insights, and action steps. We'll explore everything Graves, as well as Graves Ophthalmopathy or Thyroid Eye Disease; from understanding the symptoms and potential challenges, to discovering effective management strategies and seeking the support needed for a fulfilling life while living with Graves.

Your journey is unique, and this guide is designed to offer comprehensive information, practical tips, and resources to help you make informed decisions, take control of your health, advocate for yourself, and take a holistic approach to your health.

I'm here to support you every step of the way as you continue on this journey toward better understanding and managing your thyroid health. I know from firsthand experience how isolating this disease can be, and want you to know that you are NOT alone, we are in this together!

WE GOT THIS!!

Our Graves Story

LETS GET TO KNOW EACH OTHER

Welcome, my dear friend. I'm so sorry that you had to ever google what Graves disease is, but I'm grateful that it led you to me.

So, lets take a trip down memory lane together. You started having all these strange symptoms... maybe it was the racing heart, heat intolerance, jitters or shakiness, unexplained weight loss, or feeling exhausted all the time. You probably went to the doctor, hoping for some answers, and then the dreaded day came when they sat you down and broke the news: you've been diagnosed with Graves' disease.

Your mind probably started racing right away. WTF is GRAVES disease? It literally sounds like a death sentence. You might have been scared or overwhelmed. Maybe it didn't sink in just yet. You went home, opened up your phone or computer, and googled everything you could about Graves'. And wow, what a rabbit hole, right? You hit the internet hard, trying to figure out what was going on with your body. There were so many articles, forums, and blogs... some hopeful, some helpful, some downright terrifying, and a lot of them contradicting each other. One day you'd feel reassured, and the next, convinced you'd never feel like yourself again. It's like an emotional rollercoaster that you couldn't get off.

But then you found your way here. And I just want to say, I'm so glad you found me. I understand what you're going through because I've been in your shoes, and I know how overwhelming it can feel. I'm here to help calm your nerves and make this journey a little less scary, a little less confusing, and a lot more hopeful.

Thank you for trusting me enough to be part of your story and healing journey. I'd love to get to know you too, hear your story, and be there to support you along the way. So don't hesitate to reach out whenever you're ready, let's walk through this together.

My Graves Story

LETS GET TO KNOW EACH OTHER

Long story short:

- I was diagnosed with Graves in December 2022.
- I'm currently using an **integrative & holistic** approach to remission, healing, and a state of ***thriving***.
- I combine various modalities such as conventional medicine, functional medicine, herbal medicine, yoga, and mindfulness meditation to reach a state of optimal health.
- I'm still in my healing journey, and learning new things every day.
- Thriving is a mindset, thriving BY CHOICE.

After being diagnosed at the end of Dec 2022, I was put on methimazole 5mg one daily, and I felt relief within a week. I was highly responsive to methimazole, it worked great and I felt great for 4-5 months, aside from a little heat sensitivity and fatigue upon activity, which was manageable. In April 2023 my eyes starting watering non-stop and later bulging, the left more than the right, and eventually after imaging testing I was diagnosed with *Thyroid Eye Disease* (AKA Graves Ophthalmopathy or Graves Eye Disease). After 6 months of treatment, the methimazole put me in what I thought was a hypothyroid state but my doctors didn't believe me and dismissed me, because my Free T3/T4 labs were in "normal range," though on the low end.

It felt like once my labs were in the range *they* deemed acceptable, thought not ideal, they suddenly didn't care so much about me, how I'm truly feeling, or my condition, which is when I decided to take matters into my own hands and be **my own health advocate**. I want to share everything that I learned and figured out with other people like me, who are seeking knowledge, and want to **be truly SEEN, heard, and understood**. I want to support you, the WHOLE you, in the ways I wish I was supported myself.

My Graves Story

LETS GET TO KNOW EACH OTHER

So that led me to adopt a natural, holistic approach for the rest of my healing journey. Not some "woo-woo" stuff, like a "take this herb and wish on a shooting star that you'll feel better" situation. Holistic meaning a WHOLE body and root cause approach to healing. Focusing on patiently improving and even thriving, not a quick cheap "cure." This meant making big changes in my life, lifestyle, mindset, boundaries, and health status. It meant finding the strength and courage to say no when you badly wanted to say yes. It meant finding the combination of therapies that worked for ME, whether they were conventional, natural, herbal, or all of the above. A TARGETED supplement plan, never random stuff.

And that's what I encourage YOU to do. Find what works best for YOU, and do that. There are so many different things you'll find on the internet from all different kinds of doctors, practitioners, coaches, etc. that will be conflicting, overwhelming, and discouraging. I encourage you to take it one step at a time. See what feels right or attainable for you. Take notes. Ask questions. Dig deeper. Look for medical literature. Ask someone to help you interpret it. I'm always available if you have any questions, please don't be shy! I wish I had someone I could talk to and bounce questions off of, and guide me throughout the process.

I'm still on my healing journey, and feel like I am constantly learning new things as they develop about this disease. I have radically accepted that having a chronic illness means waking up and not knowing how you're going to feel that day, yet making the best of it, however that looks to you. Waking up and choosing gratitude, choosing happiness, and choosing to thrive. It is an honor and a privilege to share this journey with you, and I thank you deeply from the bottom of my heart for your attention, patience, care, vulnerability, and trust.

Past medical history

Lets go way back. Over the last 10-15 years, I was relatively healthy for the most part; I ate nutritious, whole-food most of the week, indulged any food that came my way on the weekends, exercised, hydrated, socialized a lot. I struggled with my hormones and acne for many years, likely stress induced from working in a stressful pharmacy. I went to an endocrinologist who ran many tests but I never got any answers. On top of that I struggled with hormonal fluctuations, and what I thought were hypothyroid symptoms.

Every year at my annual primary check up I would ask my doctor to run extensive lab tests and check all of my vitamin levels, thyroid levels, you name it. By the way, this was way before I knew that biotin affects your thyroid lab readings, but more on that later. My Free T3/T4 were always on the low end of the normal range. I had multiple small thyroid nodules that would disappear and reappear occasionally, and I was told to do a follow up sonogram every 6-12 months as they were not large enough to be of any concern.

In 2020 in the midst of the pandemic, my acne was out of control, after many tests and unsuccessful dermatologist interventions, no one could figure out that I had PCOS until I went to get a sonogram at the gynecologists office where they found multiple cysts on my ovaries. They told me my only option was to take birth control, which I could not tolerate in the past due to increased acne, hormonal fluctuations, and severe mood disturbances.

As a health care provider with a thorough background in medicine, I KNEW there had to be more than that, which led me to discover functional medicine. I questioned to myself, “but why do they give other women Metformin (a diabetes drug) to women with PCOS with positive results? Why didn’t they offer it to me?” The answers to which I’ll never know. The doctor I saw seemed fairly fresh out of medical school so maybe she wasn’t experienced enough to know better or to care. I looked fine to her on paper, my hormones and insulin levels were all in range, and she’s not trained to address root causes anyway.

I know this, because I went through almost the same training that doctors go through; not as many years practicing in residency, but way more in-depth training about the medicine itself. In medical and pharmacy school, you are trained to manage the symptoms and progression of chronic diseases with the use of pharmaceutical medicines or surgery, with little focus on eliminating the root cause. They spend about one sentence per lecture telling you that “diet and exercise” are the first line treatments, but don’t elaborate much more than that.

Past medical history (continued)

I became pretty obsessed with trying to figure out the root cause of my problems, and spent a lot of time going down rabbit holes of information and medical papers on PubMed. My training in pharmacy school left me fully equipped to interpret all of the medical jargon, clinical papers, and studies. And I started digging deeper beyond just the conventional medical stuff. I started learning about functional medicine and root-cause systems analysis.

I learned about insulin resistance (they don't really brush upon this too much in pharmacy school) and that's when everything suddenly clicked. During the pandemic, much like everyone else, I was extremely STRESSED OUT because I was working in a pharmacy near Elmhurst, Queens, New York at the peak of the madness and the news was so scary. The hospital with the most cases and deaths, dubbed the "epicenter" of the US, was only 5 minutes away from me and I was working through the thick of it, while all of my friends and family were home, quarantined, having zoom parties, asking me if I could *just stay home*. But I couldn't, it was my job as a healthcare worker to show up and help people. One of my coworkers was even hospitalized and in critical condition, thankfully, he is OK now.

Along with that came so much stress and FEAR. I genuinely feared for my life every day. Shout out to my adrenals... I'm sorry, please forgive me, thank you, I love you. On top of all of this stress, I decided to treat myself to pizza and carrot cake every Friday night as my reward for going to work. I remember thinking to myself, "if I die at work this week, at least I ate my favorite guilty pleasure comfort treats." This delicious combo of stress and unhealthy eating habits resulted in insulin resistance, which subsequently caused my PCOS, hormonal chaos, and acne breakouts.

Once I addressed this root cause with diet, exercise, stress management, and supplements, I saw a drastic improvement in just WEEKS. I stopped eating simple carbs and sugars, comfort and junk food. I started incorporating herbs like spearmint, barberry, and reishi, I started myo-inositol and d-chiroinositol supplements, practiced meditation and positive affirmations, and did yoga or exercise for at least 20-30 minutes on my days off (I was standing and walking around for 10+ hours a day at work). In just two weeks, I stopped breaking out!!

Functional medicine, YOU. ARE. IT.

Discovering my Graves Disease

Fast forward to September 2022, my cries unanswered by my doctors of my low thyroid symptoms, I started taking various thyroid supporting or "boosting" supplements available over the counter. Big regrets. Looking back, after about a month I started developing hyperthyroid symptoms. I was feeling jittery with shaking hands, hot all the time (I thought YESSS, finally I'm not cold, I was actually so happy about this one), more frequent bowel movements (another win personally after struggling with constipation for years). I didn't think much of it until things started getting more severe.

My heart rate was in the 130s/140s just laying in bed, I was having heart palpitations, anxiety, I couldn't catch my breath and got really tired from simple activities like walking and talking. I knew something was up but one last thing finally drew the line. I was excited and nervous to be getting on a call with a potential functional medicine business coach, and right when I got on the video call I felt the left side of my face go numb for a few minutes. This scared the crap out of me because I thought I was having a stroke, and I finally went to urgent care to get lab work drawn.

My thyroid panel confirmed hyperthyroidism: TSH <0.02 mIU/L, Free T4 2.1 ng/dL, Free T3 11.2 pg/mL. Further workup by endocrinology revealed antibodies consistent with Graves autoimmune disease: TSI 4.72 IU/L and TRAb 7.33 IU/L. My doctor called me to tell me my diagnosis and said he will be sending me a prescription for methimazole to my pharmacy, 5mg one tablet daily, to begin immediately. He explained the risk of leukopenia (decreased white blood cells) and what signs and symptoms to watch out for, and to contact him right away if any of these occur, otherwise start the meds and we will adjust the dose in a few weeks as needed. That was all he told me, he didn't tell me anything about nutrition or lifestyle factors, about autoimmune disease, or inflammation.

It didn't really sink in at the moment that I now have a lifelong chronic illness. I just kept thinking it literally sounds like a death sentence. GRAVES disease. I thought to myself how awkward it was going to be to share this information with my family and friends, because it sounds like I'm about to be on my death bed. Maybe it wouldn't be that bad. I was in denial.

Starting conventional treatment.

I took the pills blindly and didn't look back. After a few days I already felt a great relief, and by the end of the first week I was feeling pretty normal, aside from some occasional heat intolerance and fatigue. I had ordered lemon balm tincture and even tried to take that for a few days instead of methimazole but it didn't work well enough, so I stuck with the methimazole. He told me to follow up within a month, but I felt good and I was traveling so I wasn't able to get lab work done for a few months.

Finally I followed up 3-4 months later in April, My labs were looking good and I felt good too. My free T3 and T4 were in optimal range, but my TSH was still extremely low. He advised me that TSH may take a longer time to stabilize, from months to years. After about 5-6 months, I started noticing hypothyroid symptoms and my doctor reluctantly agreed to let me start tapering down my methimazole dose. More about this journey later...

Discovering Thyroid Eye Disease

In the weeks leading up to this appointment, my eyes started to be endlessly watery and itchy. He drew my thyroid labs which were looking good, within the range on the higher end of the limit, and I felt pretty good, the methimazole was working well with no side effects. He urged me to see an ophthalmologist, though I was in denial that Thyroid Eye Disease would happen to me. My delusion told me that it's a 50% chance it won't happen to me, *Well, it did*.

Finally I went to see an ophthalmologist, neuro-ophthalmologist, and an oculoplastic surgeon. My eyes went from watery and itchy, to protruding, my left eye more than the right, as confirmed by MRI. I also had eye pain, especially looking up/down/sideways, eye pressure, migraines, blurry/double vision.

Even though I had an entire healthcare team of highly trained professionals at one of the most prestigious organizations in New York City, no one explained to me why this was happening in my body, or questioned the underlying causes or imbalances in my body. All they cared about was that my TSH (a pituitary hormone, mind you, not a thyroid hormone) was still out of range, even though they told me it may take years to stabilize. Not one doctor suggested something as simple as adding Brazil nuts to my diet or checking my selenium levels. I had to learn this simple tidbit on my own, from hours of endless browsing. Which is when I realized again, there is MORE to this picture and treatment. There is a functional, root cause approach to managing this disease.

Is this my fault? Does everyone else see my lopsided face??

I was extremely self-conscious about the changing appearance of my eyes and face. Everyone said it was hardly noticeable and that I still looked beautiful, but I didn't believe that in my heart, and every time I looked in the mirror my heart broke all over again. It was very obvious to me that my left eye was bulging out of my head. Brushing my teeth became a disappointing activity, because I had to see my face. I couldn't unsee it.

I would try to squint my left eye so that it was the same size as my right in pictures, or cover it altogether with my hair. Looking back on all of my photos at the time, I was always hiding one eye or squinting so much that you couldn't see either eye. I avoided being in photos altogether, to be honest. I never felt vain until I became disfigured, it was all I could see. Suddenly people joking about "cock-eyes" wasn't funny to me at all, and I began taking everything personally and to heart.

I didn't understand why this was happening to me, and began questioning all of my decisions in life. I thought I was doing all of the right things. Did I do something to deserve this? Is this my bad karma? Did someone put a hex on me? Did I party too much? Did I drink too much? Did I work too hard? Did I travel too much? I started feeling a lot of shame, guilt, sadness, anxiety, depression, worthlessness, and extremely isolated.

I felt like I was being punished, like maybe I had somehow brought this on myself. I couldn't stop replaying every decision, every moment in my life, thinking maybe there was something I could've done differently to prevent this. It's a dangerous spiral, and the guilt and shame felt endless. I started withdrawing from the people I loved because I didn't want them to see me like this, or worse, feel like they had to pretend they didn't notice what was happening to my face. Or, equally as bad, point it out and ask me questions, and give me pretty awful suggestions or unsolicited advice. It became harder and harder to be social, to show up for events, or even just to leave the house. Everything that used to be fun now felt like a nightmare, and I was afraid that if I let people in, they'd see me as broken, too.

Discovering Community & Mindfulness

Feeling so lost, confused, misunderstood, and alone, I turned to online forums for answers and found a community of people with Graves Disease, and with Thyroid Eye Disease. Reading other peoples stories, what worked for them, what didn't, was beyond therapeutic for my healing journey. I realized I wasn't alone. I realized there were so many simple things I can do to help my condition. I started to share my story too, and reach out to other people posting and talk to them. This greatly improved my mental health, and I didn't feel as isolated anymore. It was so comforting to know that other people were going through the mental gymnastics I was jumping through on a day to day basis.

I started having a lot of compassion for myself and for other people. I started learning about all different kinds of invisible illnesses, disabilities, chronic illness, and autoimmune diseases. I took a course on mindfulness and started implementing it into my daily life, which really helped transform my mental state and mindset. I learned how to reframe negative thought patterns and stand in my power: this wasn't my fault, and I don't deserve this. I practiced gratitude daily for all of the wonderful things I still had in my life. I started going to yoga classes when I felt well enough, and making friends in the local community who were mindful of me and my condition, asked how I was feeling, and genuinely cared. I started to get more firm in my boundaries, and distanced myself from people who didn't make me feel supported or didn't understand or respect my boundaries. I stopped going out of my way, and started saying no to things that didn't align with me, without feeling sorry about anyone else's feelings or preferences over mine.

As someone who genuinely cares about bringing people together and building meaningful connections, I wanted to start a community for those dealing with Graves, TED, thyroid conditions, and autoimmune conditions. My goal is to unite everyone in a space where they feel embraced, acknowledged, valued, empathized with, and cherished. I want to share the magic of transformative tools that have personally helped me, such as functional medicine, medical knowledge and pharmaceutical expertise, herbs and supplements, mindfulness, yoga, reiki, enriching workshops, to create connections and a support system.

Riding The Rollercoaster

I'm not sure if it was all of the functional and holistic hacks I was trying, nutrition, lifestyle changes, herbs and supplements, methimazole, or just the disease riding its course, but 6 months later, during summer of 2023, that I started noticing the gradual switch to HYPO-thyroid symptoms, such as cold intolerance (on a hot summer day), weight gain, dry skin, constipation, gas, stomach pain, extreme fatigue, hair loss, brain fog, weakness, muscle and joint pain. I went to get my thyroid labs checked and they were on the lower end, but within "normal" range so my endocrinologist dismissed how I was feeling, because he was seeing the numbers and not the human.

He was only considering the "normal range" of lab values for a general population versus what is *ideal or optimal for* ***ME***. He said that if my levels were unstable I should consider getting a thyroidectomy. I asked him to decrease my methimazole dose and he was very hesitant, however I was persistent, and we agreed to taper it down. First half the dose, then every other day, every 3 days, every 5 days, every week, until I was eventually down to 1/4 of a tablet, every 2 weeks, to none.

In the fall of 2023, I began supplementing with vitamin D and selenium capsules and/or brazil nuts, and saw a great improvement in my eyes and energy levels. I began learning my personal triggers and avoiding them, such as; eating chick peas, kale, Brussel sprouts, spicy food, and drinking alcohol. This was making flare-ups more manageable, and less frequent. By November 2023, my eyes were looking symmetrical again, and my energy levels were feeling more stable.

After the passage of just one year, I was off of anti-thyroid drugs by the beginning of 2024. I took my last micro-dose of methimazole on January 1st, 2024. Throughout the process, going through flare-ups was very stressful, especially since it made my TED eyes flare up worse, and I often considered removing my thyroid, as I went through a lot of mental anguish cycling between hypo- and hyper-thyroid symptoms. For me, going hypothyroid felt the worst I've ever felt before in my life, worse than hyperthyroid. I was miserable. It also slowed down my digestion so much that it was causing me to have severe digestive pain on a daily basis.

Flip flopping between hypo and hyper-thyroid symptoms was agonizing. At this time I even considered the thyroidectomy in my lowest moments. In the end, I realized that removing my innocent thyroid would not be the answer to my problems, as my thyroid is not to blame for this dysfunction.

It Gets Worse Before It Gets Better

My last hyperthyroid flare was on January 1st, 2024, and it was the hardest one to recover from. After a week of being sick with a cold/virus over the Christmas holiday and my birthday, I travelled to Mexico with my friends and went out for new years eve, when my defenses were already weak. At this time my friends and I simultaneously fell very ill with what may have been covid, and at the same exact time I started suffering from food poisoning which later turned out to be a parasite. I couldn't get out of bed and slept for days.

The following months were absolutely brutal. My eyes started morphing again. My left eye went from bulging to drooping, the upper and lower eyelid was drooping and discolored. Then my right eye began bulging. Essentially my eye bulge switched from left eye to right eye.

I spent most of my days for the next few months in bed with a low heart rate, extreme fatigue, unable to function properly. There were many days that I could not stay out of bed without feeling dizzy and or nauseous. I couldn't spend much time outside without getting winded. My anxiety was constant and scary, I was terrified. I was traveling for the winter in Mexico so I didn't have access to my doctors, medicine, or supplements. I hit an all time low.

When I returned home, I went to the doctor to check my thyroid levels and they were still in good range, with my free T3 and T4 levels in the optimal end of the range, and my TSH still very low. This SHOCKED me, I thought for sure my thyroid levels would be low, since everything in my body seemed to be slowing down.

When I finally returned home and had my thyroid levels checked, I was convinced my thyroid had tanked. But when the results came in, everything was still in range. My free T3 and T4 were at the optimal end, and my TSH was still low. I was SHOCKED. My thyroid wasn't crashing—something else was happening. That's when it clicked that my adrenals were likely burned out from constant thyroid fluctuations, flares, stress, and illness. My body had been in fight-or-flight mode for too long, and it just couldn't keep up anymore.

That's when I realized my thyroid wasn't the only thing out of balance. Graves and thyroid fluctuations had been pushing my body to the edge for so long that my adrenals were taxed, and I was likely dealing with adrenal fatigue or HPA axis dysfunction. After each thyroid flare, especially this last one, my body just couldn't recover like it used to. I'd been running on fumes, but this was the worst I'd ever felt.

Medical Gaslighting is Real

When I went to see my oculoplastic surgeon in November 2023, my eyes were finally getting better. I was optimistic and hoping for more good news. Fast forward to a few months later, after my hyperthyroid flare and getting sick in Mexico, I returned to her because my eyes had taken a turn for the worse. I explained how I had fallen ill with a parasite, and everything seemed to go downhill from there, especially my eyes. But instead of listening to my story, she was fixated on the fact that my TSH was still low, pushing methimazole as if that was the solution to everything, even though I had been tapered off by the endocrinologist.

She was quick to tell me that the worsening of my TED was my fault, bluntly saying that my only options were either to take methimazole or "do nothing." It felt like she wasn't even trying to consider the bigger picture or how I had been feeling. She mentioned that Tepezza and surgery are other options, but I wasn't a candidate for either. Her tone was rushed and abrupt, she was growing impatient and annoyed as I tried to explain that my thyroid hormones were in an optimal range, so I didn't want to take methimazole, which would push me into hypothyroidism, which makes my TED worse and ruins my quality of life. I mentioned studies showing that it doesn't lower the antibodies, which contributes to my TED, but she quickly brushed that off completely, saying that TED had nothing to do with antibodies. WRONG. Red flag. Another red flag was when I asked if I should see a neuro-ophthalmologist for my drooping left eyelid, hoping for another perspective and to rule out ocular Myasthenia Gravis—she didn't do any tests but looked at me, told me I didn't have it, and then she scoffed at me and firmly said she was the "only TED specialist there."

The entire visit felt condescending and dismissive. I had done my research, I asked informed questions, and instead of acknowledging that, she seemed irritated and talked down to me as if I was overstepping. By the end of the appointment, I was in tears, feeling blamed for my worsening eyes, even though I had been trying everything in my power to improve my health. It was so defeating. It was demoralizing and left me questioning everything, especially about my fellow healthcare workers. Medical gaslighting, especially from a "specialist," can leave you feeling so low and powerless when you're already so vulnerable.

However, that experience lit a fire in me. I became determined to find the root cause of my issues, heal my eyes, and prove her wrong. It also inspired me to figure this out not just for myself, but so I could share what I learned with others, helping them avoid the same painful, dismissive experiences I went through. I want to change the script.

From Surviving to Thriving!

The tides began to turn when I went all in with a holistic approach. All of the "little" "basic" tips and advice that I was ignoring, couldn't be ignored anymore. I finally went gluten-free. I was firm in my boundaries and avoided all other triggering foods. My adrenals were crying for help; I stopped pushing myself and powering through, instead listening to my body and giving myself ample time and space to rest. I stopped fasting in the morning and fueling with caffeine, quit cold turkey.

I started consulting with my own functional medicine team and took a GI MAP stool test as well as a DUTCH test and Metabolomix. I discovered that I had multiple pathogens (H.Pylori, Blastocystis Hominis, Enterococcus, Pseudomonas) as well as a leaky gut. I had deficiencies that needed to be corrected, especially iron. I was suffering from HPA axis dysfunction or adrenal fatigue, which became clear from my DUTCH results. Once I started addressing these, there was a massive shift.

I began herbal supplements containing antibacterial and antiparasitic herbs, leaky gut healing supplements, adrenal adaptogens, non-constipating iron, magnesium citrate, liver supportive herbs, anti-inflammatory herbs and supplements, My eyes started healing and my energy levels were finally increasing. My eyes started becoming noticably more symmetrical after only 4-6 weeks. My anxiety started going away as I started addressing my mental health and regulating my nervous system. I stopped identifying with the disease and came back to myself. Mindfulness. Reframing negative thought patterns, and connecting with community really turned things around for me. Every cell in your body exists solely for you. The thoughts we have greatly influence our healing, because the body is always listening. I spoke kindly to myself, said and wrote positive affirmations, and envisioned myself happy, healthy, and thriving. I found bravery and strength in sharing my story.

The answer truly lies in **addressing the immune system**, as Graves and TED are **autoimmune conditions** which affect the thyroid, not the result of a faulty or diseased thyroid itself. Addressing and removing the underlying triggers and imbalances will bring harmony to the immune system and therefore reduce these conditions, so that we may thrive. It took a lot of learning, advocating for myself, making healthy choices, saying no more often, canceling plans, choosing myself, choosing my health. Though we may not eliminate it completely forever, guarantee remission, or prevent it from flaring up again, it is up to us to nurture our whole being into an ideal, healthy state of thriving, rather than just keeping it at bay, and only surviving.

Thriving is a choice. ;)

What's your story?

LETS GET TO KNOW *YOU*

How about you, what's your story? I just shared my Graves' story: the highs, lows, and everything in between. Now, it's your turn. When I started my healing journey, I felt so lonely. I craved connection, a safe space to share my struggles and feel understood by others who just got it. I didn't know where to turn or who could truly relate. That's why I created this space: to ensure no one else has to feel as isolated as I did.

This is your safe space, where you can share your journey, feel supported, and connect with a community that's been there too. Your story has power, whether it's been a few months or years long, it matters. It can encourage others and help you feel seen and understood.

Here are some prompts to help you get started:
Who Are You?

- What's your name, and where are you from?
- What's something you love to do (your passion, hobby, or something that brings you joy)?
- If you could describe yourself in one word, what would it be?

Your Diagnosis Journey

- When were you diagnosed with Graves' or TED?
- What symptoms did you experience before your diagnosis?
- How did it feel when you finally received your diagnosis?

Your Experience Living with Graves' and TED

- What has been the most challenging part of your journey?
- Are there moments of resilience, self-discovery, or joy you'd like to share?
- How do you care for yourself now: mentally, physically, or emotionally?

Your Hopes and Reflections

- What's one thing you've learned about yourself on this journey?
- What advice or encouragement would you offer to someone just starting out?
- What are you most excited or hopeful about as you look ahead?

Once you're ready to share your story, join our Facebook group (facebook.thyroidloveclub.com) to meet others who are walking this path too. It's a safe, supportive space to share, ask questions, and celebrate wins, big or small. You can also connect with me on Instagram @thyroidloveclub. I'd love to hear your story on there and we have a community chat going as well.

This is your community now, a place where you're never alone. I'm so glad you're here.

Who this book is & isn't for....

HELLO, MY FELLOW THYRIVING FRIENDS!

This book is for...

This is for anyone who felt like their soul didn't recognize their body anymore.

This is for anyone who couldn't recognize themselves in the mirror anymore, who cried because they didn't fit into their clothes, who felt mutated because of unpredictable & unexpected changes in their eyes, face, and body.

This is for anyone who thought it wouldn't happen to them.

This is for anyone with a wonky, bulging, lopsided, droopy eye, that you didn't even bother looking at in the mirror anymore after a while because you were tired of crying.

This is for anyone who couldn't physically do the once simple things that they used to love or excel at, because they were so fatigued, weak, achy, tired.

This is for anyone who felt like their soul was tired.

This is for anyone who felt isolated and misunderstood.

This is for anyone who hesitated making plans because they ended up being too fatigued or anxious to keep them / know they would most likely have to cancel.

This is for anyone who pushed themselves too hard and needed days, weeks, or months to recover.

This is for anyone who learned the true meaning of boundaries, and the true value of health.

This is for anyone who lost faith in their own body.

This is for anyone looking for someone who can relate.

This is for anyone looking for community, good vibes, positive and healing collective energy.

Who this book is & isn't for....

This book is not for you if...

If you are looking for a "get perfect quick cheat" and are not willing to seek the help of a professional, or make diet / lifestyle changes.

You may not feel "perfect" ever.
It's about embracing your imperfections, appreciating yourself at your best and at your worst. It's not about expectations. You can throw your expectations out of the window. Of a speeding car. Off a cliff.

It won't be quick.
Welcome to your healing journey. It can take weeks, months, years. It will probably take a few months to notice small differences. It's about letting go of time constraints and expectations, trusting yourself and trusting the journey. Think of it as art. It can't be rushed.

There's no cheat code.
There's not one miracle drug, supplement, vitamin, mineral, herb, exercise, diet, or lab test that's going to solve your problems or cure any ailment. It's a balance of multiple things, and it's super different from person to person. These all work in harmony to find the best solution for everyone's different composition.

You need to follow up with a healthcare professional.
Do not go into this alone. Whether it is your endocrinologist (who may even be gaslighting you), your primary care physician, or even health coach, you need to at least be on top of your lab work and vitals. I highly recommend seeing a functional health provider or a naturopathic doctor in addition to your endocrinologist if you ultimately want to operate at your most optimal level.

Chapter 1
INTRODUCTION
TO GRAVES DISEASE (AUTOIMMUNE HYPERTHYROIDISM)

Let's start with the basics. When I was first diagnosed, I felt so lost and confused. This chapter breaks down what Graves' disease actually is, who it affects, and how it can impact your whole body, not just your thyroid.

Graves' disease is a complex autoimmune condition that disrupts thyroid function and hormone levels, often causing noticeable changes in the thyroid gland. While the exact cause isn't fully understood, it's generally thought to result from a combination of genetic, environmental, and hormonal factors. Symptoms can vary widely, including an overactive thyroid (hyperthyroidism), elevated thyroid hormone levels, and, in some cases, physical changes to the thyroid itself.

At its core, Graves' disease stems from the immune system mistakenly attacking the thyroid, causing it to produce excess hormones. While the thyroid is the primary target, the condition can also affect the eyes, causing Graves' ophthalmopathy, which may lead to vision disturbances and eye discomfort. In some cases, the skin can be affected, resulting in redness and thickening around the shins and feet. Additionally, the overproduction of thyroid hormones can impact heart health, muscle strength, and energy levels.

Hyperthyroidism symptoms include weight loss, increased heart rate, anxiety, and difficulty sleeping (insomnia), persistent fatigue, muscle weakness, increased sensitivity to heat, frequent bowel movements, and irregular menstrual cycles in women. Graves' ophthalmopathy may develop, and can lead to eye-related symptoms like bulging eyes, double vision, and eye irritation. In rare cases, some may experience Graves' dermopathy, characterized by skin changes such as redness and thickening on the shins and feet. Symptoms can vary significantly from person to person, making diagnosis and management challenging.

Its important to distinguish that Graves is an **autoimmune** disorder, not a thyroid disease. The immune system is out of balance and needs help, and it is taking it out on your poor thyroid. There most likely is nothing wrong with your thyroid! It is just the victim of a dysregulated immune system.

PREVALENCE AND INCIDENCE RATES



Graves' disease is the most common cause of hyperthyroidism. It is considered a rare disease, as it affects 30 out of 100,000 people according to the World Health Organization. It is a prevalent endocrine disorder predominantly affecting individuals in their reproductive years. Women are significantly more likely to develop Graves' disease than men, with a ratio of about 7:1.

The condition often appears between the ages of 30 and 50, though it can occur at any age. Depending on which study you look at, Graves' affects roughly 0.5% to 2% of people worldwide.

Graves' may be considered rare, but if you're reading this, you are far from alone. In the chapters ahead, we'll walk through the causes, symptoms, labs, treatments, and the root-cause work that helped me go from surviving to thriving, so you can make informed decisions and advocate for yourself with confidence.



HEALTH IMPLICATIONS
OF GRAVES DISEASE

Graves' is so much more than a thyroid problem. When it's not well managed, it can affect almost every system in your body. Here's what to watch for, from your heart and eyes to your bones, mood, and cycle.

Graves' disease, if left untreated or not properly managed, can have various health implications affecting multiple systems in the body. Such as:

1. Thyroid Dysfunction:

- Graves' disease is characterized by hyperthyroidism, leading to an overproduction of thyroid hormones. This imbalance can affect metabolism, energy levels, and various physiological processes.

2. Cardiovascular Complications:

- **Increased Heart Rate (Tachycardia)**: Hyperthyroidism can lead to a rapid heart rate, potentially resulting in palpitations, chest pain, and an increased risk of arrhythmias.
- **Hypertension**: Graves' disease may contribute to elevated blood pressure, increasing the risk of cardiovascular issues.

3. Ophthalmic Complications (Graves' Ophthalmopathy):

- Also known as Thyroid Eye Disease or TED for short.
- **Bulging Eyes** (Exophthalmos): Inflammation of the tissues behind the eyes can cause the eyes to protrude, leading to vision changes and discomfort.
- **Double Vision, Eye Irritation**: Graves' ophthalmopathy can cause double vision, eye irritation, and light sensitivity.
- Can lead to long term vision loss and blindness.

4. Dermatological Manifestations:

- **Skin Conditions:** Graves' disease may contribute to skin issues such as redness, swelling, and sometimes a condition called pretibial myxedema.

5. Muscle Weakness and Fatigue:

- Hyperthyroidism can lead to muscle weakness, persistent fatigue, and overall weakness in the body.

CONTINUED...

6. Emotional and Mental Health:

- **Anxiety and Irritability**: Hyperthyroidism can contribute to heightened anxiety, irritability, and emotional instability.
- **Feelings of isolation**, hopelessness, fear, insecurity due to physical changes in the body.
- **Insomnia**: Trouble sleeping is common, and poor sleep makes anxiety and low mood even harder to handle.

7. Weight Loss and Nutritional Deficiencies:

- Increased metabolism and potential difficulties with nutrient absorption may lead to weight loss and nutritional deficiencies.

8. Bone Health:

- Long-term hyperthyroidism can affect bone density, increasing the risk of osteoporosis and fractures.

9. Reproductive Health:

- Graves' disease can impact menstrual cycles and fertility in women. Pregnancy may pose risks and require careful management.

10. Thyroid Storm (rare but serious complication):

- In severe cases, uncontrolled hyperthyroidism can lead to a life-threatening condition known as thyroid storm, characterized by extreme symptoms such as high fever, rapid heart rate, and altered mental state.

The good news is that most of these complications can be prevented. Work closely with your healthcare team, and don't wait to get help when something feels off. Working with a functional health provider or naturopathic endocrinologist on your health care team will provide you with all of the options to manage this condition conventionally AND naturally, addressing nutritional needs and root causes.



Chapter 2

SYMPTOMS OF GRAVES AND DIAGNOSIS

Graves' can show up in so many different ways, and the early signs are easy to brush off as stress, anxiety, or 'just a busy season.' This chapter covers the common and not-so-common symptoms, how Graves' is diagnosed, and exactly which labs to ask your doctor for.

COMMON SIGNS AND SYMPTOMS

01

RAPID OR IRREGULAR HEARTBEAT

People with Graves' disease often experience a heightened heart rate or irregular heart rhythm, contributing to cardiovascular symptoms associated with the condition.

02

SWEATING OR TROUBLE TOLERATING HEAT

Increased perspiration/sweating and difficulty tolerating heat are common with Graves' disease, due to the impact of elevated thyroid hormone levels on the body's thermoregulatory mechanisms.

03

SHAKY HANDS, MUSCLE WEAKNESS

Tremors in the hands and generalized muscle weakness are prevalent symptoms, further indicating the impact of excessive thyroid hormone production on neuromuscular function.

04

NERVOUSNESS, IRRITABILITY, TROUBLE SLEEPING, FATIGUE

People often experience nervousness, irritability, and trouble sleeping due to the overstimulation of their nervous system by excess thyroid hormones. This can also lead to persistent fatigue, even when they appear to have ample energy.

05

WEIGHT LOSS, DESPITE AN INCREASED APPETITE

Unintentional weight loss, coupled with an increased appetite, is a hallmark of Graves' disease, highlighting the metabolic imbalances caused by hyperthyroidism.

06

FREQUENT BOWEL MOVEMENTS

Gastrointestinal symptoms, such as increased frequency of bowel movements, are common, due to the influence of elevated thyroid hormones on digestive processes.

07

AN ENLARGED THYROID GLAND, CALLED A GOITER

The thyroid gland becomes visibly enlarged, forming a goiter, which is a palpable and visible swelling in the neck, indicative of the autoimmune assault on the thyroid in Graves' disease.

UNCOMMON SIGNS AND SYMPTOMS

01

PRETIBIAL MYXEDEMA, SKIN PIGMENTATION CHANGES

A rare skin manifestation of Graves' disease where the immune system mistakenly attacks the skin, causing it to become thick, swollen, and waxy. It is believed to be caused by the same autoimmune process that targets the thyroid, leading to the accumulation of glycosaminoglycans (a type of sugar-protein molecule) in the skin. The skin may develop areas of darker or lighter pigmentation.

02

BRITTLE NAILS

Graves' disease can cause nails to become weak and prone to splitting or breaking.

03

HAIR TEXTURE CHANGES

The hair may become unusually fine, thin, or brittle, leading to increased hair loss.

04

LOCALIZED SWEATING

Some may experience excessive sweating in specific areas, such as the palms or soles of the feet.

05

UNEXPLAINED WEIGHT GAIN

Although Graves' disease usually causes weight loss, some people may experience unexpected weight gain. It can occur due to fluctuations in thyroid hormone levels, where periods of hypothyroidism (low thyroid function) might alternate with hyperthyroidism. Additionally, some individuals may develop insulin resistance or experience changes in appetite and metabolism, leading to unexpected weight gain.

06

PERIODIC PARALYSIS

Temporary episodes of muscle weakness or paralysis can occur, particularly in the face or limbs.

07

ANXIETY, DEPRESSION

Graves' disease can cause anxiety and depression as a result of hormonal imbalances that affect brain chemistry and emotional regulation. The physical symptoms and stress of living with the condition can also contribute to or worsen these mental health challenges.

08

COGNITIVE ISSUES (MEMORY, BRAIN FOG)

Some people with Graves' disease may have difficulty concentrating, brain fog, or experience memory lapses.

DIAGNOSTIC CRITERIA & TESTS

Diagnosing Graves involves a comprehensive evaluation of ones medical history, physical examination, and specific tests. There isn't a single test that definitively diagnoses Graves; a combination of symptoms and tests is used.

1. Medical History and Physical Examination: Healthcare providers will inquire about symptoms related to hyperthyroidism, such as rapid heartbeat, weight loss, and emotional changes. A physical exam may reveal signs like goiter (enlarged thyroid), tremors, or eye-related issues.

2. Blood Tests: Blood work is how Graves' gets confirmed. Your doctor will check your thyroid hormones and antibodies, and may also check things like blood sugar to get the full picture. Common laboratory tests for Graves' disease include:

1. **Thyroid-Stimulating Hormone (TSH)**: TSH levels are often decreased in Graves' disease due to the overstimulation of the thyroid gland.
2. **Free Triiodothyronine (Free T3)** and **Free Thyroxine (Free T4)**: Elevated levels of free T3 (active thyroid hormone) and free T4 (inactive thyroid hormone) are characteristic of hyperthyroidism, indicating an overactive thyroid.
3. **Thyroid Antibodies**:
    - **Thyroid Stimulating Immunoglobulin (TSI)**: Elevated levels of TSI are associated with Graves' disease and contribute to the overstimulation of the thyroid.
    - **Thyrotropin Receptor Antibodies (TRAb):** TRAb, including TSI or Thyroid *Stimulating* Immunoglobulin, as well as TBII (thyrotropin binding *inhibitory* immunoglobulins) are specific to Graves' disease and play a key role in stimulating or inhibiting the thyroid, respectively.

3. Ultrasound Imaging: Neck ultrasound imaging is used to assess the size and condition of the thyroid gland. However, not everyone will show distinct ultrasound findings, but the absence of such findings doesn't exclude a diagnosis.

4. Thyroid uptake and scan: involves taking a small amount of radioactive iodine orally to measure how much your thyroid absorbs, with high absorption levels potentially indicating Graves' disease.

5. Functional Lab Testing: Investigate further with functional medicine lab tests such as thyroid panels, hormonal assessments, chronic infection testing, heavy metals, food sensitivities, and comprehensive stool testing to explore potential underlying factors contributing to Graves' disease. Additional tests may be recommended to rule out conditions mimicking Graves' symptoms.

THYROID LABS EXPLAINED

When diagnosing and managing Graves' disease, several lab tests are commonly used to evaluate thyroid function, detect autoantibodies, and assess the overall impact of the condition. Unfortunately, many practitioners only look at TSH and T4 to assess thyroid function, but this method is dated. A competent practitioner will do a comprehensive scan to check most of these listed below. i encourage you to ask your doctor to check at least these first five. Here's a breakdown of the key tests:

1. Thyroid-Stimulating Hormone (TSH) Test

- What It Measures: TSH is a hormone produced by the *pituitary gland* that regulates the production of thyroid hormones (T3 and T4) by the thyroid gland. It tells the thyroid to create and release more thyroid hormone. TSH is like a little messenger that tells your thyroid when to make more or less energy for your body. When TSH is high, it's asking for more energy, and when it's low, it's telling the thyroid to slow down.
- Relevance to Graves' Disease: TSH levels are typically low because the thyroid is overactive and producing excess hormones, which suppresses TSH production. Indicates hyperthyroidism.

2. Free Thyroxine (Free T4) Test

- What It Measures: Free T4 measures the level of unbound thyroxine, the main hormone produced by the thyroid.
- Relevance to Graves' Disease: Elevated free T4 levels are often seen in Graves' disease due to the overproduction of thyroid hormones, confirms the presence of hyperthyroidism.

3. Free Triiodothyronine (Free T3) Test

- What It Measures: Free T3 measures the level of unbound triiodothyronine, the active form of thyroid hormone.
- Relevance to Graves' Disease: In some cases of Graves' disease, free T3 may be elevated even when free T4 is normal. High levels support the diagnosis of hyperthyroidism.

4. Reverse T3 (rT3) Test

- What It Measures: rT3 is an inactive form of T3 that can be produced during times of stress or illness.
- Relevance to Graves' Disease: Elevated rT3 levels may indicate that the body is converting T4 to the inactive rT3 instead of the active T3. This can sometimes occur in hyperthyroid states or in conditions where the body is under significant stress.
- Interpretation: High rT3 levels can indicate a state of thyroid hormone imbalance, and they may contribute to symptoms of hypothyroidism even in the presence of high free T3 or T4.

5. Thyroid-Stimulating Immunoglobulin (TSI) Test

- What It Measures: TSI is an antibody that stimulates the thyroid gland to produce excess thyroid hormone.
- Relevance to Graves' Disease: High levels of TSI confirm an autoimmune origin for hyperthyroidism, specifically Graves' disease.

THYROID LABS EXPLAINED

6. Thyroid Peroxidase Antibodies (TPOAb) Test

- What It Measures: TPOAb targets thyroid peroxidase, an enzyme involved in thyroid hormone production.
- Relevance to Graves' Disease: While TPOAb is not specific to Graves' disease, its presence can support an autoimmune thyroid disorder diagnosis.

7. Thyroid Receptor Antibodies (TRAb) Test

- What It Measures: TRAb includes TSI and blocking antibodies also known as TBII (thyrotropin binding inhibitory immunoglobulins) that target the TSH receptor on thyroid cells.
- Relevance to Graves' Disease: High TRAb levels are highly specific to Graves' disease.
- Interpretation: Elevated TRAb levels confirm the diagnosis and may correlate with disease severity.

8. Radioactive Iodine Uptake (RAIU) and Thyroid Scan

- What It Measures: This test evaluates how much radioactive iodine is absorbed by the thyroid gland and how it is distributed throughout the gland.
- Relevance to Graves' Disease: In Graves' disease, the thyroid gland usually takes up more iodine than normal, resulting in a high RAIU.
- Interpretation: High iodine uptake and diffuse enlargement of the thyroid on the scan suggest Graves' disease.

9. Erythrocyte Sedimentation Rate (ESR) or C-Reactive Protein (CRP)

- What It Measures: These tests measure inflammation in the body.
- Relevance to Graves' Disease: Elevated ESR or CRP levels can indicate inflammation, which may be seen in thyroid eye disease (TED), a complication of Graves' disease.
- Interpretation: While not specific to Graves' disease, elevated levels may indicate an active inflammatory process.

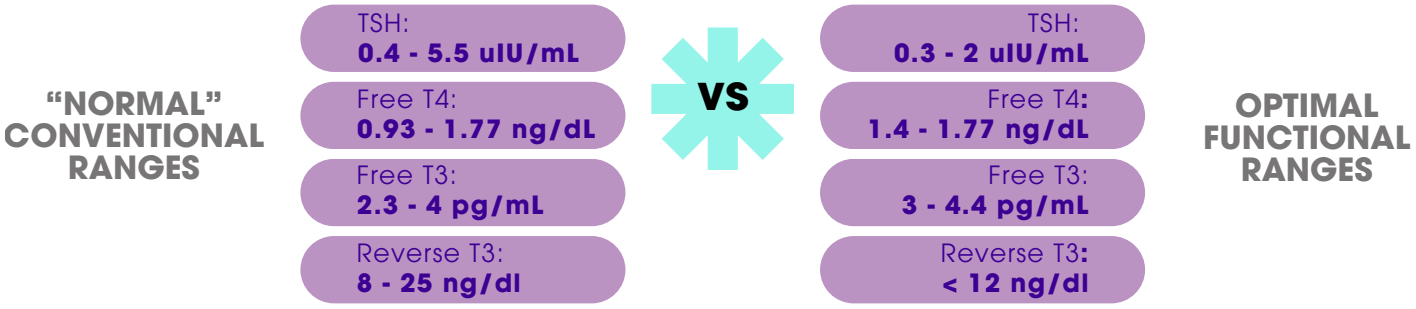
10. Liver Function Tests

- What It Measures: These tests assess the liver's function by measuring levels of liver enzymes and bilirubin. Liver function tests (LFTs) include ALT, AST, ALP, GGT, bilirubin, albumin, and total protein, all of which help assess liver health by detecting signs of liver damage or disease.
- Relevance to Graves' Disease: Hyperthyroidism can affect liver function, and some treatments for Graves' disease, such as antithyroid drugs, can impact the liver.
- Interpretation: Elevated or abnormal levels in these tests may indicate liver dysfunction, bile duct problems, or other related conditions. It may indicate the need for modification of treatment.

11. Complete Blood Count (CBC) + Ferritin

- What It Measures: A CBC evaluates the overall health of your blood, including red blood cells, white blood cells, and platelets. Ferritin tells you about your iron stores.
- Relevance to Graves' Disease: Some treatments for Graves' disease, particularly antithyroid medications, can cause blood disorders. Useful to rule out anemia.
- Interpretation: Abnormal CBC results may indicate side effects of treatment and necessitate changes in medication. Low ferritin may indicate need for supplementation.

“NORMAL” VS “OPTIMAL” THYROID LEVELS



When it comes to checking thyroid function, conventional medicine and functional medicine often look at things a bit differently, especially when interpreting lab results. In conventional medicine, doctors usually focus on diagnosing obvious thyroid problems, like hypothyroidism or hyperthyroidism, using standard reference ranges for thyroid-stimulating hormone (TSH) and thyroid hormones (T3 and T4). These ranges are designed to flag major issues with the thyroid that need treatment. For instance, a TSH level between 0.5 and 4.5 mIU/L is generally considered "normal." If your TSH falls within this range, your thyroid is typically seen as functioning fine, even if you're experiencing symptoms that suggest otherwise.

Functional medicine, on the other hand, uses narrower, more "optimal" ranges to evaluate thyroid function. Functional providers often feel that the conventional ranges are too broad and might miss subtle imbalances that can still cause symptoms. An "optimal" TSH range might be considered between 0.3 and 2 mIU/L. The idea is that many people may start experiencing symptoms like fatigue, weight gain, or mood changes even if their TSH is within the conventional "normal" range.

Beyond just TSH, functional medicine puts a lot of emphasis on checking free T3 and free T4 levels, as well as thyroid antibodies (like TSI and TRAb antibodies) to get a more complete picture of thyroid health. Free T3, which is the active form of thyroid hormone, is especially important because it directly influences how your body produces energy and manages metabolism. In functional medicine, doctors often look for free T3 levels to be in the upper half of the reference range, rather than just being "in the normal range."

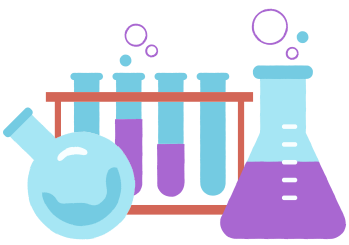
Functional medicine also looks at reverse T3 (rT3) levels, which aren’t usually included in standard thyroid tests. High rT3 can mean your body is converting T4 (the storage form of thyroid hormone) into rT3 instead of the active T3, leading to symptoms of hypothyroidism even if your TSH and T4 levels seem normal. This can happen due to stress, chronic illness, or nutrient deficiencies and might be missed in a conventional approach

CONVENTIONAL VS FUNCTIONAL LAB TESTING & INTERPRETATION

The main difference between conventional and functional medicine approaches is in their focus. Conventional medicine aims to diagnose and treat diseases based on clear lab abnormalities, while functional medicine seeks to optimize health and prevent problems by addressing more subtle imbalances that could still affect how you feel. Treating symptoms vs preventing symptoms. A functional practitioner looks at your labs, but also at YOU: your symptoms, your lifestyle, and your history. Then they build a plan around all of it. That means problems get caught earlier, and you can start feeling better even when standard tests say you're "fine."

In addition to focusing on lab results, functional medicine practitioners often explore other factors that could be influencing thyroid function, such as gut health, adrenal function, toxin overload, mycotoxin (mold) exposure, and nutrient levels. For example, poor gut health can interfere with the absorption of essential nutrients like iodine, selenium, and zinc, all of which are necessary for thyroid hormone production and conversion. our thyroid doesn't work in a bubble. Heal the gut, and the thyroid often follows.

Functional medicine also emphasizes the role of lifestyle factors, such as stress management, sleep, and diet, in maintaining optimal thyroid function. Chronic stress can lead to elevated cortisol levels, which may suppress thyroid function and increase reverse T3, further complicating the picture. By incorporating stress reduction techniques, dietary changes, and targeted supplementation into a treatment plan, functional medicine seeks to address the root causes of thyroid dysfunction, rather than just managing symptoms. This is especially helpful if you've been told your labs are normal but you still feel awful.



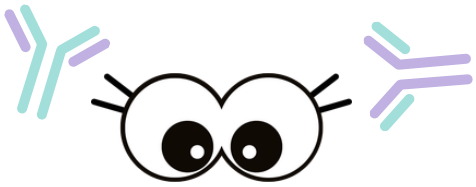


UNDERSTANDING ANTIBODIES

Graves' disease is caused by an autoimmune response, where the body's immune system mistakenly attacks the thyroid gland. The main culprits in this attack are thyroid antibodies, specifically Thyroid-Stimulating Immunoglobulins (TSI) or Thyroid Receptor Antibodies (TRAb) also referred to as TBII or thyrotropin binding inhibitory immunoglobulins . Unlike in Hashimoto's thyroiditis, where the immune system destroys the thyroid leading to low hormone levels, in Graves' disease, these antibodies act like Thyroid-Stimulating Hormone (TSH). They bind to TSH receptors on the thyroid gland, tricking it into making too much thyroid hormone (T3 and T4). This overproduction leads to symptoms like a fast heartbeat, weight loss, and anxiety.

These antibodies are important for diagnosing Graves' disease and can also indicate how severe the condition is. Normal levels for TSI are typically **below 1.3 IU/L**, while levels above 1.8 IU/L are commonly associated with Graves' disease. TRAb levels are ideally **less than 1.75 IU/L**, with higher levels indicating greater disease activity and potentially more severe symptoms. TSI directly stimulates the thyroid to produce more hormones, while TRAb can either stimulate or block the thyroid receptor. In Graves' and TED, elevated TSI is associated with hyperthyroidism and eye-related symptoms, while TRAb levels can help gauge disease activity and severity, providing more insight into treatment options. By checking these antibodies over time, practitioners can see how well treatments are working and whether the disease is likely to come back. Even if thyroid hormone levels seem normal, high TSI/TRAb levels can show that the immune system is still attacking the thyroid, which might lead to a relapse or complications like Thyroid Eye Disease (TED).

While TSI/TRAb are the most specific antibodies for Graves' disease, other antibodies like Thyroid Peroxidase Antibodies (TPOAb) can also be present. TPOAb is more commonly linked to Hashimoto's thyroiditis, but it can appear in Graves' disease too. When both TRAb and TPOAb are present, it suggests a more complicated autoimmune process, where the immune system is both overstimulating and potentially damaging the thyroid. TRAb is found in about 95% of people with Graves' disease, and around 70% also have elevated TPOAb levels. The severity of the disease often correlates with the levels of TRAb present.



ANTIBODIES AND THYROID EYE DISEASE

Thyroid Eye Disease (TED), also known as Graves' orbitopathy, is a common complication of Graves' disease, closely tied to the same thyroid antibodies (TRAb or TSI). In TED, these antibodies mistakenly target the tissues around the eyes, causing inflammation and swelling in the eye socket. This leads to symptoms like bulging eyes (proptosis), eye pain, double vision, and in severe cases, vision loss. TED can occur even if thyroid hormone levels are normal, which means it needs special attention from both endocrinologists and eye doctors. The earlier TED is treated, the better your chances of avoiding lasting changes to your eyes. The higher the levels of TSI (Thyroid-Stimulating Immunoglobulins) and TRAb (Thyroid Receptor Antibodies) the more active TED tends to be, though it doesnt always mean its more severe in every case. I have seen low numbers with high TED activity, and high numbers with low activity.

TSI (Thyroid-Stimulating Immunoglobulins)
High TSI levels are directly linked to increased activity of TED. TSI antibodies stimulate the thyroid gland to produce excess thyroid hormones, which can worsen inflammation around the eyes. Elevated TSI levels are strongly associated with the development of eye symptoms, such as bulging, redness, and dryness. In TED, TSI also targets orbital tissues, which can lead to fibroblast activation, swelling, and inflammation in the eye muscles and surrounding tissues.

TRAb (Thyroid Receptor Antibodies)
TRAb levels also provide insights into TED, as they can act in two ways: stimulating or blocking the TSH receptor. When TRAb stimulates the receptor, it increases thyroid hormone production, fueling inflammation around the eyes and causing more severe TED symptoms. Monitoring TRAb levels can help gauge disease activity, as high TRAb levels are associated with a more aggressive TED course and a greater likelihood of complications like eye bulging (proptosis), double vision, and, in extreme cases, optic nerve compression.

Disease Management and Prognosis: High TSI and TRAb levels often indicate active TED, suggesting the need for more intensive management or preventative therapies. Tracking these levels over time helps healthcare providers assess the success of treatment, as declining levels of TSI and TRAb can suggest a lower risk of TED progression and recurrence.

Chapter 3

THYROID EYE DISEASE

AKA: GRAVES ORBITOPATHY, GRAVES EYE DISEASE, OR GRAVES OPHTHALMOPATHY

This chapter is close to my heart. TED changed the way I saw myself in the mirror, and I know how scary and isolating it can feel. Here we'll cover what TED is, the symptoms, where you might be on Rundle's Curve, and the treatments and everyday tips that helped me most.

Thyroid Eye Disease (TED), also called Graves' orbitopathy or ophthalmopathy, is an autoimmune condition that affects the tissues around the eyes, often showing up in people with Graves' disease but sometimes can be seen in those with Hashimoto's too. TED can be anything from mildly uncomfortable to vision-threatening, which is why it deserves real attention to improve the quality of your life.

TED is an autoimmune condition, where the immune system mistakenly attacks tissues called fibroblasts around the eyes. This autoimmune response leads to inflammation, swelling, and tissue remodeling. Once TED begins, it is its own autoimmune condition, meaning that one can be in remission from Graves but still have active TED. That is why some people who remove their thyroid, unknowingly, thinking it will put their Graves in remission, can go on to develop TED. Factors such as genetics, smoking, and thyroid dysfunction contribute to the development and progression of TED. Diagnosis typically involves a combination of clinical evaluation, imaging studies like CT or MRI scans, and blood tests to assess thyroid function and antibodies.

TED is unfortunately common among those with thyroid problems, especially Graves' disease. Around 25% to 50% of people with Graves' will develop TED at some point. It's more common in women, who are about 5 to 10 times more likely to get it than men. TED can show up with mild symptoms or become more severe, affecting daily life in different ways. If you have Graves' disease, there's a good chance you might experience TED, and it often shows up around the same time or after your diagnosis.

Life with TED can be debilitating at times, depending on the severity. It's more than just eye issues, it can affect your daily routines and make even simple tasks feel challenging. From constant discomfort and vision problems to dealing with the insecurity and emotional toll of changes in appearance, TED can impact everything from how you feel about yourself to how you interact with others. It's tough, and managing it often means juggling medical treatments, lifestyle changes, and support from loved ones to find some relief and maintain a good quality of life.

TED SYMPTOMS & DIAGNOSIS

Symptoms

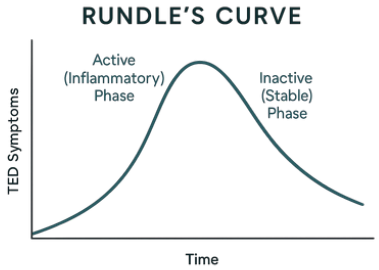
Symptoms of TED can vary in severity and impact every day life:

- **Bulging Eyes (Proptosis):** The eyes may protrude due to inflammation and swelling of the tissues behind the eyeball. May affect one or both eyes.
- **Eye Irritation:** Sensation of dryness, itching, or a gritty feeling in the eyes.
- **Dry Eyes and Irritation:** TED often leads to dry eyes, increased tearing, and a gritty sensation. If eye bulging is present, it may be difficult to completely close the eye lids, leaving the eye ball exposed and prone to drying out.
- **Redness and Swelling:** Inflammation of the eyes and surrounding tissues.
- **Double Vision:** Difficulty seeing clearly due to swelling and misalignment of the eyes.
- **Pain or Discomfort:** Pain or aching around the eyes, which may worsen with eye movement.
- **Exophthalmos:** Protrusion of the eyes from the eye socket.
- **Vision Changes:** Blurred vision or other visual disturbances.
- **Eyelid Retraction:** Upper eyelids being pulled back, causing a staring appearance.
- **Eyelid Swelling:** Puffiness or swelling of the eyelids.
- **Photophobia:** Sensitivity to light.
- **Tear Production Issues:** Either excessive tearing or a dry feeling due to reduced tear production.
- **Difficulty Closing Eyes:** Trouble fully closing the eyes, especially at night.
- **Eye Pressure:** Sensation of increased pressure or fullness in the eyes.
- **Limited Eye Movement:** Restricted ability to move the eyes in certain directions.
- **Thickened Skin:** Thickening of the skin around the eyes.
- **Vision Loss:** In severe cases, TED can compress the optic nerve, leading to vision impairment or loss.

Diagnosis

Diagnosing Thyroid Eye Disease (TED) involves a mix of clinical assessments, imaging, and lab tests. The doctor will start with a thorough eye exam and ask about symptoms like bulging eyes or swollen lids. They might use CT or MRI scans to get a closer look at the tissues around your eyes (called orbits). They can use tools in-office to measure the millimeters of protrusion or eyelid retraction. Blood tests help check your thyroid function (full thyroid panel, including TSH, free T3, free T4) and look for markers of autoimmune activity (antibody tests, specifically TSI and TRAb). Other tests, such as measuring eye protrusion with an exophthalmometer and visual field tests, help gauge the extent of the disease and its impact on vision.

WHAT IS RUNDLE'S CURVE?



Rundle's Curve is a timeline that shows the typical course of TED symptoms over time. Think of it like a visual guide that reflects what many patients go through. It can help you get a better sense of where you are and what might come next. It consists of two main phases, the Active (Inflammatory) Phase and Inactive (Stable) Phase.

The Active Phase (Inflammatory): 6 and 24 months

This is when symptoms are usually at their most intense. It often lasts between **6 and 24 months**, although this varies from person to person. During this phase, you might experience:

- Bulging eyes or pressure
- Swelling, redness, or puffiness
- Eye dryness or watering
- Light sensitivity
- Eye movement issues or double vision

This is the phase where inflammation is active and noticeable. It's also when many treatment options, including functional medicine support and medical therapies, can have the most impact.

The Inactive Phase (Stable): after 24+ months

Once inflammation settles down, TED enters a more stable phase. You might still experience the effects of the active phase, such as changes to your eye shape or function, but symptoms usually calm down.

During this time, the focus shifts to:

- Healing the gut and calming immune system triggers
- Supporting residual symptoms
- Rebuilding strength and confidence after what may have been a very intense period

Knowing where you are on Rundle's Curve can take away some of the fear. If you're in the thick of symptoms, it helps to know that this phase will eventually calm. TED doesn't stay this intense forever. Understanding this timeline helps you set realistic expectations, track progress, and feel more grounded. Of course, not everyone follows the curve exactly. But it's a helpful guide to validate your experience and remind you that things can and do shift.

No matter where you are in this process, you're not stuck. You're in motion. Healing is already happening, even if it doesn't always feel that way. Every step you take, from small changes in your diet to simply resting when needed, is a step toward more stability and ease. You're doing better than you think. And you're never alone on this path.

MANAGEMENT OF TED

Medical Treatments

Several medical treatments can help manage TED:

- **Corticosteroids**: Anti-inflammatory medications, such as prednisone or methylprednisolone, are commonly used to reduce inflammation. They are typically administered in high doses initially and then tapered off. May be given orally or via injection.
- **Radiation Therapy**: In some cases, radiation therapy is used to target and reduce inflammation in the eye tissues.
- **Immunosuppressive Drugs**: Medications like methotrexate or mycophenolate can help modulate the immune response.
- **Teprotumumab**: This monoclonal antibody targets insulin-like growth factor-1 receptor (IGF-1R) and has been shown to reduce proptosis and improve quality of life in TED patients, currently available as an infusion named Tepezza, to be administered by a healthcare professional. A second drug in this class, Lumvoa (veligrotug), was FDA approved in June 2026.

Surgical Interventions

In severe cases or when medical treatments are ineffective, surgical options may be considered:

- **Orbital Decompression Surgery**: This procedure involves removing bone or fat from the eye socket to create more space for the eye and relieve pressure on the optic nerve.
- **Strabismus Surgery**: Surgery to correct misalignment of the eyes can help alleviate double vision.
- **Eyelid Surgery**: Procedures to correct eyelid retraction or other eyelid abnormalities can improve eye closure and reduce dryness and irritation.

For the full list of medical and surgical treatments for TED, including IV steroids, Tepezza, Lumvoa, Actemra, orbital radiation, and surgery, see Chapter 7.

Coping and Support

Living with TED can be challenging, both physically and emotionally. Please don't try to carry this alone. Lean on your functional health providers, doctors, a support group, and a therapist if you need one. Connecting with others who have similar experiences can provide valuable emotional support and practical advice. Engaging in self-care and self-compassion exercises can make a huge difference. Remember that you are not alone, and to be kind to yourself.

FUNCTIONAL MANAGEMENT OF TED

Thyroid Eye Disease (TED) can be so extremely complex and unique to every person, and managing it gets easier with a holistic and personalized approach. Functional medicine seeks to find and tackle the root causes of TED, combining nutrition, lifestyle changes, and targeted therapies for a plan that's personalized for ones unique needs.

1. Comprehensive Assessment

- **Detailed Medical History:** Gathering information on the patient's health history, including thyroid function, autoimmune conditions, and any other relevant medical issues.
- **Lifestyle and Environmental Factors:** Examining factors such as diet, exercise, stress levels, sleep patterns, and exposure to environmental toxins.
- **Advanced Testing:** Utilizing specialized tests to assess thyroid function, inflammatory markers, gut health, nutritional deficiencies, and genetic predispositions.

2. Nutritional Interventions

- **Anti-inflammatory Diet:** Emphasizing whole, unprocessed foods rich in anti-inflammatory properties, such as fruits, vegetables, nuts, seeds, and fatty fish.
- **Elimination Diet:** Identifying and removing potential food sensitivities and allergens (e.g., gluten, dairy) that can trigger inflammation and autoimmune responses.
- **Phytonutrients:** "Eat the rainbow." Phytonutrient-rich foods include berries, pomegranate, leafy greens, bell peppers, turmeric, green tea, ginger, and sweet potatoes, all of which provide powerful antioxidants and anti-inflammatory benefits.
- **Nutrient Optimization:** Ensuring adequate intake of essential nutrients known to support thyroid and eye health, such as:
  - **Selenium:** Helps reduce inflammation and support thyroid function. Found in Brazil nuts, seafood, and eggs.
  - **Vitamin D:** Modulates immune function and reduces inflammation. Obtained from sunlight exposure and fortified foods or supplements.
  - **Omega-3 Fatty Acids:** Anti-inflammatory effects beneficial for TED. Found in fatty fish, flaxseeds, and walnuts.
  - **Curcumin (turmeric):** Reduces inflammation in TED by inhibiting inflammatory cytokines and enzymes, while also modulating oxidative stress and immune responses.

LIFESTYLE MODIFICATIONS FOR TED

3. Lifestyle Modifications

- **Stress Management:** Please do not overlook the fact that chronic stress can make autoimmune conditions worse. Emotional struggles are so common, and the mental toll of TED is sooo real. You may feel self-conscious or avoid social situations, which only adds to the stress. Techniques such as mindfulness, meditation, yoga, and deep breathing exercises can help reduce stress levels. Practicing deep breathing exercises during moments of heightened stress can help ground you and bring some peace. Getting outside for gentle walks, journaling, or even talking to a therapist about your feelings can be incredibly therapeutic. A simple self-care routine with real rest and good sleep can make the hard days just a little easier.
- **Support Groups:** It's helpful to find support groups, whether online or in person, where you can connect with others who understand what you're going through. These groups can provide encouragement and reduce feelings of isolation.
- **Regular Exercise:** Moderate physical activity can reduce inflammation, and enhance mood. Activities like walking, swimming, and gentle yoga are great. Avoid strenuous workouts like heavy cardio and HIIT, as these can cause stress and inflammation in the body.
- **Sleep Hygiene:** Your immune system resets while you sleep, so protect your sleep like it's medicine. Establishing a regular sleep schedule and creating a restful sleep environment are key steps. Avoid blue light at least 1 hour before bed, you can try to wear blue light glasses when looking at screens in the evening.
- **Smoking Cessation:** Smoking is one of the biggest risk factors for TED. Quitting smoking is critical, as smoking exacerbates TED and reduces the effectiveness of treatments.
- **Nutritional Support:** Fill your plate with colorful, anti-inflammatory foods to calm inflammation from the inside out. Key nutrients include phytonutrients (hint: eat the rainbow), selenium, vitamin D, and omega-3 fatty acids. You can use the shopping list from chapter 6 for guidance at the supermarket.

4. Eye Care

- **Hydration and Eye Care:**
  - Staying ***hydrated*** by drinking enough water throughout the day (at least 2 liters a day)
  - ***Lubricating eye drops*** such as artificial tears can help alleviate dryness and irritation. You can use more drops if needed during activities like reading, working on a computer, or driving. These activities cause your eyes to blink less, so they get more dry.
    - Nighttime lubricating eye drops or eye ointments can be helpful for keeping the eyes moisturized overnight, so you wake up with less irritation. Some eye ointments are longer lasting than drops, which makes them an ideal overnight choice.
  - ***Wearing hats and/or sunglasses*** to protect from wind, irritiants, strong rays of the sun and reduce photosensitivity (when eyes are extra sensitive to light). Take breaks from light if you can.
  - **Avoid direct heat or air conditioning** blowing in your eyes, especially while driving.
  - ***Using ice*** to soothe the eyes and calm inflammation. You can use ice cubes wrapped in paper towels, ice packs, ice roller balls, whatever you feel comfortable with. Apply for 30 seconds or less.
  - ***Castor oil*** can be applied topically to eye area (never inside the eye) and even to the thyroid area. It helps to moisturize and soothe the area and can even help with wrinkles.
  - ***Essential oils*** may be beneficial for those with hyperthyroidism such as lavender oil, frankincense, lemongrass, sandalwood, and myrrh. If applied topically, must be diluted with a carrier oil such as fractionated coconut oil or castor oil.
  - ***Sleep masks*** can be helpful at night to maintain darkness and keep dust out of eyes, especially if one has trouble shutting eye(s) completely.
  - When traveling, considering bringing your own ***pillowcase*** or put a towel over your pillow to keep dust out of your eyes. I like to travel with a satin pillowcase, its also good for your skin (less wrinkles) and hair (less breakage).
  - ***Head position*** can help, raising the head of your bed or sleeping on pillows can relieve pressure on the eyes.

SUPPLEMENTS FOR TED

5. Targeted Supplementation

1. Selenium

- Description: Selenium is a trace mineral essential for thyroid health and antioxidant defense.
- Mechanism of Action: Selenium helps reduce inflammation and oxidative stress, particularly in the thyroid gland, by supporting the production of selenoproteins, which have antioxidant properties.
- Dose: **100-200 mcg per day**.
- Warnings: High doses can be toxic, causing symptoms like gastrointestinal upset, hair loss, and nerve damage. Check levels in serum first.

2. Vitamin D

- Description: Vitamin D is a fat-soluble vitamin important for immune function and inflammation regulation.
- Mechanism of Action: Vitamin D modulates the immune system and reduces inflammation, potentially helping to manage autoimmune responses in TED.
- Dose: **1000-5000 IU per day**, depending on individual needs and levels.
- Warnings: Excessive intake can lead to hypercalcemia, which can cause nausea, weakness, and kidney problems.

3. Omega-3 Fatty Acids

- Description: Omega-3 fatty acids, found in fish oil, are essential fats with anti-inflammatory properties.
- Mechanism of Action: They reduce inflammation by modulating the production of inflammatory cytokines and prostaglandins.
- Dose: **1000-2000 mg of EPA and DHA** combined per day.
- Warnings: High doses can increase bleeding risk, especially if taken with blood-thinning medications.

4. **Curcumin (Turmeric)**

- Description: Curcumin is the active compound in turmeric, known for its anti-inflammatory and antioxidant properties.
- Mechanism of Action: Curcumin inhibits inflammatory pathways and oxidative stress, which can help reduce inflammation in TED.
- Dose: **500-1000 mg** of curcumin extract per day.
- Warnings: Can cause gastrointestinal upset in some individuals; avoid if you have gallbladder issues.

5. **N-Acetylcysteine (NAC)**

- Description: NAC is a precursor to glutathione, a major antioxidant in the body.
- Mechanism of Action: NAC supports detoxification and reduces oxidative stress by replenishing glutathione levels.
- Dose: **600-1200 mg per day**.
- Warnings: May cause gastrointestinal symptoms such as nausea and diarrhea.

SUPPLEMENTS FOR TED

6. Probiotics

- Description: Probiotics are beneficial bacteria that support gut health.
- Mechanism of Action: They help balance the gut microbiota, which can improve immune function and reduce inflammation.
- Dose: 1-100 billion CFUs (colony-forming units) daily, preferably with multiple different strains of live bacteria.
- Warnings: Generally safe, but may cause mild digestive discomfort initially.

7. Resveratrol

- Description: Resveratrol is a polyphenol found in red wine, grapes, and berries with antioxidant properties.
- Mechanism of Action: It reduces oxidative stress and inflammation, potentially protecting tissues affected by TED.
- Dose: **200-500 mg per day**.
- Warnings: High doses may cause gastrointestinal upset; interact with blood thinners.

8. Quercetin

- Description: Quercetin is a flavonoid with anti-inflammatory and antioxidant properties.
- Mechanism of Action: It inhibits the release of histamines and reduces inflammatory cytokines.
- Dose: **500-1000 mg per day**.
- Warnings: May interact with certain medications, such as blood thinners and antibiotics.

9. Berberine

- Description: Berberine is an alkaloid found in several plants, such as goldenseal and barberry.
- Mechanism of Action: It has antimicrobial properties and helps regulate blood sugar levels, which can reduce systemic inflammation. It is very beneficial for the gut microbiome.
- Dose: **500 mg two to three times per day**.
- Warnings: May cause gastrointestinal issues; should be used with caution in people with low blood pressure or blood sugar.

10. Heal-All Herb (Prunella vulgaris)

- Description: Heal-All Herb is known for its anti-inflammatory and antioxidant properties.
- Mechanism of Action: It helps modulate immune responses and reduce inflammation, which can help calm both the thyroid and the eyes.
- Dose: **300-500 mg of extract per day**.
- Warnings: Generally safe, but consult with a healthcare provider if pregnant or breastfeeding.

FUNCTIONAL MANAGEMENT OF TED (CONT'D)

6. Detoxification Support

Minimizing exposure to environmental toxins and supporting the body's natural detoxification processes are important:

- **Reduce Toxin Exposure:** Avoiding or minimizing exposure to environmental toxins such as BPA, heavy metals, and endocrine disruptors. Choose organic foods when possible. Swap household items for cleaner options (check ewg.org or Yuka app)
- **Support Liver Health:** Incorporating foods and supplements that support liver detoxification, such as cruciferous vegetables, broccoli sprouts, turmeric, and milk thistle.

7. Gut Health Optimization

Improving gut health can impact immune regulation and inflammation:

- **Gut-Healing Protocol:** Implementing a gut-healing protocol that may include eliminating inflammatory foods, incorporating gut-healing nutrients (e.g., glutamine, collagen, berberine and other anti-infective herbs), and using probiotics to restore healthy gut flora.
- **Addressing Leaky Gut:** Repairing the gut lining (intestinal permeability) takes away one of the biggest autoimmune triggers.

8. Integrative Therapies

Complementary therapies can provide additional support for managing TED:

- **Acupuncture:** Can help reduce inflammation, improve blood flow, and alleviate symptoms of TED.
- **Herbal Medicine:** Using anti-inflammatory and immune-modulating herbs such as turmeric, berberine, heal-all, and many others under the guidance of a healthcare professional.
- **Reiki**: energy healing techniques to promote relaxation, reduce stress, release blockages, and improve overall balance.

9. Emotional and Psychological Support

- **Therapeutic Support:** Engaging in therapy or counseling can help patients cope with the emotional and psychological challenges of living with TED. And please don't skip self-care. It's not a luxury.
- **Community Support:** Connecting with support groups and online communities can provide emotional support and shared experiences.

I cannot stress enough that managing TED is very personalized and unique to every individual and their circumstances. That's why a functional approach is so valuable, it emphasizes a comprehensive, individualized plan that addresses the root causes of the condition for each person. When you work on nutrition, lifestyle, supplements, detox, gut health, and the mind-body piece together, symptoms get easier to manage and life starts to feel like yours again. Build a team you trust, and keep learning, because new TED research comes out all the time.

Chapter 4
CAUSES AND RISK FACTORS

'Why did this happen to me?' I asked myself this over and over. The answer is rarely one single thing. Graves' develops when genetics, environmental triggers, and gut health line up in just the wrong way. This chapter breaks down each piece so you can start uncovering your own root causes.

THE TRIAD OF AUTOIMMUNITY: THREE FACTORS CONTRIBUTING TO THE DEVELOPMENT OF GRAVES/TED/HASHI

GENETIC PREDISPOSITION

- People with a family history of Graves' disease or autoimmune thyroid disorders may inherit specific genetic markers associated with an increased susceptibility to the condition.
- Specific genes related to immune system regulation and thyroid function contribute to the genetic predisposition.

ENVIRONMENTAL TRIGGERS

- Infections, both viral and bacterial, can act as environmental triggers, initiating or amplifying the autoimmune response in susceptible individuals.
- Chronic stress has been identified as a potential trigger, impacting the immune system and thyroid function, potentially contributing to the onset or exacerbation of Graves.
- Dietary factors, including excess iodine intake, play a role as environmental triggers, influencing the development and severity of Graves' disease. Other triggers may include gluten, soy, sugar, dairy, and other food sensitivities.
- Cigarette smoking is recognized as a risk factor, with evidence suggesting it may contribute to the severity of Graves' disease and its impact on thyroid function.
- Exposure to environmental toxins, including mold and heavy metals, and endocrine disruptors in every day products such as BPA, PCBs, pthlalates, perchlorates, and more.
- Hormonal shifts, especially during pregnancy and postpartum, can also trigger Graves.

INTESTINAL PERMEABILITY (LEAKY GUT)

- Recent research suggests a connection between Graves' disease and intestinal permeability, commonly referred to as "leaky gut."
- Disruptions in the gut barrier function may allow the passage of molecules into the bloodstream, triggering or enhancing the autoimmune response associated with Graves' disease.
- Molecular mimicry, where the immune system mistakes dietary proteins like gliadin (found in gluten) for thyroid tissue, can also play a significant role in this process. This mistaken identity can lead to an autoimmune attack on the thyroid.
- Bottom line: if you want to calm Graves/TED, you have to look at the gut.

GENETIC PREDISPOSITION

Graves' disease has a complex genetic component, and several genetic markers have been identified as potentially associated with an increased susceptibility to the condition. Some specific genetic markers and loci that have been implicated include:

1. **HLA-DR3 and HLA-DR5 Alleles:**
   - The human leukocyte antigen (HLA) system, particularly the HLA-DR3 and HLA-DR5 alleles, has been linked to an increased risk of autoimmune thyroid diseases, including Graves' disease. This is also the same gene that may make people more susceptible to mold toxicity.
2. **CTLA-4 (Cytotoxic T-Lymphocyte Antigen 4) Gene:**
   - Variants in the CTLA-4 gene have been associated with autoimmune disorders, including Graves' disease. CTLA-4 plays a role in regulating the immune response and preventing autoimmunity.
3. **TSHR (Thyroid-Stimulating Hormone Receptor) Gene:**
   - Mutations or polymorphisms in the TSHR gene, which encodes the thyroid-stimulating hormone receptor, have been implicated in Graves' disease. These genetic variations may contribute to the production of autoantibodies that stimulate the thyroid gland.
4. **FCRL3 (Fc Receptor-Like 3) Gene:**
   - Variants in the FCRL3 gene have been associated with autoimmune diseases, including Graves' disease. FCRL3 is involved in regulating immune cell function and signaling.
5. **IL2RA (Interleukin 2 Receptor Alpha) Gene:**
   - Genetic variations in the IL2RA gene, which encodes the interleukin 2 receptor alpha subunit, have been linked to autoimmune thyroid diseases, including Graves' disease. IL2RA plays a role in immune regulation and T-cell function.
6. **FOXP3 (Forkhead Box P3) Gene:**
   - Mutations in the FOXP3 gene, which is critical for the development and function of regulatory T cells (Tregs), have been associated with autoimmune diseases, including Graves' disease. Tregs play a key role in maintaining immune tolerance and preventing autoimmunity.

These genetic markers are just a few examples of the genetic complexity underlying Graves' disease susceptibility. It looks overwhelming, but here's the good news: your genes are not your destiny. Genetics may load the gun, but your environment pulls the trigger, and many of those triggers are things you can change. Further research is ongoing to better understand the genetic basis of Graves' disease and its interactions with environmental factors.

ENVIRONMENTAL TRIGGERS

Your genes set the stage, but environmental triggers are what kick the autoimmune response into gear. The good news is that many of these triggers are things you can find and change, which can calm Graves' and help keep it from flaring again. Specific triggers include:

1. **Infections:**
   - Viral and bacterial infections can act as environmental triggers by stimulating the immune system and potentially initiating or exacerbating the autoimmune response in susceptible individuals. Common viral infections such as **Epstein-Barr virus (EBV)**, and bacterial infections like **Heliobacter Pylori (HP)** and **Yersinia enterocolitica** have been implicated in Graves' disease development.
2. **Chronic Stress:**
   - Chronic stress has been identified as a potential trigger for Graves' disease. Stress can impact the immune system, adrenal function, and thyroid function, leading to HPA Axis dysregulation and potentially contributing to the onset or exacerbation of the autoimmune response.
3. **Dietary Factors:**
   - Excess iodine intake is a known environmental trigger for Graves' disease. Iodine is essential for thyroid hormone production, but excessive levels can stimulate thyroid hormone synthesis, exacerbating hyperthyroidism in susceptible individuals. It is confusing because it is also possible for iodine to lower thyroid levels as well.
4. **Cigarette Smoking:**
   - Cigarette smoking is recognized as a significant risk factor for Graves' disease. Smoking has been linked to increased severity of Graves' disease and its impact on thyroid function. It is believed that smoking may contribute to autoimmune thyroid disease by promoting inflammation and oxidative stress. It is the #1 risk factor for TED.
5. **Exposure to Environmental Toxins:**
   - Exposure to environmental toxins, including **mold, heavy metals** (such as lead, mercury, and cadmium), and **endocrine disruptors** like bisphenol A (BPA), polychlorinated biphenyls (PCBs), phthalates, and perchlorates, may contribute to the development and worsening of Graves' disease. These toxins can disrupt thyroid function, alter immune responses, and promote autoimmune reactions.

ENVIRONMENTAL INFECTIONS



Infections

Infections are important environmental triggers that can kickstart or worsen autoimmune conditions like Graves' disease in people who are genetically predisposed. They can serve as a "second hit" that activates or aggravates autoimmunity in some people.When infections occur, the immune system is activated to fight off the pathogens, but in some people, this response can mistakenly target the body's own tissues, like the thyroid. This mistaken attack can lead to the production of autoantibodies, such as TSI and TRAb, which may drive the progression or intensification of Graves' disease and related symptoms.

Viral Infections:

- **Epstein-Barr Virus (EBV):** Known for causing mononucleosis, EBV can lie dormant in immune cells and, when reactivated, may overstimulate the immune system. This reactivation has been linked to an increase in thyroid-stimulating autoantibodies that can spark or worsen Graves' disease symptoms.
    - EBV can infect B cells and persist in the body, reactivating periodically and potentially leading to immune system dysregulation. It may trigger Graves by stimulating production of thyroid-stimulating antibodies through molecular mimicry or by increasing immune cell activation and inflammation in genetically susceptible people (Coppola et al., 2021; Benvenga et al., 2020; Jafarzadeh et al., 2018).
- **Human Herpesvirus 6 (HHV-6):** This virus is linked to immune system dysregulation and inflammation. In people prone to autoimmunity, HHV-6 may lead to an immune attack on thyroid tissue, contributing to Graves' disease flares.
- **Coxsackievirus and Adenovirus:** These common viruses, affecting the heart and respiratory systems, can trigger immune responses that inadvertently target the thyroid, raising the risk of autoimmune reactions.

Bacterial Infections:

- **Yersinia enterocolitica:** This gastrointestinal bacterium has proteins similar to thyroid tissue. Due to this "molecular mimicry," the immune response against Yersinia can mistakenly cross-react with thyroid cells, promoting Graves' disease.
- **Helicobacter pylori:** Known for causing ulcers, H. pylori can create a state of inflammation in the body that may extend to the thyroid, potentially worsening autoimmune thyroid conditions like Graves'.
    - Studies suggest that it may trigger the autoimmune response seen in Graves, similar to its suspected role in Hashimoto's. H. pylori is thought to contribute to systemic inflammation and immune dysregulation, which can result in the production of thyroid-stimulating antibodies. This mechanism is often attributed to molecular mimicry, where antigens in H. pylori resemble thyroid antigens, prompting the immune system to mistakenly target the thyroid (Fusco et al., 2021; De Carvalho et al., 2020; Aghili et al., 2019).
- **Streptococcus pyogenes:** Often responsible for strep throat, this bacteria is known for triggering autoimmune reactions, such as rheumatic fever. In some cases, it may also activate thyroid-specific antibodies, potentially worsening or triggering autoimmune thyroid disease.
- **Borrelia burgdorferi (Lyme Disease):** Lyme disease bacteria can deeply affect immune regulation, and chronic Lyme has been associated with an increase in autoimmune conditions. The chronic inflammation from Borrelia can lead to immune dysregulation, which can impact thyroid function and increase antibody production in Graves' disease.

ENVIRONMENTAL TOXINS

Endocrine disruptors

These chemicals have been associated with potential contributions to the development of autoimmune thyroid disorders, including Graves' disease. The impact of these toxins can vary based on factors such as duration and intensity of exposure. Cutting back on these chemicals takes a real load off your thyroid and immune system.

Bisphenol A (BPA): Found in plastics, food containers, and some medical devices, BPA is known to interfere with hormone signaling and may impact thyroid function. Long-term exposure to BPA may increase the risk of developing thyroid-related health issues by mimicking estrogen in the body.

Phthalates: Commonly found in personal care products, plastics, and certain medications, phthalates can act as endocrine disruptors and have been linked to thyroid dysfunction. Commonly disguised as "fragrance," phthalates can accumulate in the body over time, potentially leading to hormone imbalances.

Perchlorates: Found in certain fertilizers, fireworks, and contaminated water sources, perchlorates can interfere with iodine uptake by the thyroid, affecting thyroid hormone production. Even low levels of perchlorates in drinking water can disrupt thyroid function, especially in vulnerable populations like pregnant women.

Polychlorinated Biphenyls (PCBs): Although largely banned, PCBs may persist in the environment. These industrial chemicals can disrupt endocrine function and potentially impact the thyroid. Studies suggest that exposure to PCBs may lead to alterations in thyroid hormone levels and increase the risk of autoimmune thyroid disease.

Heavy Metals

Exposure to heavy metals such as mercury, lead, and cadmium, often through contaminated water, air, or certain occupations, may contribute to thyroid dysfunction and autoimmune responses. Heavy metals can accumulate in the body over time, leading to oxidative stress and thyroid damage.

Mercury: Found in dental amalgam fillings, fish, and certain industrial processes. Mercury exposure, especially from consuming contaminated fish, has been shown to disrupt thyroid hormone production and contribute to autoimmune conditions like Hashimoto's and Graves.

Lead: Found in old paint, contaminated soil, and water pipes. Chronic lead exposure can interfere with the thyroid gland's ability to produce hormones and may exacerbate autoimmune thyroid conditions.

Cadmium: Found in tobacco smoke, industrial emissions, and certain foods. Cadmium is toxic to the thyroid gland, and long-term exposure can lead to altered thyroid hormone levels and immune system disruption.

Arsenic: Found in contaminated water, pesticides, and certain foods. Chronic exposure to arsenic has been linked to thyroid dysfunction and may act as a catalyst for autoimmune thyroid diseases by triggering immune system responses.

Aluminum: Found in cookware, antiperspirants, and some medications. Aluminum exposure may impair thyroid function by interfering with hormone production and metabolism, especially in individuals with preexisting thyroid conditions.

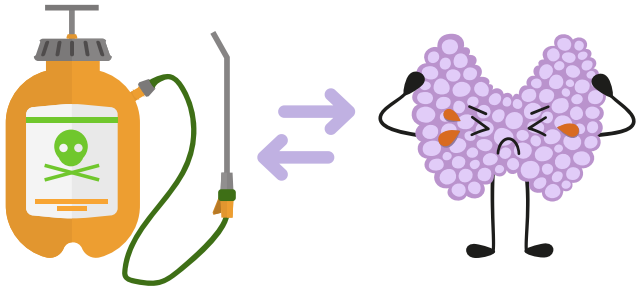
GLYPHOSATE & OTHER PESTICIDES

Glyphosate is a widely used herbicide in products like Roundup, designed to kill weeds by blocking an enzyme essential for plant growth. However, it can also affect human health, particularly through endocrine disruption, gut health, and immune function. What is the connection to autoimmune diseases like Graves' Disease and TED though?

1. **Endocrine Disruption:** Glyphosate may interfere with thyroid hormone production and iodine uptake, worsening thyroid dysfunction in Graves' disease. It also mimics estrogen, potentially causing hormonal imbalances that affect autoimmune conditions like TED.
2. **Gut Health:** Glyphosate disrupts the gut microbiome, promoting harmful bacteria and increasing intestinal permeability (leaky gut). This allows toxins and undigested particles to trigger immune responses, contributing to autoimmune flare-ups.
3. **Immune Dysregulation:** By affecting the gut and endocrine system, glyphosate can dysregulate the immune system, worsening inflammation and symptoms of autoimmune diseases like Graves' disease and TED.
4. **Increased Inflammation:** Glyphosate promotes systemic inflammation, which can worsen autoimmune symptoms such as swelling and pain.

What to Do About Glyphosate:

- **Choose Organic:** Opt for organic produce, which is grown without glyphosate or other synthetic pesticides.
- **Wash Your Produce:** Thoroughly wash non-organic fruits and vegetables to reduce pesticide residues. Rinse with diluted vinegar.
- **Detox:** Consider detox strategies like supporting liver function with supplements (e.g., milk thistle) and eating detoxifying foods (e.g., cruciferous vegetables, fiber-rich foods).
- **Limit Processed Foods:** Processed foods may contain glyphosate residues, so focus on whole, unprocessed foods.
- **Support Gut Health:** Include fermented foods (like kimchi, kefir) and prebiotic-rich foods to help restore gut balance.



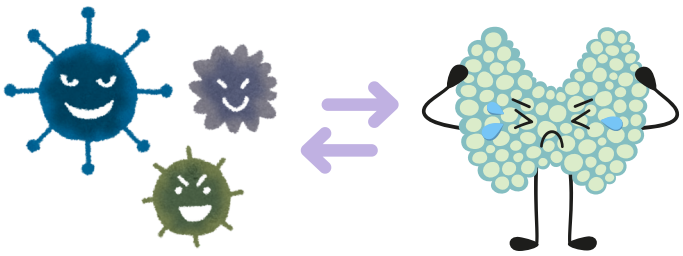
THE MOLD-THYROID CONNECTION

The connection between mold exposure and autoimmune thyroid conditions, like Graves' disease and Hashimoto's thyroiditis, is gaining more attention in the functional medicine world. Mold, particularly from water-damaged buildings, can release mycotoxins that trigger immune dysregulation and chronic inflammation. When the immune system is constantly exposed to these environmental toxins, it can go into overdrive, leading to or worsening autoimmune reactions. This can cause the body to mistakenly attack its own thyroid tissue, contributing to the onset or exacerbation of thyroid disorders.

People with autoimmune thyroid conditions are often more sensitive to environmental triggers, and mold exposure can be a major factor in creating or sustaining that immune imbalance. Symptoms like fatigue, brain fog, respiratory issues, and even worsening thyroid symptoms can be indicators of mold toxicity. Identifying and addressing mold in living or work environments, along with proper detoxification support, can be gamechanging in managing and potentially reducing the impact of autoimmune thyroid conditions like Graves and TED.

Mold exposure can trigger or worsen autoimmune conditions like Graves' Disease, especially in individuals with genetic predispositions that make them more sensitive to environmental toxins. Genes related to detoxification pathways, such as MTHFR, may influence how the body handles mold exposure, potentially increasing the risk of autoimmune thyroid flare-ups. The HLA gene, particularly certain variants like HLA-DR, has been linked to increased susceptibility to mold-related illnesses and chronic inflammatory response syndrome (CIRS). In people with Graves' Disease, these HLA gene variants can make it harder for the immune system to properly clear mold toxins, potentially worsening autoimmune thyroid conditions and leading to more persistent symptoms.

Step one is always finding and removing the mold, whether it's at home or at work. Professional mold testing and remediation are worth it. Once the environment is clear, supporting your body with a targeted detox plan, including binders like activated charcoal or chlorella, alongside liver and immune support, can help remove mycotoxins and restore balance to your immune system.



ADDRESSING ENVIRONMENTAL TOXINS (A FUNCTIONAL DETOX APPROACH)

Functional medicine approaches environmental triggers by focusing on identification, reduction, and detoxification strategies. Here's how a functional approach tackles each trigger:

Infections:

a. **Comprehensive testing:**
   - Functional medicine practitioners may conduct specific tests to identify underlying infections such as Epstein-Barr virus (EBV), Helicobacter pylori, mold, or other bacterial and viral pathogens.

b. **Targeted antimicrobial therapy:**
   - Treatment may involve antimicrobial herbs or medications to eradicate infections and support immune function.

c. **Immune modulation:**
   - Immune-supportive supplements like vitamin C, zinc, and vitamin D may be recommended to boost the body's defenses against pathogens.

Chronic Stress:

a. **Stress assessment:**
   - Functional medicine practitioners assess stress levels through various methods, including questionnaires and hormone testing.

b. **Stress management techniques:**
   - Patients are taught stress-reduction techniques such as meditation, deep breathing exercises, and progressive muscle relaxation to lower cortisol levels and mitigate the impact of stress on thyroid function.

c. **Adaptogenic herbs:**
   - Supplements like rhodiola and holy basil (avoid ashwagandha while hyperthyroid, see Chapter 9) may be prescribed to help the body adapt to stress and support adrenal health.

Dietary Factors and Triggers:

a. **Elimination diet:**
   - Patients may undergo an elimination diet to identify and eliminate potential dietary triggers such as gluten, dairy, soy, and processed foods.

b. **Anti-inflammatory diet:**
   - Functional medicine emphasizes a whole foods-based diet rich in fruits, vegetables, lean proteins, and healthy fats to reduce inflammation and support immune function.

c. **Gut healing protocols:**
   - Nutrients like L-glutamine, zinc, and omega-3 fatty acids are recommended to support gut healing and reduce intestinal permeability.

ADDRESSING ENVIRONMENTAL TOXINS (A FUNCTIONAL APPROACH, CONTINUED)

Environmental Toxins:

a. **Toxin assessment:**
   - Functional medicine practitioners evaluate exposure to environmental toxins through history-taking and specialized testing, such as heavy metal testing mycotoxin, and environmental toxin panels.

b. **Detoxification support:**
   - Personalized detoxification protocols may include dietary modifications, targeted supplements like N-acetylcysteine (NAC) and glutathione, and practices such as infrared sauna therapy to aid toxin elimination.

c. **Lifestyle adjustments:**
   - Recommendations may include reducing exposure to toxins by choosing organic foods, using natural cleaning products, and filtering drinking water.

Heavy Metals:

a. **Heavy metal testing:**
   - Functional medicine practitioners utilize tests like hair mineral analysis, urine challenge tests, or blood tests to assess heavy metal levels in the body.

b. **Chelation therapy:**
   - In cases of elevated heavy metal levels, chelation therapy may be prescribed to facilitate the removal of toxins from the body.

c. **Supportive nutrients:**
   - Nutrients like vitamin C, selenium, and alpha-lipoic acid are often included in heavy metal detoxification protocols to support the body's detoxification pathways.

Liver Care/Support:

a. **Liver-supportive herbs:**
   - Herbs like milk thistle, dandelion root, and burdock root help enhance liver detoxification, reduce inflammation, and support bile production.

b. **Nutritional support:**
   - B vitamins (B6, B12), antioxidants (vitamin C, E), and selenium support the liver's detox processes and protect against oxidative stress.

c. **Liver-stimulating foods:**
   - Incorporate cruciferous vegetables, garlic, onions, beets, and leafy greens to promote liver enzyme activity and support detoxification.

d. **Supporting phase 1/2 liver detox pathways:**
   - Focuses on supporting both Phase 1 and Phase 2 of liver detoxification. Phase 1 breaks down toxins, while Phase 2 helps eliminate them. Supplements like glutathione, N-acetylcysteine (NAC), and sulfur-rich compounds found in cruciferous vegetables (e.g., broccoli, kale) support both phases.

HOW-TO GUIDE FOR GOING LOW OR NO-TOX

Transitioning to a toxin-free or low-tox home can feel like a big task, but it's all about taking small, manageable steps. It doesn't have to be overnight or cold turkey. It all starts with the intention and slowly before you know it, you'll be living a cleaner life just by making educated choices. Here's a guide to help you switch out regular household and personal care items for cleaner, safer options over time:

1. Start with Awareness and Research

- **Educate Yourself:** Begin by understanding which chemicals are common in everyday products that might be harmful. Look out for toxins like parabens, phthalates, BPA, formaldehyde, and synthetic fragrances in personal care products, and VOCs, ammonia, and chlorine in household cleaners.
- **Use Resources:** Apps like Think Dirty or the Environmental Working Group's (EWG) Skin Deep Database (www.EWG.org) can help you identify harmful ingredients and find cleaner alternatives. Yuka is another great option for food.

2. Prioritize the Essentials

- **Focus on Daily Use Items:** Start with the items you use the most often or come into contact with your skin, like personal care products (shampoo, toothpaste, body wash, lotion) and cleaning supplies (multi-surface cleaners, laundry detergent, dish soap).
- **Replace as You Run Out:** You don't have to toss everything at once. When you finish a product, replace it with a cleaner, toxin-free version.
- **Prioritize Organic:** Choose organic produce when possible, and consult the EWG Dirty Dozen and Clean Fifteen for guidance on which produce can be bought conventional.
    - https://www.ewg.org/foodnews/clean-fifteen.php

3. Switch Personal Care Products First

- **Skincare and Makeup:** Look for non-toxic skincare products made from natural, organic ingredients without synthetic fragrances, parabens, or sulfates. Brands like Beauty by Earth, MyChelle, Ilia, Honest Beauty, Beautycounter, RMS Beauty, or Alaffia offer cleaner options.
- **Toothpaste and Deodorant:** Choose fluoride-free, SLS-free toothpaste and aluminum-free deodorants.
- **Shampoo and Body Wash:** Opt for sulfate-free and paraben-free shampoos and body washes.

4. Detox Your Cleaning Supplies

- **Replace Harsh Chemicals:** Swap out chemical-laden cleaners for plant-based, biodegradable alternatives. Brands like Branch Basics, Thieves, Dr. Bronners, ECOS, Seventh Generation, Attitude, are great places to start.
- **DIY Options:** You can make your own cleaners using simple ingredients like vinegar, baking soda, essential oils, and castile soap.
- **Opt for Fragrance-Free:** Avoid synthetic fragrances by choosing fragrance-free products or those scented with essential oils.

HOW-TO GUIDE FOR GOING LOW OR NO-TOX

5. Move Toward Safer Kitchen Products

- **Switch to Non-Toxic Cookware:** Replace non-stick (Teflon) pans with safer options like stainless steel, cast iron, or ceramic-coated cookware.
- **Avoid Plastics:** Use glass or stainless steel food storage containers instead of plastic. If you must use plastic, make sure it's BPA-free.
- **Filter Your Water:** Invest in a good water filtration system (like a Berkey or Aquasana) to reduce exposure to chemicals in tap water.

6. Tackle Laundry Products

- **Detergent:** Look for plant-based, dye-free, and fragrance-free detergents. Some options include Molly's Suds or ECOS Laundry Detergent.
- **Fabric Softeners and Dryer Sheets:** Eliminate dryer sheets, which often contain chemicals. Instead, use wool dryer balls, and add essential oils for a natural scent boost.

7. Rethink Air Fresheners and Candles

- **Avoid Synthetic Scents:** Ditch air fresheners and candles with synthetic fragrances, which can release harmful chemicals into the air.
- **Natural Alternatives:** Use essential oil diffusers or soy-based candles with natural fragrances instead.

8. Check Your Bedding and Furniture

- **Choose Organic Bedding:** Opt for organic cotton or bamboo sheets and bedding that are free from pesticides and chemical dyes.
- **Look for Non-Toxic Furniture**: If buying new furniture, choose pieces made from solid wood with natural finishes rather than particleboard or MDF, which can emit formaldehyde.

9. Filter Your Air

- **Invest in an Air Purifier:** A good HEPA air filter can help reduce dust, allergens, and airborne chemicals in your home.
- **Add Houseplants:** Certain houseplants like spider plants, snake plants, and peace lilies can help filter indoor air naturally.

10. Swap Plastics and Paper Products

- **Reusable Options:** Replace single-use plastics and paper products with eco-friendly, reusable items like beeswax wraps for food storage, glass water bottles, and bamboo paper towels.

11. Get Rid of Pesticides

- **Use Natural Pest Control:** Avoid chemical-based pest control and use natural solutions like diatomaceous earth, essential oils, or plant-based repellents.

HEALTHY SWAPS FOR HOUSEHOLD ITEMS



- **Plastic Containers:**
  - Swap For: Glass or stainless steel containers.
  - Reason: Avoids BPA and phthalates commonly found in plastics.
    - Glass: Pyrex, Anchor Hocking.
    - Stainless Steel: Klean Kanteen, Stainless Steel Solutions.

- **Non-Stick Cookware:**
  - Swap For: Cast iron, stainless steel, or ceramic cookware.
  - Reason: Reduces exposure to PFAS (per- and polyfluoroalkyl substances) used in non-stick coatings.
    - Cast Iron: Lodge, Le Creuset.
    - Stainless Steel: Cuisinart, All-Clad.
    - Ceramic: GreenPan, Bialetti.

- **Cleaning Products:**
  - Swap For: Natural or eco-friendly cleaning products made with vinegar, baking soda, and essential oils.
  - Reason: Avoids harsh chemicals like phthalates and fragrances.
    - General Cleaning: Seventh Generation, Mrs. Meyer's Clean Day.
    - Disinfectant: Thieves Household Cleaner (Young Living), Branch Basics.

- **Air Fresheners:**
  - Swap For: Essential oil diffusers or natural potpourri.
  - Reason: Avoids synthetic fragrances and phthalates.
    - Essential Oil Diffusers: doTERRA, Aura Cacia.
    - Potpourri: Freshscent, Hearth & Hand.

- **Laundry Detergents:**
  - Swap For: Plant-based or hypoallergenic detergents free from artificial fragrances and dyes.
  - Reason: Reduces exposure to chemicals and allergens.
    - Plant-Based: Eco-Me, Molly's Suds.
    - Hypoallergenic: All Free & Clear, Biokleen.

- **Pesticides and Herbicides:**
  - Swap For: Organic pest control methods like neem oil or diatomaceous earth.
  - Reason: Avoids chemicals like glyphosate and other harmful substances.
    - Neem Oil: Garden Safe, Pure Neem Oil.
    - Diatomaceous Earth: Food Grade DE, Safer Brand.

- **Water Bottles:**
  - Swap For: Reusable stainless steel or glass water bottles.
  - Reason: Avoids BPA and phthalates found in many plastics.
    - Stainless Steel: Hydro Flask, S'well.
    - Glass: Lifefactory, Ello.

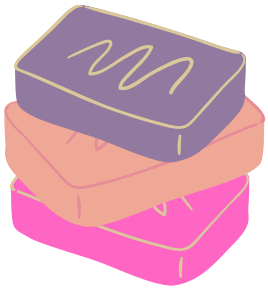
HEALTHY SWAPS FOR PERSONAL CARE ITEMS

- **Shampoo and Conditioner:**
  - Swap For: Natural or organic shampoos and conditioners without sulfates and artificial fragrances.
  - Reason: Avoids potential endocrine disruptors and skin irritants.
    - Natural: Avalon Organics, Rahua, Babo, Derma-E.
    - Organic: John Masters Organics, Acure, Innersense, Moon Valley Organics.

- **Body Wash and Soap:**
  - Swap For: Organic or handmade soaps made with natural ingredients.
  - Reason: Reduces exposure to synthetic chemicals and fragrances.
    - Organic Soaps: Dr. Bronner's, Moon Valley Organics.
    - Handmade Soaps: Badger, Beekman 1802, The Yellow Bird.

- **Deodorant/antiperspirant:**
  - Swap For: Aluminum-free deodorants or natural options with baking soda or essential oils.
  - Reason: Avoids aluminum compounds and synthetic fragrances.
    - Aluminum-Free: Schmidt's, Native, Attitude, Pretty Frank
    - Natural: Primal Pit Paste, Meow Meow Tweet, Primally Pure

- **Toothpaste:**
  - Swap For: Fluoride-free toothpaste made with natural ingredients.
  - Reason: Reduces exposure to fluoride and artificial additives.
    - Fluoride-Free: Tom's of Maine, Hello, Himalaya, Boka.
    - Natural Ingredients: David's, Dr. Bronner, Modere, Attitude, HAPPY.



- **Makeup:**
  - Swap For: Non-toxic or mineral-based makeup brands.
  - Reason: Avoids parabens, phthalates, and synthetic dyes.
    - Mineral-Based: BeautyCounter, BareMinerals, RMS Beauty, MyChelle.
    - Non-Toxic: Ilia Beauty, Kosas, Toops&Co, Lily Lolo, Honest Beauty, 100% Pure.

- **Sunscreen:**
  - Swap For: Mineral-based sunscreens with zinc oxide or titanium dioxide.
  - Reason: Avoids chemical sunscreens that may contain harmful substances.
    - Mineral-Based: Thinksport, Badger, MyChelle, Babo Botanicals, Stream2sea.
    - Zinc Oxide: Neutrogena Sheer Zinc, Blue Lizard, Thinkbaby, Thinksport.

- **Moisturizers:**
  - Swap For: Products with natural oils such as coconut oil or shea butter.
  - Reason: Avoids synthetic additives and fragrances.
    - Natural Oils: Castor Oil, Coconut Oil, Jojoba Oil, Shea Butter.
    - Natural Moisturizers: Weleda, Honest Beauty, Dr. Hauschka, HygieneLab, Inna, Leora, W/O, Foy, Nena, Beautycounter, Biossance, Rooted Beauty, Kora, Planted in Beauty, Avalon Organics, Whamisa, True Botanicals, Proudly, Mustela, Rejuva, Well People, more.

DIETARY CONSIDERATIONS & TRIGGERS

In addition to excess iodine intake, other dietary factors may also play a role as environmental triggers in Graves' disease:

Selenium Deficiency:

Selenium is an essential micronutrient that plays a massive role in thyroid function and immune regulation. Your thyroid and immune system both depend on selenium. Deficiency in selenium has been associated with an increased risk of autoimmune thyroid diseases, including Graves and TED.

Gluten Sensitivity:

Some may also have gluten sensitivity or celiac disease. Gluten is a protein found in wheat, barley, and rye, and gluten sensitivity can trigger inflammation and autoimmune responses, potentially worsening thyroid dysfunction.

Iodine Intake:

While iodine is essential for thyroid hormone synthesis, excessive iodine intake can stimulate thyroid hormone production and exacerbate hyperthyroidism in susceptible individuals. Monitoring iodine intake is important for individuals with Graves' disease. It is very individual, some people experience lower thyroid levels with excess iodine intake.

Soy Consumption:

Soy contains compounds called isoflavones, which can interfere with thyroid hormone synthesis and potentially exacerbate thyroid dysfunction.

High Sugar and Processed Foods:

Diets high in sugar and processed foods may contribute to inflammation and oxidative stress, as well as insulin resistance, all of which can impact immune function and potentially worsen autoimmune responses.

Food Allergens and Sensitivities:

Food allergies or sensitivities (such as gluten, dairy, nuts and seeds, beans and legumes, nightshades, raw veggies, FODMAPs, hypersensitivity to specific foods, etc.) to certain foods may trigger inflammatory responses in susceptible individuals, potentially exacerbating autoimmune reactions and thyroid dysfunction.

There's no one perfect diet for Graves'. Paying attention to these triggers, ideally with a functional health practitioner or dietitian who gets it, can make a real difference in how you feel.

UNDERSTANDING THE RISK FACTORS

GENETIC PREDISPOSITION

- Family history of autoimmune thyroid disorders, especially Graves' disease, increases the likelihood of susceptibility.

GENDER & AGE

- Graves' disease is more common in women, and it often develops between the ages of 30 and 50. Hormonal changes, especially during pregnancy and postpartum, may contribute.

ENVIRONMENTAL TRIGGERS

- Infections, chronic stress, dietary factors, and exposure to toxins like cigarette smoke and endocrine disruptors can trigger or exacerbate Graves' disease.

CIGARETTE SMOKING

- Smoking has been identified as a risk factor for Graves' disease, potentially influencing its severity and impact on thyroid function.
- Smoking can worsen Thyroid Eye Disease (TED) or Graves Ophthalmopathy.

EXCESS IODINE INTAKE OR DIETARY TRIGGERS

- High levels of dietary iodine, whether through diet or supplements, can contribute to Graves' disease, as well as food allergens; especially in genetically susceptible individuals.

INTESTINAL PERMEABILITY (LEAKY GUT)

- Emerging research suggests a link between Graves' disease and disruptions in gut barrier function, highlighting the role of gut health in autoimmune thyroid disorders.

Chapter 5
GUT HEALTH
THE ROOT OF THE IMMUNE SYSTEM

If there's one place I always start when looking for root causes of Graves and TED, it's the gut. My own GI-MAP comprehensive stool test showed multiple pathogen dysbiosis, including H. pylori and Blastocystis hominis, along with a leaky gut.

70% OF THE IMMUNE SYSTEM IS IN THE GUT

Healing my gut was a turning point for my eyes and my energy. About 70% of the immune system lives in and around the gut lining, so when the gut is out of balance, the immune system stays on high alert, and that can fuel autoimmunity anywhere in the body, including the thyroid and the eyes.

THE GUT-THYROID CONNECTION

- **Dysbiosis**: Studies show that people with Graves' disease tend to have less diverse gut bacteria than people without it, and are more likely to have overgrowths of opportunistic bacteria. A healthy microbiome makes short-chain fatty acids like butyrate, which help create regulatory T cells, the immune cells that keep autoimmunity calm.
- **Infections**: Gut bugs like H. pylori and Yersinia can trigger the immune system to attack the thyroid (see Infections in Chapter 4).
- **Nutrient Absorption**: A struggling gut can't absorb nutrients well, and may lack stomach acid to break down nutrients from food. This is one reason so many people with Graves are low in iron/ferritin, B12, selenium, zinc, and vitamin D, even when they eat well or supplement.
- **It Goes Both Ways**: Excess thyroid hormone speeds up gut motility, which can cause loose stools, urgency, and poor absorption. As thyroid levels come down, digestion often changes (may slow down) too.

SIGNS YOUR GUT NEEDS SUPPORT

- Bloating, gas, or feeling full quickly
- Diarrhea, constipation, or both
- Acid reflux or heartburn
- Growing food sensitivities
- Low iron/ferritin, B12, or other deficiencies that won't budge
- Skin issues like acne, eczema, or rashes
- Brain fog, fatigue, and anxiety
- Frequent yeast infections or sugar cravings

LEAKY GUT (INCREASED INTESTINAL PERMEABILITY)

Think of your gut lining like a security checkpoint. It's only one cell thick, and those cells are held together by tiny "zippers" called tight junctions. When everything is working well, the zippers open just enough to let nutrients from your food into your bloodstream, and keep everything else out.

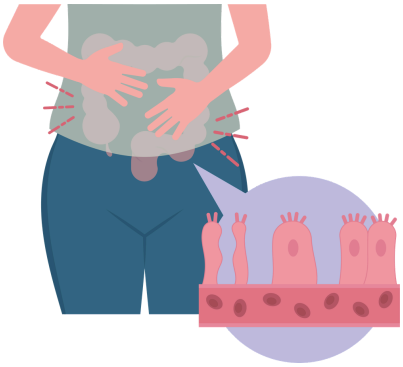
When the gut lining gets damaged, those zippers loosen. Now things that should stay inside your gut, like toxins, bacteria, and bits of undigested food, slip through into your bloodstream. That's what we call leaky gut, or increased intestinal permeability.

What Loosens the Zippers? Chronic stress, gluten (it triggers a protein called zonulin, which opens the zippers), gut infections and imbalanced bacteria, alcohol, NSAIDs like ibuprofen, antibiotics, sugary processed foods, and environmental toxins.

Why This Matters for Graves and TED: Your immune system sees those escaped particles as invaders and goes on high alert. When this happens every day, that constant alarm creates inflammation throughout the whole body. Some of these invaders, like certain proteins in gluten, also look a lot like your own thyroid tissue. It's a case of mistaken identity called molecular mimicry. While the immune system is busy attacking the invaders, it can start attacking your thyroid too. This can play a part in developing Graves', TED, and Hashimoto's, or make them worse.

Your gut is basically the headquarters of your immune system. Imbalanced gut bacteria, chronic inflammation, and a leaky lining can all keep your immune system revved up, which raises the risk of autoimmune conditions like Graves' disease.

The good news is our gut lining renews itself every few days. When you remove what's damaging it and give it the right support, it can heal. Research on leaky gut and Graves is still growing, but supporting your gut through diet, probiotics, stress relief, and the 5R protocol is one of the most powerful root-cause steps you can take. The next few pages show you exactly how.



LEAKY GUT MANAGEMENT

Improving leaky gut involves adopting strategies to support gut health and restore the integrity of the intestinal barrier. Some specific ways to improve leaky gut include:

1. **Dietary Modifications:**
   - Following an anti-inflammatory diet rich in whole, unprocessed foods, fruits, vegetables, and healthy fats can help reduce inflammation and support gut health.
   - Avoiding foods that may exacerbate inflammation, such as processed foods, refined sugars, gluten-containing grains, and dairy products for those who are sensitive, can help alleviate symptoms of leaky gut.
2. **Probiotics and Prebiotics:**
   - Incorporating probiotic-rich foods like yogurt, kefir, sauerkraut, and kimchi into your diet can help restore the balance of beneficial gut bacteria. It is important to test the microbiome first, as starting a probiotic if dysbiosis is present, can cause more damage.
   - Consuming prebiotic-rich foods like garlic, onions, leeks, bananas, and asparagus can provide fuel for the growth of beneficial bacteria in the gut.
3. **Supplements:**
   - Certain supplements may help support gut health and reduce inflammation, such as colostrum or L-glutamine, which is an amino acid that supports the integrity of the intestinal barrier.
   - Omega-3 fatty acids, found in fish oil supplements, have anti-inflammatory properties and may help reduce gut inflammation.
4. **Stress Management:**
   - Chronic stress can exacerbate leaky gut and contribute to inflammation. Incorporating stress-reducing techniques such as mindfulness meditation, yoga, deep breathing exercises, and regular physical activity can help lower stress and support gut health.
5. **Identifying and Addressing Food Sensitivities:**
   - Identifying and eliminating foods that trigger immune reactions or exacerbate inflammation can help reduce gut irritation and promote healing.
   - Working with a healthcare provider to conduct food sensitivity testing or following an elimination diet under the guidance of a registered dietitian can help identify problematic foods.
6. **Optimizing Sleep and Hydration:**
   - Your gut does a lot of its repair work while you sleep, and it needs water to keep things moving.
7. **Reducing Environmental Toxin Exposure:**
   - Minimizing exposure to environmental toxins, such as heavy metals, pesticides, and pollutants, can help reduce inflammation and support gut health.
8. **The 5R Protocol:**
   - Remove, Replace, Reinoculate, Repair, Rebalance. (more on next page)

Healing the gut takes time, but it's one of the most powerful things you can do for Graves' and TED. Check with your provider before big changes, especially if you take medications or have other health conditions.

THE 5R PROTOCOL

The 5R method is a comprehensive approach to healing the gut and restoring gastrointestinal health. Each "R" represents a different step in the process:

1. **Remove:**
   - The first step involves identifying and removing factors that may be contributing to gut dysfunction. This includes eliminating inflammatory foods, food allergens, processed foods, pathogens, and potential gut irritants such as alcohol and caffeine. Removing these triggers helps reduce inflammation and allows the gut to heal. Anti-infective herbs, supplements, or medications may be needed for pathogens.
2. **Replace:**
   - In this step, the focus is on replenishing essential nutrients and enzymes necessary for proper digestion and gut function. This may involve supplementing with digestive enzymes, hydrochloric acid (HCl), or bile acids to aid digestion and nutrient absorption. Additionally, supporting gut-friendly bacteria with probiotics can help restore microbial balance.
3. **Reinoculate:**
   - Reinoculating the gut involves reintroducing beneficial bacteria to restore a healthy balance of gut microbiota. This is typically achieved through the use of probiotics, which are supplements containing live beneficial bacteria strains. Fermented foods such as yogurt, kefir, sauerkraut, and kimchi are also rich sources of probiotics.
4. **Repair:**
   - The repair phase focuses on healing the intestinal lining and supporting gut barrier function. This may involve incorporating nutrients and supplements that promote tissue repair, such as L-glutamine, zinc, omega-3 fatty acids, and vitamins A, C, and D. Additionally, consuming bone broth, which is rich in collagen and gelatin, can support gut lining integrity.
5. **Rebalance:**
   - Rebalance: The last step is about the everyday habits that keep your gut healthy for the long haul. This includes managing stress, getting adequate sleep, staying hydrated, and adopting a balanced diet rich in whole foods, fiber, and antioxidants. Moving your body and calming your nervous system with things like meditation and yoga help your gut stay healed.

The 5R protocol is the framework I use to heal the gut. Most people need a very individualized version of this, there is no one-size-fits-all. Testing first makes all the difference, so you're treating what's actually there instead of guessing. I highly recommend working with a functional medicine provider who is knowledgeable in Graves & TED (this part is IMPORTANT) to help you recognize specific microbiome trends for Graves/TED and guide you through this process properly. Apply to work with me here.

TESTING THE GUT

You can spend months, and a small fortune, on gut supplements that don't match what's actually going on. Testing shows you exactly what needs to be removed, replaced, and repaired. My own GI-MAP is what found my H. pylori and Blastocystis hominis, and it changed my entire healing plan.

Which Test Should I Start With?

- Bloating, gas, loose stools, or constipation: comprehensive stool test
- Bloating within an hour of eating, especially after fiber or probiotics: SIBO breath test
- Sugar cravings, recurring yeast infections, brain fog, or known mold exposure: organic acids test
- Heartburn, feeling full for hours after protein, or low iron and B12 that won't budge: H. pylori test and the baking soda test
- Thinking about going gluten-free: celiac screening first

Comprehensive Stool Test (GI-MAP, Gut Zoomer, or GI Advanced)

An at-home test that looks at:

- Pathogens: H. pylori (including its virulence factors), Yersinia enterocolitica (the bacteria linked to Graves through molecular mimicry, see Chapter 4), parasites, harmful bacteria, and viruses like EBV (GI-MAP)
- The balance of good bacteria, and overgrowth of opportunistic bacteria and yeast
- Digestion: pancreatic elastase (enzyme output) and steatocrit (fat absorption)
- Inflammation: calprotectin
- Gut immune health: secretory IgA
- Leaky gut: zonulin
- Beta-glucuronidase, which affects how estrogen and toxins get recycled

Stool Test Tips

- Use the collection "hat" that comes in the kit, and keep the sample away from urine and toilet water.
- Ship it Monday through Thursday so it doesn't sit in a warehouse over the weekend.
- Avoid collecting during your period, since blood can skew some markers.
- Eat the way you normally do in the days before. Cleaning up your diet right before testing can hide what's really going on.

Results I Pay Close Attention To

- Low secretory IgA: The gut's immune defenses are worn down, often from long-term stress or infection. High sIgA means the immune system is actively fighting something.
- High calprotectin: Signals gut inflammation. Very high levels should be checked by a GI doctor to rule out inflammatory bowel disease.
- Low pancreatic elastase: You may not be making enough digestive enzymes.
- High beta-glucuronidase: Estrogen and toxins are getting recycled back into the body instead of leaving, which can worsen hormone imbalances.
- Low beneficial bacteria (like Lactobacillus, Bifidobacterium, Akkermansia, and Faecalibacterium): These help keep the gut lining strong and make short-chain fatty acids that calm the immune system.
- Yersinia or H. pylori: Both have direct links to Graves, so they're always worth addressing.
- Overgrowths of any kind, even if they are not pathogenic.

TESTING THE GUT

Organic Acids Test (OAT or Metabolomix+) Yeast can be sneaky. It tends to hide along the gut lining instead of showing up in every stool sample, so a stool test can come back "clean" even when yeast is a problem. This simple urine test picks up the byproducts yeast and bacteria leave behind. Certain markers, like arabinose, point to hidden yeast overgrowth, and others can point to mold exposure.

SIBO Breath Test Checks for bacterial overgrowth in the small intestine by measuring hydrogen, methane, and (with trio-smart) hydrogen sulfide gases over 2-3 hours. Worth doing if you bloat soon after eating, especially with fiber, garlic, onions, or probiotics. It requires a simple prep diet the day before.

H. pylori Testing A breath test or stool antigen test through your doctor. PPIs, antibiotics, and bismuth can cause false negatives, so ask about stopping them beforehand.

Celiac Screening A tTG-IgA plus total IgA blood test. Get this done BEFORE going gluten-free, because the test only works if you're still eating gluten. Celiac disease is more common in people with autoimmune thyroid disease.

Leaky Gut Blood Tests Serum zonulin, or Cyrex Array 2, which checks for antibodies to the proteins that hold your gut lining together and to bacterial toxins (LPS).

Food Sensitivity Testing Food sensitivity tests can be helpful, but take the results with a grain of salt. When your gut is leaky, food particles slip through and your immune system reacts to a LOT of them, so you might light up for foods you eat all the time. Sensitivities can change as your gut heals, and many people can bring those foods back later. I like to use these results as a starting point, then confirm with an elimination diet and slow reintroduction, which is still the gold standard.

Nutrient Labs An iron panel with ferritin, plus B12, vitamin D, zinc, and magnesium, can show whether your gut is actually absorbing what you eat.

At-Home Baking Soda Test Detect low stomach acid at home with a simple 3 minute test, instructions on the next page.

Before and After You Test

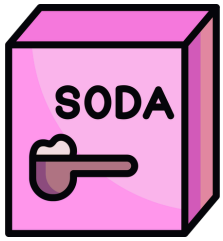
- Follow your lab's prep instructions. Many ask you to pause antibiotics, antifungals, and antimicrobial herbs for 2-4 weeks first, and PPIs if your doctor says it's safe. Never stop a prescription medication on your own.
- Retest after treatment. For H. pylori, wait at least 4 weeks after finishing treatment, then retest to make sure it's really gone. For a stool test, retest a few weeks to a few months after finishing your gut protocol.
- Results are a snapshot of one moment, so always look at them alongside how you actually feel.
- Lab brands for each test are covered in Chapter 11.

THE AT-HOME BAKING SODA TEST (FOR LOW STOMACH ACID)

Low stomach acid is really common, and it's one of the most overlooked gut issues. You need strong stomach acid to break down protein, absorb iron, B12, zinc, and selenium, and keep harmful bacteria from settling into your gut. For those of us with Graves, that matters a lot, since so many of the nutrients our thyroid depends on start with good digestion.

Signs Your Stomach Acid May Be Low

- Burping, bloating, or heaviness right after meals
- Feeling full for hours after eating protein
- Undigested food in your stool
- Heartburn or reflux (surprisingly, low acid can cause this too)
- Low iron, B12, or zinc despite supplementing
- Weak, peeling nails or thinning hair



Common Causes of Low Stomach Acid

- Chronic stress (your body can't "rest and digest" in fight-or-flight mode)
- H. pylori infection
- Long-term use of acid blockers like PPIs or antacids
- Zinc deficiency, since your stomach needs zinc to make acid
- Aging, since acid production naturally drops over time

How to Do the Test

1. First thing in the morning, before eating or drinking anything, mix 1/4 teaspoon of baking soda into 4-6 ounces of cold water.
2. Drink it, and start a timer.
3. Time how long it takes you to burp. Baking soda reacts with stomach acid to make gas, so a burp within 2-3 minutes suggests you have enough acid. No burp within 5 minutes may point to low stomach acid. Lots of early, repeated burping may point to too much.
4. Repeat for 3 mornings in a row and look at your average.

This is a screening tool, not a diagnosis, but it's a great conversation starter with your practitioner.

If Your Stomach Acid Seems Low

- Eat in a calm state. Take a few deep breaths before meals, sit down, and chew slowly.
- Try digestive bitters or a small splash of apple cider vinegar in water before meals.
- Ask your practitioner about betaine HCl (see the REPLACE section of this chapter). Don't use it if you have ulcers or gastritis, or if you take NSAIDs or steroids.
- If you take an acid blocker, talk to your doctor before making any changes.

GUT HERBS, SUPPLEMENTS, AND NUTRIENTS

As with every chapter, these are not meant to be taken all at once. Testing tells us which step you need and which tools fit, at which step of the 5R process. Antimicrobial herbs especially should be used under the guidance of a practitioner, since they can cause die-off reactions and interact with medications.

REMOVE: Antimicrobial and Anti-Yeast Herbs

- **Berberine** (Berberis spp.)
  - Mechanism of Action: Berberine has broad antimicrobial properties against bacteria, yeast, and parasites, and supports a healthy microbiome. It also helps with blood sugar balance and reduces systemic inflammation.
  - Dosing: 500 mg two to three times per day with meals, usually for 4-8 week cycles.
  - Cautions: Interacts with many medications, including metformin and diabetes drugs (additive blood sugar lowering), cyclosporine, and drugs broken down by the liver's CYP3A4 enzyme. Avoid in pregnancy and breastfeeding.
  - Dietary Sources: Found in goldenseal, Oregon grape, and barberry.

- **Oregano Oil** (Origanum vulgare)
  - Mechanism of Action: Its active compounds, carvacrol and thymol, fight bacterial overgrowth and yeast. Commonly used in SIBO and dysbiosis protocols.
  - Dosing: 100-200 mg of an emulsified oil capsule two to three times per day with food.
  - Cautions: Can cause heartburn. Avoid in pregnancy.

- **Garlic** (Allicin)
  - Mechanism of Action: Allicin is antibacterial and antifungal, and is especially helpful for methane-dominant SIBO.
  - Dosing: 450 mg of stabilized allicin one to three times per day.
  - Cautions: May increase bleeding risk with blood thinners.

- **Mastic Gum** (Pistacia lentiscus)
  - Mechanism of Action: A resin traditionally used for stomach health, with activity against H. pylori.
  - Dosing: 500-1,000 mg twice daily on an empty stomach.

- **Caprylic Acid and Saccharomyces boulardii** (for Candida)
  - Mechanism of Action: Caprylic acid, a fatty acid from coconut, breaks down yeast cell walls. S. boulardii is a beneficial yeast that crowds out Candida and supports the gut lining.
  - Dosing: Caprylic acid 500-1,000 mg with meals.
  - S. boulardii 250-500 mg (5-10 billion CFU) one to two times per day.

- **Biofilm Disruptors** (NAC, digestive enzyme blends)
  - Mechanism of Action: Stubborn bacteria and yeast hide inside protective biofilms. NAC and specialized enzyme blends help break these down so antimicrobials can reach them.
  - Dosing: NAC 600 mg twice daily away from food.

GUT HERBS, SUPPLEMENTS, AND NUTRIENTS

REMOVE: Anti-Parasitic Herbs

Parasites are more common than most people think. Blastocystis hominis showed up on my own GI-MAP. Anti-parasitic herbs are usually used in combination, often in cycles, and always after testing. Berberine and garlic (previous page) also have anti-parasitic activity. Some parasites need prescription medication, so always review your stool test results with a practitioner first.

- **Black Walnut Hull** (Juglans nigra)
  - Mechanism of Action: Rich in tannins and juglone, which help make the gut an unfriendly place for parasites and yeast.
  - Dosing: 250-500 mg capsules or 0.5-1 mL tincture two to three times daily, usually for 4-8 weeks.
  - Cautions: Some sources report that black walnut hull naturally contains iodine, so use extra caution with Graves. Avoid with tree nut allergies and in pregnancy.
- **Wormwood** (Artemisia absinthium) and **Sweet Wormwood / Artemisinin** (Artemisia annua)
  - Mechanism of Action: One of the oldest anti-parasitic herbs. Artemisinin, from sweet wormwood, is also studied for its antimicrobial effects.
  - Dosing: Wormwood extract 200-400 mg or artemisinin 100-200 mg, two to three times daily, for no more than 4 weeks at a time (often pulsed on and off).
  - Cautions: Wormwood contains thujone, which can be toxic to the nervous system in high doses. Avoid with seizure disorders, in pregnancy, and while breastfeeding.
- **Clove** (Syzygium aromaticum)
  - Mechanism of Action: Its active compound, eugenol, has strong antimicrobial and anti-parasitic properties, and is traditionally paired with black walnut and wormwood.
  - Dosing: 500 mg one to three times daily with meals.
  - Cautions: May increase bleeding risk with blood thinners. Stop 2 weeks before surgery.
- **Mimosa Pudica Seed**
  - Mechanism of Action: Forms a sticky gel in the gut that is thought to help sweep out parasites, biofilm, and toxins.
  - Dosing: 500-1,000 mg twice daily on an empty stomach, with plenty of water.
  - Cautions: Can cause constipation, so make sure you're pooping daily before starting.
- **Neem** (Azadirachta indica)
  - Mechanism of Action: Has broad anti-parasitic, antifungal, and antibacterial activity.
  - Dosing: 300-600 mg of leaf extract one to two times daily.
  - Cautions: Avoid in pregnancy and while trying to conceive. Use caution with liver conditions and diabetes medications.
- **Papaya Seed and Pumpkin Seed** (food-based options)
  - Mechanism of Action: Gentle, food-based options traditionally used to support parasite cleanses.
  - Dosing: About 1 teaspoon of ground papaya seeds or a small handful of raw pumpkin seeds daily.

Before Starting an Anti-Parasitic Protocol

- Test first. A comprehensive stool test shows what's actually there, and which herbs or medications it responds to.
- Open your drainage pathways. Make sure you're having daily bowel movements, drinking plenty of water, and supporting your liver.
- Use a binder (like activated charcoal or chlorella) at least 2 hours away from meds and supplements to help with die-off symptoms.
- Expect possible die-off (fatigue, headaches, bloating, or flu-like feelings). Slow down if symptoms are intense.
- Retest after your protocol to make sure it worked.

GUT HERBS, SUPPLEMENTS, AND NUTRIENTS

REPLACE: Digestive Support

- **Digestive Enzymes**
  - Mechanism of Action: Help break down proteins, fats, and carbohydrates, easing bloating and improving nutrient absorption.
  - Dosing: One capsule with each main meal.
- **Betaine HCl**
  - Mechanism of Action: Supports stomach acid, which is needed to digest protein, absorb iron, B12, and minerals, and keep harmful bacteria out of the small intestine.
  - Dosing: One capsule (around 650 mg) with a protein meal, increased slowly under professional guidance.
  - Cautions: Do not use with ulcers or gastritis, or while taking NSAIDs or steroids like prednisone.
- **Bile Support (Ox Bile, TUDCA)**
  - Mechanism of Action: Bile digests fats, absorbs fat-soluble vitamins (A, D, E, K), and keeps things moving. It is especially helpful for anyone without a gallbladder or with fatty or pale stools.
  - Dosing: Ox bile 125-500 mg with fatty meals. TUDCA 250-500 mg per day.

REINOCULATE: Probiotics and Prebiotics

- **Probiotics**
  - Mechanism of Action: Probiotics are beneficial bacteria that help maintain a healthy balance of gut microbiota and support digestive health. They also help modulate immune function and reduce inflammation associated with autoimmune conditions like Graves' disease.
  - Types: Lactobacillus and Bifidobacterium blends (most common), Saccharomyces boulardii (a beneficial yeast that is helpful during antibiotics and for Candida), and spore-based probiotics (Bacillus strains that survive stomach acid and are often better tolerated with SIBO).
  - Dosing: 10-100 billion CFUs per day depending on the strain and formulation. Multi-strain products support a more diverse microbiome.
  - Dietary Sources: Fermented foods such as yogurt, kefir, sauerkraut, kimchi, and kombucha.
- **Prebiotics**
  - Mechanism of Action: Prebiotic fibers feed beneficial bacteria, which then make butyrate and other short-chain fatty acids that calm inflammation.
  - Dosing: Partially hydrolyzed guar gum (PHGG) 3-6 grams per day is gentle. Start low if you bloat easily or have SIBO.
  - Dietary Sources: Green bananas, cooked and cooled potatoes and rice, asparagus, onions, garlic, and oats.

GUT HERBS, SUPPLEMENTS, AND NUTRIENTS

REPAIR: Gut Lining Nutrients

- **L-Glutamine**
  - Mechanism of Action: The main fuel source for the cells lining the gut. Helps rebuild and tighten the gut barrier.
  - Dosing: 5-15 grams per day as a powder, in divided doses.
- **Colostrum**
  - Mechanism of Action: Rich in immunoglobulins and growth factors that support the gut lining and bind to harmful bacteria and toxins.
  - Dosing: 1-2 grams per day on an empty stomach. Contains dairy proteins, so use caution with dairy sensitivity.
- **Zinc Carnosine**
  - Mechanism of Action: A form of zinc that sticks to the stomach and gut lining, supporting repair and protecting against ulcers and H. pylori damage.
  - Dosing: 75 mg twice daily (provides about 32 mg of zinc total, so count it toward your daily zinc).
- **Butyrate**
  - Mechanism of Action: A short-chain fatty acid that fuels colon cells, tightens the gut barrier, and helps create regulatory T cells to calm autoimmunity.
  - Dosing: 300-600 mg per day as tributyrin or sodium/calcium butyrate.
- **Soothing Herbs: DGL, Slippery Elm, Marshmallow Root, Aloe Vera**
  - Mechanism of Action: These herbs coat and soothe an irritated gut lining and help with reflux and inflammation. DGL is licorice with the blood pressure-raising compound removed.
  - Dosing: DGL 380-760 mg chewed before meals. Slippery elm or marshmallow root 500-1,000 mg or 1 tablespoon of powder in water. Aloe vera juice (inner leaf) 1-2 ounces daily.
  - Cautions: Slippery elm and marshmallow root can slow absorption of medications, so separate by 2 hours.
- **Collagen and Bone Broth**
  - Mechanism of Action: Provide glycine, proline, and glutamine, the building blocks for repairing the gut lining.
  - Dosing: 10-20 grams of collagen peptides per day, or 1-2 cups of bone broth.
- **Quercetin** (see Chapter 10)
  - Also helpful here for calming mast cells and histamine reactions in the gut.

REBALANCE: Lifestyle for a Healthy Gut

- Eat slowly and chew thoroughly. Digestion starts in the mouth.
- Leave 3-4 hours between meals when possible, which lets the gut's natural "cleaning wave" (the migrating motor complex) sweep through.
- Manage stress and support the vagus nerve with deep breathing, humming, gargling, and cold water on the face.
- Prioritize 7-9 hours of sleep. The microbiome follows a daily rhythm too.
- Eat the rainbow. Aim for 30 different plant foods per week to grow microbiome diversity.
- Limit alcohol, NSAIDs like ibuprofen, and unnecessary antibiotics, which all damage the gut lining and microbiome.

Chapter 6

MANAGING GRAVES
THROUGH NUTRITIONAL CHANGES

Food was one of the first places I started taking my power back. What's on your plate can calm inflammation, support your gut, and help balance your hormones. This chapter covers the building blocks of a thyroid-happy plate, different diet options, and a few of my go-to recipes.

NUTRITIONAL SUPPORT INTRO: A BALANCED DIET

A balanced diet simply means getting a mix of foods that gives your body what it needs: protein, healthy fats, fiber, and lots of color. It involves consuming a combination of different food groups in adequate amounts to support the body's functions, maintain a healthy weight, and reduce the risk of nutrition-related diseases.

The components of a balanced diet typically include:



FRUITS AND VEGETABLES:

Fruits and vegetables are essential components of a healthy diet, rich in vitamins, minerals, antioxidants, fiber, and phytochemicals. They are nutrient-dense foods that offer numerous health benefits, including aiding in the management of chronic conditions like Graves.

BENEFITS OF FRUITS AND VEGETABLES IN GRAVES MANAGEMENT:

- **Nutrient Density:** Fruits and vegetables provide essential vitamins (like vitamin C, vitamin A, folate), minerals (such as potassium, magnesium), and antioxidants. These nutrients help fight oxidative stress, which runs high with Graves.

- **Fiber Content:** Both fruits and vegetables are excellent sources of dietary fiber. Fiber helps regulate blood sugar levels, promotes digestive health, and contributes to a feeling of fullness, assisting in weight management. Prebiotic fibers supports the microbiome by providing "food" to beneficial gut bacteria.
- **Low-Calorie, High-Nutrient Foods:** Most fruits and vegetables are low in calories while being packed with nutrients. Certain fruits and vegetables, such as those rich in iodine, selenium, and vitamin D, can provide essential micronutrients that play a role in thyroid function. Maintaining optimal levels of these nutrients is important for overall thyroid health.
- **Phytonutrients and Anti-inflammatory Properties:** Fruits and vegetables contain phytochemicals that have anti-inflammatory properties, which can be beneficial in reducing inflammation and oxidative stress. Choose vividly colorful options like berries, beets, and more!

TIPS FOR INCORPORATING FRUITS AND VEGETABLES INTO THE DIET:



- Variety: Aim for a colorful array of fruits and vegetables to benefit from a wide range of nutrients. Different colors indicate different nutrients and antioxidants present in these foods.
- Fresh and Seasonal Choices: Choose fresh, seasonal produce whenever possible, as they often contain higher nutrient levels and better flavor.
- Incorporate as Snacks or Sides: Fruits and vegetables can be incorporated into meals as side dishes, salads, or snacks. Add them to smoothies, salads, stir-fries, or enjoy them raw with hummus or yogurt dips.
- Meal Planning: Plan meals that include a variety of fruits and vegetables to ensure adequate intake throughout the day.
- Frozen or Canned Options: When fresh produce isn't available, frozen or canned fruits and vegetables (without added sugars or sauces) can be convenient alternatives, go for organic if you can!

Make half your plate fruits and veggies. Your gut, your hormones, and your thyroid will thank you.

TELL ME MORE ABOUT PHYTONUTRIENTS....

Phytochemicals found in fruits, vegetables, legumes, nuts, seeds, and herbs are vital. These compounds offer antioxidant, anti-inflammatory, and immune-modulating properties, amazing for managing autoimmune conditions and thyroid health.

Foods that are highest in phytochemicals include:

1. **Berries**: Blueberries, strawberries, raspberries, and blackberries are rich in various phytochemicals, including flavonoids, anthocyanins, and ellagic acid, which have antioxidant and anti-inflammatory properties.
2. **Leafy Greens:** Spinach, kale, Swiss chard, and collard greens are packed with phytochemicals such as carotenoids (lutein, zeaxanthin), flavonoids, and glucosinolates, which help protect your cells and calm inflammations.
3. **Cruciferous Vegetables:** Broccoli, cauliflower, Brussels sprouts, and cabbage are abundant in phytochemicals like sulforaphane, indole-3-carbinol, and glucosinolates, known for their anti-cancer properties and detoxification support.
4. **Herbs and Spices:** Turmeric, ginger, garlic, cinnamon, and oregano are potent sources of phytochemicals with anti-inflammatory, antimicrobial, and antioxidant properties.
5. **Legumes**: Beans, lentils, and chickpeas are rich in phytochemicals such as flavonoids, lignans, and saponins, which contribute to their antioxidant and anti-inflammatory effects.
6. **Nuts and Seeds:** Almonds, walnuts, flaxseeds, and chia seeds contain phytochemicals like lignans, phenolic compounds, and phytosterols, which support heart health and reduce inflammation.
7. **Colorful Vegetables:** Carrots, bell peppers, tomatoes, and sweet potatoes are packed with phytochemicals such as carotenoids (beta-carotene, lycopene), flavonoids, and polyphenols, which have antioxidant and anti-inflammatory properties.
8. **Whole Grains:** Whole grains like oats, quinoa, and brown rice contain phytochemicals such as lignans, phenolic acids, and phytosterols, which contribute to their heart-healthy and anti-inflammatory effects.
9. **Fruits**: Apples, oranges, grapes, and kiwifruits are rich in phytochemicals like flavonoids, phenolic acids, and polyphenols, which have antioxidant, anti-inflammatory, and anti-cancer properties.
10. **Tea**: Green tea and black tea contain phytochemicals such as catechins, theaflavins, and thearubigins, which contribute to their antioxidant and anti-inflammatory effects.

The more colors you eat, the more of these protective compounds you get. Eating the rainbow is one of the simplest ways to go from surviving to thriving!

PROTEINS:



Protein is made of amino acids, the building blocks your body uses to make muscle, hormones, enzymes, and immune cells. With Graves', you burn through it fast.

The Recommended Dietary Allowance (RDA) for protein is a general guideline, approximately 0.8 grams per kilogram of body weight for sedentary adults. (If you're using pounds, divide your weight by 2.2 to get your weight in kilograms.)

However, if you are more active, you may need more protein. Some sources even say you might want to eat up to half your weight in grams of protein. So if you weigh 150 pounds, you would aim for 75 grams of protein daily.

BENEFITS OF PROTEIN IN HORMONE MANAGEMENT:

- **Thyroid Hormone Synthesis:** Proteins are essential for the synthesis of thyroid hormones, including thyroxine (T4) and triiodothyronine (T3). A well-balanced protein intake supports the production of these hormones important for regulating metabolism.
- **Immune Function:** Protein Your immune cells are made from protein, so you need enough of it to keep your immune system balanced.
- **Tissue Repair and Muscle Health:** Protein is necessary for tissue repair and muscle health. People with Graves' disease may experience muscle weakness and wasting, so having sufficient protein intake supports muscle maintenance and repair.
- **Satiety and Weight Management:** Protein-rich foods contribute to a feeling of satiety, helping in weight management. It's one of the easiest ways to keep cravings and blood sugar in check.

SOURCES OF PROTEIN:



- Animal Sources: Lean meats (chicken, turkey, lean beef), fish, eggs, and dairy products if tolerated (Greek yogurt, cottage cheese) are rich in high-quality protein.
- Plant-Based Sources: Legumes (beans, lentils, chickpeas), tofu, tempeh, edamame, quinoa, nuts, seeds, and certain grains (such as amaranth) are plant-based sources of protein.



HEALTHY FATS:

Healthy fats are a category of dietary fats that offer various health benefits when consumed in moderation. They help calm inflammation, which matters a lot with autoimmunity. Healthy fats are primarily unsaturated fats, including monounsaturated fats and polyunsaturated fats, which can positively impact health when replacing unhealthy saturated and trans fats in the diet.

BENEFITS OF HEALTHY FATS IN GRAVES MANAGEMENT:

- **Anti-inflammatory Effects:** Healthy fats such as omega-3 fatty acids found in fatty fish, flaxseeds, chia seeds, and walnuts have anti-inflammatory properties that can help reduce inflammation, which is often elevated in autoimmune conditions like Graves' disease.
- **Hormone Regulation:** Fats are essential for hormone synthesis and balance, including thyroid hormones. Adequate intake of healthy fats supports optimal hormone production and function.
- **Nutrient Absorption:** Certain fat-soluble vitamins, such as vitamin D, vitamin E, and vitamin K, require fats for absorption. So eat your veggies with some olive oil or avocado, and you'll actually absorb the nutrients in them.
- **Satiety and Blood Sugar Regulation:** Healthy fats contribute to a feeling of fullness and satiety after meals. This can be beneficial for managing weight, as it may help control appetite and prevent overeating.
- **Heart Health:** Consuming healthy fats, particularly monounsaturated and polyunsaturated fats found in avocados, olive oil, nuts, and seeds, can improve heart health by reducing LDL cholesterol levels and lowering the risk of cardiovascular disease.

SOURCES OF HEALTHY FATS:

1. Monounsaturated Fats: Found in foods like avocados, olive oil, nuts (almonds, cashews, peanuts), and seeds (sesame seeds, pumpkin seeds).
2. Polyunsaturated Fats: Include omega-3 and omega-6 fatty acids. Sources include fatty fish (salmon, mackerel, sardines), flaxseeds, chia seeds, walnuts, and soybeans.
3. Plant-Based Oils: Oils like olive oil, flaxseed oil, coconut oil, and avocado oil are rich in healthy fats and can be used in cooking or salad dressings.
4. Nuts and Seeds: Incorporating a variety of nuts and seeds into the diet provides healthy fats along with protein and other nutrients.

WHOLE GRAINS:



Whole grains are grains that retain all parts of the seed (the bran, germ, and endosperm) in their natural proportions after processing, which distinguishes them from refined grains that have had the bran and germ removed during processing. In Graves management, integrating whole grains, if tolerated, into your diet may offer benefits. Rich in complex carbohydrates, fiber, and essential nutrients, whole grains provide sustained energy, and support digestive health.

BENEFITS OF WHOLE GRAINS IN GRAVES MANAGEMENT:

- **Fiber Content:** Whole grains are rich in dietary fiber, including insoluble and soluble fiber. Fiber aids in digestion, promotes gut health, and helps regulate bowel movements.
- **Complex Carbohydrates and Energy:** Whole grains are a rich source of complex carbohydrates, providing sustained energy levels. This is important for those with Graves' who may experience increased metabolic rates and energy expenditure due to hyperthyroidism.
- **Nutrient Density:** They contain various nutrients, including B vitamins (such as folate, niacin, riboflavin, and thiamine), minerals (like iron, magnesium, and selenium), and phytochemicals, many of which your thyroid needs.
- **Supporting Heart Health:** Whole grains have been associated with cardiovascular health benefits, including lower cholesterol levels and improved heart health. Given that Graves' disease can have implications for cardiovascular function, incorporating heart-healthy foods is important.

SOURCES OF WHOLE GRAINS:

1. Whole Wheat: Includes products made from whole wheat flour, such as whole wheat bread, pasta, and couscous. (caution: contains gluten)
2. Brown Rice: Unlike white rice, brown rice retains the bran and germ, making it a whole grain choice.
3. Oats: Oatmeal and rolled oats are whole grain options rich in fiber and nutrients.
4. Quinoa: A versatile whole grain that's a good source of protein, fiber, and various vitamins and minerals.
5. Barley: Pearl barley or hulled barley is another whole grain option that can be used in soups, stews, or as a side dish. (caution: contains gluten)



GOING GLUTEN FREE FOR GRAVES



Gluten, a protein found in wheat, barley, and rye, has been implicated in various autoimmune conditions, including celiac disease. While Graves' disease and celiac disease are distinct conditions, they share common autoimmune mechanisms. Some researchers and clinicians believe that gluten can exacerbate autoimmune responses, potentially impacting autoimmune conditions like Graves' disease.

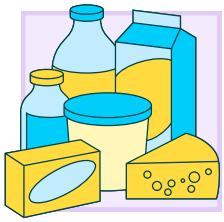
THE RATIONALE FOR A GLUTEN FREE DIET

- **Reducing Inflammation:** Gluten can trigger inflammation in sensitive individuals. Chronic inflammation is a key factor in the progression of autoimmune diseases, including Graves' disease. By eliminating gluten, you may reduce systemic inflammation, thereby potentially alleviating some symptoms and slowing disease progression.
- **Improving Gut Health:** A strong gut lining keeps your immune system calm. Gluten can contribute to increased intestinal permeability, often referred to as "leaky gut." This condition allows undigested food particles and toxins to enter the bloodstream, potentially triggering autoimmune reactions. A gluten-free diet may help restore gut integrity and reduce autoimmune activity.
- **Cross-Reactivity and Molecular Mimicry:** Some proteins in gluten, particularly gliadin, can mimic thyroid tissue, leading to a phenomenon known as molecular mimicry. The immune system, in attacking gluten proteins, may also inadvertently target the thyroid gland. By avoiding gluten, you might reduce this cross-reactive immune response and decrease thyroid gland inflammation.

GLUTEN FREE GRAINS WE LOVE:

1. Quinoa: gluten-free grain that is high in protein and fiber. It can be a substitute for rice or couscous.
2. Rice: particularly brown or wild rice, is a versatile gluten-free grain. It can be used in a wide range of dishes, including stir-fries, pilafs, and sushi.
3. Buckwheat: despite its name, buckwheat is gluten-free and can be used to make pancakes, noodles (such as soba), and as a grain alternative in salads and side dishes.
4. Millet: a small, gluten-free grain that can be used in place of couscous or bulgur. It's great for making porridge, pilafs, and even baked goods.
5. Oats: while naturally gluten-free, it's important to choose certified gluten-free oats to avoid cross-contamination. Oats can be used in baking, as a breakfast cereal, and in granola.





DAIRY AND ALTERNATIVES:

Dairy refers to a broad category of food products derived from milk. It includes various milk-based foods such as milk itself, yogurt, cheese, and other dairy-based products. If tolerated, dairy foods are a significant source of several essential nutrients that can offer benefits in managing Graves Disease.

NUTRIENTS IN DAIRY AND THEIR ROLE IN GRAVES MANAGEMENT:

CALCIUM

People with Graves' disease may be at risk of bone density reduction due to hyperthyroidism; adequate calcium intake helps mitigate this risk.

VITAMIN D

Vitamin D is ESSENTIAL for those with Graves' disease, especially as you may have increased susceptibility to bone-related issues. Vitamin D helps you absorb calcium to protect your bones, and it helps keep your immune system from overreacting.

PROTEIN

Protein-rich dairy sources aid in maintaining muscle strength, which is important for those experiencing muscle weakness associated with Graves' disease.

OTHER NUTRIENTS

- Dairy products contain various other nutrients such as **phosphorus**, **potassium**, **vitamin B12**, and **riboflavin**.
- **Probiotics**: Certain dairy products, like yogurt, contain probiotics that promote gut health. Given the potential link between gut health and autoimmune conditions, probiotics may offer additional benefits.

POTENTIAL CONSIDERATIONS FOR GRAVES MANAGEMENT:

INDIVIDUAL TOLERANCE

Some people may have sensitivities or intolerances to dairy. It's important to be mindful of how dairy products affect YOUR individual symptoms, and consider alternative sources of calcium and nutrients if needed.
As with any dietary component, consider moderation, preferences, and/or tolerances. While dairy can provide essential nutrients it's important to personalize the diet based on YOUR individual needs. Dairy may worsen the autoimmune response in many and is usually recommended to be avoided, especially in the initial recovery phase.

INCORPORATING DAIRY INTO THE DIET:



01

YOGURT

Choose plain, low-fat (if preferred) yogurt without added sugars for a source of protein and probiotics. There are delicious coconut, cashew, and almond alternatives available as well.

02

MILK

Consider no sugar added or other varieties of milk, including cow's milk, various other nut milks such as almond (low-fat), coconut, organic soy milk, or other fortified alternatives.

03

CHEESE

Moderation is key when consuming cheese due to its higher fat content, it can be hard to digest, and can cause constipation. Opt for controlled portions.

DAIRY ALTERNATIVES THAT WE LOOOOVE!

There are various types of non-dairy nut milks available, including:

1. **Coconut Milk:** Made from the grated flesh of mature coconuts, coconut milk has a rich and creamy texture with a distinct coconut flavor. It's commonly used in curries, soups, and desserts. My personal favorite!
2. **Soy Milk:** Produced from soybeans, soy milk is rich in protein and often fortified with vitamins and minerals. It has a slightly nutty taste and works well in both sweet and savory dishes. (Caution in those with soy sensitivity / hormonal fluctuations.)
3. **Almond Milk:** Made from ground almonds and water, almond milk is a popular dairy alternative known for its mild flavor and creamy texture.
4. **Cashew Milk:** Cashew milk is made from blended cashews and water, resulting in a creamy and slightly sweet milk alternative. It's versatile and can be used in various recipes.
5. **Oat Milk:** Oat milk is made from oats blended with water, resulting in a creamy and slightly sweet milk. It's known for its smooth texture and is often used in coffee, cereal, and baking.
6. **Rice Milk:** Made from milled rice and water, rice milk has a mild and slightly sweet flavor. It's a suitable option for those with nut or soy allergies.
7. **Hazelnut Milk:** Hazelnut milk is made from ground hazelnuts and water, offering a rich and slightly nutty flavor. It's a delicious addition to coffee, smoothies, and desserts.
8. **Macadamia Milk:** Macadamia milk is made from macadamia nuts blended with water, resulting in a creamy and slightly sweet milk alternative. It's a good option for those looking for a nut milk with a mild flavor.

These non-dairy nut milks provide alternatives to traditional dairy milk for those with lactose intolerance, dairy allergies, or dietary preferences. They can be used as a substitute in cooking, baking, coffee, cereal, smoothies, and other recipes.

LOW-GLYCEMIC INDEX (GI) FOODS

Low-glycemic index (GI) foods are carbohydrates that are digested and absorbed slowly, causing a gradual and steady rise in blood sugar levels. The glycemic index is a scale that ranks foods based on how quickly they raise blood sugar levels after consumption.

Foods with a low glycemic index typically have a score of 55 or less on the glycemic index scale. These foods are beneficial for Graves due to their potential to help manage insulin levels and improve insulin sensitivity, which are can be disrupted in people with this and other thyroid and/or autoimmune conditions.

Low-GI foods are digested more slowly, causing a gradual increase in blood sugar levels. This slower rise in blood sugar helps prevent rapid spikes in insulin, promoting more stable blood sugar levels. Low GI foods reduce and improve insulin resistance, which in turn can improve hormone balance (including thyroid hormones) in the body. These foods can help the body manage insulin more effectively, reducing the amount needed to regulate blood sugar levels. Lastly, low GI foods are great for managing your weight too. They do this by by promoting a feeling of fullness and reducing hunger pangs. This also improves cortisol levels in your body, by causing less stress on your cells.

EXAMPLES OF LOW-GI FOODS

- Most non-starchy vegetables (e.g., leafy greens, broccoli, cauliflower)
- Whole grains like quinoa, oats, brown rice, corn, millet, amaranth, teff, and buckwheat
- Legumes and pulses such as lentils, chickpeas, and beans
- Nuts and seeds
- Some low-sugar, high fiber fruits like berries, apples, pears, berries, oranges, and other citrus fruits.

Building meals around these foods means steadier energy, fewer crashes, and easier weight management. A practitioner or dietitian can help you tailor this to you.









A NOTE ABOUT MODERATION

Balanced diet also involves moderation (ideally the elimination) of consumption of processed foods, sugary snacks, and unhealthy high-fat foods. Eat mostly real, whole foods, slow down, and notice how food makes you feel. Portion control and mindful eating are essential practices to maintain balance.

HYDRATE, HYDRATE, HYDRATE!

The water requirements for Graves' disease typically involve consuming at least 8-10 glasses of water per day, but individual needs may vary based on factors such as age, weight, activity level, and climate. Hydration is NEEDED for a few reasons:

1. **Thyroid Function:** Proper hydration supports thyroid function by ensuring adequate blood flow to the thyroid gland. Water helps everything work better, from your meds to your digestion to your energy. Dehydration can hinder thyroid hormone production and metabolism, leading to symptoms such as fatigue, weight changes, and mood disturbances.
2. **Medication Absorption:** Many medications used to manage Graves' disease, such as antithyroid drugs or beta-blockers, require sufficient hydration for optimal absorption and effectiveness. Staying hydrated helps ensure medications are absorbed properly, maximizing their therapeutic benefits.
3. **Temperature Regulation:** Those with Graves' disease may experience heat intolerance due to increased metabolism and hormonal imbalances. Proper hydration helps regulate body temperature, aiding in the management of symptoms such as excessive sweating and heat sensitivity.
4. **Digestive Health:** Hydration supports digestive function by promoting the movement of food through the gastrointestinal tract and preventing constipation, which is common with thyroid disorders. Adequate fluid intake can help alleviate gastrointestinal symptoms and improve overall digestive health.
5. **Electrolyte Balance:** Electrolyte imbalances, such as low potassium levels (hypokalemia), can occur with Graves' disease, particularly those receiving treatment with antithyroid medications or experiencing excessive sweating. Proper hydration helps maintain electrolyte balance, supporting muscle function, nerve transmission, and overall physiological stability.
6. **Energy Levels:** Dehydration can contribute to feelings of fatigue and low energy, which are common symptoms of Graves. By staying hydrated, you can maintain optimal energy levels and combat fatigue associated with the condition.

Proper hydration supports thyroid function, optimizes medication effectiveness, regulates body temperature, promotes digestive health, maintains electrolyte balance, and sustains energy levels. Drink plenty of water throughout the day and pay attention to signs of dehydration, such as dry mouth, dark urine, or fatigue.

DIFFERENT DIET OPTIONS FOR GRAVES

Managing with diet involves choosing foods that support thyroid health, reduce inflammation, and balance the immune system. Here are several types of diets that may be helpful:

1. **Anti-inflammatory Diet:**
   - Focus: Reducing inflammation through whole, unprocessed foods.
   - Includes: Fruits, vegetables, whole grains, lean proteins (such as fish and poultry), nuts, seeds, and healthy fats (such as olive oil and avocados).
   - Benefits: Reduces systemic inflammation, which can help manage autoimmune conditions.
2. **Gluten-Free Diet:**
   - Focus: Eliminating gluten to reduce inflammation and autoimmune responses.
   - Includes: Gluten-free grains (such as quinoa, rice, and millet), fruits, vegetables, lean proteins, and gluten-free flours and products.
   - Benefits: Reduces gut inflammation and potential cross-reactivity.
3. **Autoimmune Protocol (AIP) Diet:**
   - Focus: Eliminating foods that may trigger autoimmune responses.
   - Includes: Organic vegetables, fruits, lean meats, seafood, healthy fats, and bone broth, while avoiding grains, dairy, legumes, nightshades, nuts, seeds, and processed foods.
   - Benefits: Helps identify and eliminate potential food triggers, promoting gut health and reducing autoimmune activity.
4. **Paleo Diet:**
   - Focus: Emulating the diet of our ancestors by consuming whole, unprocessed foods.
   - Includes: Fruits, vegetables, lean meats, fish, eggs, nuts, seeds, and healthy fats while avoiding grains, legumes, dairy, and processed foods.
   - Benefits: Cuts out processed foods and lowers inflammation..
5. **Mediterranean Diet:**
   - Focus: Emphasizing plant-based foods, healthy fats, and lean proteins.
   - Includes: Fruits, vegetables, whole grains, fish, poultry, beans, nuts, olive oil, and moderate wine consumption.
   - Benefits: Promotes heart health, reduces inflammation, and provides balanced nutrition.
6. **Low-Glycemic Index (GI) Diet:**
   - Focus: Consuming foods that have a low impact on blood sugar levels.
   - Includes: Whole grains, legumes, vegetables, fruits, lean proteins, and healthy fats while avoiding high-GI foods like refined sugars and processed carbohydrates.
   - Benefits: Helps stabilize blood sugar levels, which takes stress off your hormones and thyroid..
7. **Nutrient-Dense Diet:**
   - Focus: Ensuring high intake of essential nutrients, particularly those important for thyroid health.
   - Includes: Foods rich in selenium, zinc, vitamin D, iodine, omega-3 fatty acids, and antioxidants, such as Brazil nuts, fish, eggs, dairy, and colorful vegetables and fruits.
   - Benefits: Supports thyroid function and overall immune system health, providing necessary nutrients to manage Graves' disease effectively.

A THYROID-HAPPY DIET: AIP

Living with Graves' disease, TED, and other autoimmune thyroid conditions can make it tricky to find the right foods that support thyroid health while also being clean, organic, gluten-free, and dairy-free. An anti-inflammatory diet like the Autoimmune Protocol (AIP) can be really helpful for managing almost ALL autoimmune issues. The AIP diet focuses on eating WHOLE FOODS and eliminates common triggers like gluten and dairy, which are known to increase inflammation and cause gut issues (aka dysbiosis). By cutting out these triggers, the AIP diet helps heal the gut, reduce leaky gut, and lower inflammation throughout the body. This is an important step when dealing with autoimmune thyroid disease, given the strong connection between gut health and autoimmune conditions. Many people feel a real difference in their symptoms within a few weeks.

The AIP diet is a targeted approach designed to manage autoimmune conditions by reducing inflammation, supporting gut health, and identifying food triggers. It's an extension of the paleo diet, focusing on whole foods like meats, veggies, fruits, nuts, and seeds, while cutting out processed foods, grains, legumes, dairy, and refined sugars.

Typically, the AIP diet is followed for about 30 to 60 days to give the body time to heal and reduce inflammation. After this initial elimination phase, foods are gradually reintroduced to pinpoint any specific triggers that might be contributing to autoimmune symptoms. It's important to work with a healthcare professional or dietitian when starting the AIP diet, especially if you have other health conditions or nutrient deficiencies, to ensure your nutritional needs are met.

Here's what to focus on, and what to take a break from, during AIP:

- **Gluten**: Found in wheat, barley, rye, and some other grains.
- **Dairy**: Including milk, cheese, yogurt, and other dairy products.
- **Grains**: All grains are excluded at first, though some people may eventually reintroduce certain non-gluten grains.
- **Legumes**: Beans, chickpeas, lentils, peanuts, and soy products are avoided due to their potential to increase inflammation and contribute to gut issues.
- **Nightshade Vegetables**: Certain vegetables like tomatoes, potatoes (sweet potatoes are okay), eggplants, and peppers are avoided because they contain compounds that might trigger inflammation.
- **Processed Foods**: Foods with additives, preservatives, artificial colors, and flavors are eliminated due to their potential to trigger immune reactions.

Instead, the AIP diet focuses on nutrient-rich foods that support gut healing and reduce inflammation, including:

- **Quality Protein**: Grass-fed meat, wild-caught fish, and organ meats.
- **Healthy Fats**: Avocado, coconut oil, olive oil, and fatty fish.
- **Non-Starchy Vegetables**: Leafy greens, cruciferous veggies, carrots, and squash.
- **Fruits**: Berries, apples, pears, apricots, and other low-sugar fruits.
- **Fermented Foods**: Sauerkraut, kimchi, kefir and kombucha to support a healthy gut microbiome.
- **Bone Broth**: Rich in collagen and nutrients that support gut healing and immune function.

FOCUS ON NUTRIENT-RICH FOODS

1. **Quality Protein**
   - What to Include: Grass-fed meats, wild-caught fish, and organ meats.
   - Why It Helps: High-quality protein sources provide essential amino acids that support immune function, tissue repair, and hormone production. Grass-fed meats and wild-caught fish also contain higher levels of omega-3 fatty acids, which are anti-inflammatory.

2. **Healthy Fats**
   - What to Include: Avocados, coconut oil, olive oil, and fatty fish.
   - Why It Helps: Healthy fats are essential for reducing inflammation and supporting hormone production. Omega-3 fatty acids found in fatty fish (like salmon and sardines) are particularly effective in modulating the immune response and supporting brain health.

3. **Non-Starchy Vegetables**
   - What to Include: Leafy greens, cruciferous vegetables (like broccoli, kale, and cauliflower), carrots, squash, and zucchini.
   - Why It Helps: Vegetables are packed with antioxidants, vitamins, and minerals that help combat oxidative stress and inflammation. Cruciferous vegetables, in particular, support thyroid function by promoting detoxification and balancing estrogen levels.

4. **Fruits**
   - What to Include: Berries, apples, pears, apricots, and other low-sugar fruits.
   - Why It Helps: Fruits provide fiber, vitamins, and antioxidants that support gut health and reduce inflammation. Low-sugar fruits are less likely to spike blood sugar, which can help keep insulin levels stable and reduce inflammation.

5. **Fermented Foods**
   - What to Include: Sauerkraut, kimchi, kefir, kombucha, and other fermented foods.
   - Why It Helps: Fermented foods are rich in probiotics, which help balance the gut microbiome and support digestion. A healthy gut means a calmer immune system.

6. **Bone Broth**
   - What to Include: Homemade bone broth made from grass-fed animals or chicken.
   - Why It Helps: Bone broth is rich in collagen, amino acids, and minerals like magnesium and calcium, which support gut healing, immune function, and joint health. It also helps soothe the digestive tract, which can be helpful for individuals with leaky gut or digestive discomfort.

WHY ELIMINATE CERTAIN FOODS?

1. **Gluten**
   - Why Avoid It: Gluten is a protein found in wheat, barley, rye, and some other grains. For individuals with autoimmune thyroid conditions, gluten can be a major culprit in increasing inflammation. Gluten has been shown to trigger immune responses and may exacerbate the inflammation associated with autoimmune diseases.
   - The Effect on the Body: Gluten can disrupt the gut lining, contributing to leaky gut (intestinal permeability), which in turn allows toxins and undigested food particles to enter the bloodstream and trigger immune system activation. This can worsen autoimmune symptoms and thyroid health.

2. **Dairy**
   - Why Avoid It: Dairy products, including milk, cheese, and yogurt, are excluded due to their potential to increase inflammation and gut irritation. Some people with autoimmune conditions have sensitivities to dairy, which can worsen symptoms.
   - The Effect on the Body: Dairy contains proteins like casein and whey, which may trigger immune reactions, particularly in people with leaky gut or food sensitivities. Dairy can also contribute to bloating, gas, and other digestive issues, further affecting gut health and inflammation.

3. **Grains**
   - Why Avoid It: In addition to gluten-containing grains, all grains are eliminated at the start of the AIP diet, including oats, rice, quinoa, and corn. While grains can be a good source of carbohydrates and fiber, they can be inflammatory for people with autoimmune conditions.
   - The Effect on the Body: Grains contain compounds such as lectins and phytates, which can irritate the gut and contribute to dysbiosis (an imbalance of gut bacteria). For those with Graves' disease, reducing grain consumption can help decrease the burden on the digestive system and reduce systemic inflammation.

4. **Legumes**
   - Why Avoid It: Legumes, including beans, lentils, chickpeas, and soy products, are eliminated due to their potential to trigger immune responses and worsen gut issues.
   - The Effect on the Body: Legumes contain compounds called lectins and oligosaccharides, which can interfere with nutrient absorption and irritate the gut lining. They can contribute to bloating, gas, and other digestive discomforts, making them difficult to digest for those with autoimmune conditions like Graves' disease.

WHY ELIMINATE CERTAIN FOODS?

5. **Nightshade Vegetables**
- Why Avoid It: Nightshades, such as tomatoes, potatoes (except sweet potatoes), eggplants, and peppers, contain alkaloids that may trigger inflammation in certain individuals.
- The Effect on the Body: These vegetables can aggravate joint pain and inflammation, which is particularly problematic for those with autoimmune diseases like Graves'. They may also interfere with the body's ability to heal, especially if you're dealing with leaky gut.

6. **Processed Foods**
- Why Avoid It: Processed foods, which include packaged snacks, sugary treats, and foods with additives, preservatives, and artificial flavors, are eliminated because they often contain ingredients that can worsen inflammation and immune function.
- The Effect on the Body: Processed foods are loaded with refined sugars, unhealthy fats, and additives that promote inflammation and oxidative stress, all of which can worsen autoimmune disease symptoms and hinder thyroid function.

7. **Soy**
- Why Avoid It: Soy products, including tofu, tempeh, edamame, soy milk, and soy-based processed foods, are excluded due to their potential to interfere with thyroid function and hormone balance.
- The Effect on the Body: Soy contains compounds called phytoestrogens, which can mimic estrogen in the body. For those with autoimmune thyroid conditions, these compounds may disrupt thyroid hormone production and exacerbate symptoms. Additionally, soy can contribute to gut irritation and inflammation, further complicating autoimmune conditions like Graves' disease.

8. **Sugar**
- Why Avoid It: Refined sugars, including those found in sugary snacks, drinks, and processed foods, are eliminated because they can significantly increase inflammation and disrupt immune function.
- The Effect on the Body: High sugar intake leads to spikes in blood glucose levels, which triggers the release of insulin and can promote inflammation throughout the body. For those with autoimmune thyroid conditions, sugar can exacerbate symptoms by contributing to weight gain, insulin resistance, and increased oxidative stress, all of which can worsen inflammation and hinder the body’s ability to heal. Reducing sugar helps stabilize blood sugar levels and supports a more balanced immune response.

Sample Shopping List

THYROID-HAPPY DIET

- **Proteins**:
  - Organic chicken breast
  - Wild-caught fish (salmon, mackerel, sardines)
  - Organic tofu or tempeh (for vegetarian/vegan)

- **Vegetables**:
  - Leafy greens (spinach, kale, Swiss chard)
  - Cruciferous vegetables (broccoli, cauliflower, Brussels sprouts)
  - Bell peppers *(if tolerated)*
  - Cucumber
  - Carrots
  - Zucchini

- **Fruits**:
  - Berries (blueberries, strawberries, raspberries)
  - Citrus fruits (lemons, oranges)
  - Apples, Pears
  - Kiwi

- **Grains & Legumes**:
  - Quinoa
  - Brown rice
  - Lentils
  - Gluten-free oats

- **Nuts & Seeds**:
  - Almonds
  - Walnuts
  - Chia seeds
  - Flaxseeds

- **Healthy Fats**:
  - Avocado
  - Extra virgin olive oil
  - Coconut oil

- **Herbs & Spices**:
  - Turmeric
  - Ginger
  - Garlic
  - Cinnamon
  - Parsley
  - Basil

- **Others**:
  - Coconut yogurt *(probiotic!)*
  - Coconut milk (unsweetened)
  - Almond milk (unsweetened)
  - Apple cider vinegar
  - Bone broth
  - Fermented foods
    - (Sauerkraut, kimchi, kombucha)
  - Himalayan pink salt
  - Other:_____
  - Other:_____

Recipe Ideas
THYROID-HAPPY DIET

Day 1:
Breakfast: Quinoa porridge with berries and almond milk.
Lunch: Grilled chicken salad with mixed greens, cucumber, avocado, and lemon-turmeric dressing.
Dinner: Baked salmon with steamed broccoli and quinoa.

Day 2:
Breakfast: Green smoothie with spinach, banana, almond milk, and chia seeds.
Lunch: Veggie soup with carrots, celery, and broccoli.
Dinner: Stir-fried tofu with mixed vegetables and brown rice or quinoa.

Day 3:
Breakfast: Oatmeal topped with sliced apples, walnuts, and cinnamon.
Lunch: Quinoa salad with bell peppers, cucumber, avocado, and lemon vinaigrette.
Dinner: Baked chicken breast with roasted zucchini and sweet potato.

Day 4:
Breakfast: Plant-based yogurt with berries and a sprinkle of flaxseeds.
Lunch: Stuffed bell peppers or zucchini with quinoa, black beans, tomatoes, and spices.
Dinner: Grilled fish tacos with cabbage slaw and avocado.

Day 5:
Breakfast: Chia seed pudding topped with sliced bananas and almonds.
Lunch: Chicken and vegetable stir-fry with ginger and garlic served over brown rice.
Dinner: Veggie curry with coconut milk, served with brown rice or quinoa.

Day 6:
Breakfast: Smoothie bowl topped with mixed berries, shredded coconut, and granola.
Lunch: Spinach salad with grilled chicken, strawberries, almonds, and balsamic vinaigrette.
Dinner: Baked tofu with roasted zucchini and quinoa pilaf.

Day 7:
Breakfast: Avocado toast on gluten-free bread with sliced tomatoes and a sprinkle of Himalayan salt.
Lunch: Lentil and vegetable soup with a side of gluten-free crackers.
Dinner: Grilled shrimp skewers with mixed vegetables and brown rice.

My Go-to Anti-inflammatory Crock Pot

THYROID-HAPPY DIET

Ingredients:
(All organic!)

1-2 tablespoons crushed ginger
10-20 garlic cloves
1-2 packages chicken thighs or breasts
1-2 large red/purple sweet potatoes
half an onion
half or 1 full pack baby carrots
half or 1 full pack broccoli
half or 1 full pack green beans
1 container of bone broth
fresh cilantro sprigs
few cups of organic quinoa

Directions:

1. Place the chicken at the bottom of the crockpot. Season with sea salt, pepper, etc. whatever herbs you like.
2. Coat with crushed ginger, fresh garlic gloves, chopped onions. I like to let it marinate the chicken so I do this step before the colorful veggies.
3. Throw in all of those veggies in whatever order you like. I cut up the sweet potatoes and green beans, then throw in everything else whole.
4. Set on low and it should be ready in 4-5 hours. Stir occasionally!
5. Serve over quinoa, top with fresh cilantro/herbs, and enjoy!!

I make this every week, no lie. Usually like to make this early in the week and have lots of leftovers. It tastes even better in the days to follow as it soaks in all of the veggie goodness. I start it around noon or 1pm, and then its ready for a nice early dinner. Sometimes I dress it with turmeric dressing or rosemary for extra flavor. Let me know what you think!

Gut-healing Smoothie
THYROID-HAPPY DIET

Ingredients:
(All organic!)

1-2 cups plant-based milk (I love coconut)	**healthy fats, nutrients**
1 cup plant-based kefir or coconut water	**probiotic**
1 scoop l-glutamine powder (I use Glutashield)	**gut lining support**
1 scoop colostrum (I use MegaIG2000 or MegaMucosa)	**gut lining support**
1-2 scoops protein powder, vanilla or chocolate (I use Orgain)	**protein needs**
1 scoop collagen powder (optional, for beauty and joint benefits)	**hair, skin, nails, joints**
2 tablespoons ground flaxseed powder	**omega-3, fiber**
1-2 tablespoons nut or seed butter (I use sunflower seed)	**healthy fats, iron**
1-2 cups frozen mixed berries	**phytonutrients**
1-2 brazil nuts (optional)	**selenium**
1-2 teaspoons chia seeds	**omega-3, fiber**
1-2 teaspoons coconut flakes	**fiber, tasty**

Make it a *detox*:

1 teaspoon spirulina, chlorella, or activated charcoal	**heavy metal detox**

Directions:

1. Pour the milk/kefir in first.
2. Add in the powders and mix with a spoon.
3. Add nut butter
4. Add frozen berries and brazil nuts if desired.
5. Mix in blender or bullet.
6. Top with chia seeds and coconut flakes.
7. Enjoy :)



I make this every morning, its been the highlight of my mornings. I try to have it within one hour of waking up, because breaking my fast with protein sends a signal to my body and adrenals that I am safe, and helps it to function optimally throughout the day with less fluctuations. The protein scoop and health fats are really important to help prevent insulin imbalances.

I mindfully prepare it and clean the tools right away so it cleans easily and I don't have to think about it later. I sip on it slowly and try to chew the seeds and coconut flakes. I take this time to think of what I'm grateful for and enjoy every sip. Rinse and repeat!

Chapter 7 MEDICAL TREATMENTS AND THERAPIES

Conventional and functional medicine are not enemies. Methimazole gave me real relief when my levels were out of control, and root-cause work is what helped me heal. This chapter covers the medications, procedures, and newest TED treatments, so you can walk into your appointments informed and ready to ask questions.

CONVENTIONAL THERAPIES FOR MANAGING GRAVES SYMPTOMS:

1. **Antithyroid Drugs**
   - Methimazole (Tapazole) and its prodrug Carbimazole (not available in the US)
   - Propylthiouracil (PTU)
2. **Beta-Blockers**
   - Beta-blockers help alleviate symptoms like rapid heart rate, tremors, and anxiety by blocking the effects of excess thyroid hormones: Propranolol, Atenolol, Metoprolol.
3. **Iodine and Adjunct Therapies**
   - Potassium Iodide (SSKI, Lugol's Solution)
   - Cholestyramine
   - Lithium and Potassium Perchlorate (rarely used)
4. **Orbital Radiotherapy**
5. **Corticosteroids**
   - IV Methylprednisolone (preferred for moderate-to-severe active TED)
   - Oral Prednisone
6. **Immunosuppressive Agents**
   - Mycophenolate Mofetil (CellCept)
   - Azathioprine, Cyclosporine, Sirolimus (second-line)
7. **Monoclonal Antibodies**
   - Teprotumumab (Tepezza)
   - Veligrotug (Lumvoa)
   - Tocilizumab (Actemra), off-label
   - Rituximab (Rituxan), off-label
8. **Immunomodulators**
   - Intravenous Immunoglobulin (IVIG)
10. **Off-Label Compounds**
    - Low-Dose Naltrexone (LDN)
11. *On the Horizon*
    - Satralizumab, FcRn inhibitors, oral and subcutaneous IGF-1R therapies
12. **Radioactive Iodine Therapy I-131 (Radioiodine):**
13. **Thyroidectomy**

LETS TALK ABOUT METHIMAZOLE

I want to spend a little time talking about methimazole, because if you've been diagnosed with Graves' disease, there's a good chance your doctor has talked to you about methimazole and/or prescribed it to you. And then sent you on your way with no extra information... does that sound familiar?

This medication is one of the most common first-line treatments used to lower thyroid hormone levels, and understanding how it works can help you feel more confident and informed on your healing journey.

Methimazole is an ***antithyroid*** drug that works by blocking an enzyme called thyroid peroxidase, which your thyroid needs in order to produce hormones like T3 and T4. By slowing down this process, methimazole helps reduce the excess thyroid hormone that's driving many of the symptoms associated with Graves'. This can bring relief from symptoms like rapid heartbeat, anxiety, heat intolerance, insomnia, unintentional weight loss, hand tremors, and more. While it doesn't cure Graves' disease, methimazole is often used to manage it short-term or long-term depending on your specific case.

Traditionally, methimazole is ideally dosed based on how elevated your thyroid hormone levels are, especially Free T4 and Free T3. Some practitioners still dose by TSH levels, which is not reliable and often causes overdosing. The typical starting dose ranges from 10 to 30 mg per day, sometimes split into two doses. If thyroid levels are very high, higher doses may be used initially to bring things under control. As hormone levels begin to normalize, the dose is tapered down over time to find the lowest effective dose that keeps your thyroid in a balanced (euthyroid) state.

While this sounds simple in theory, it often doesn't play out that way in real life. One of the most common challenges with methimazole is that the dose can be difficult to get just right. Many people are started on a dose that's a little too strong for what they actually need, especially after the initial inflammatory surge passes. This can lead to overcorrection, meaning the thyroid slows down too much and you shift into hypothyroidism, which brings a whole new set of symptoms.

Hypothyroidism can feel just as hard as hyperthyroidism. You might notice fatigue, brain fog, constipation, weight gain, depression, feeling cold all the time, or slower heart rate. The tricky part is that these symptoms can come on gradually, and they often overlap with other issues you might already be managing, like stress or inflammation. This is why regular monitoring of TSH, Free T4, and especially Free T3 is essential. Sometimes labs look okay on paper, but your body is telling a different story, and that matters.

LETS TALK ABOUT METHIMAZOLE

Another drawback is that dosing adjustments are often reactive, meaning you may have to feel off for several weeks before labs catch up and your provider makes a change. Our thyroid needs can shift quickly, especially early in treatment, but traditional approaches often don't keep pace. Some protocols also focus mostly on lab values and not enough on how you're actually feeling, or what may be contributing to the autoimmune response in the first place.

That said, methimazole can still be a very helpful tool. It helps reduce the hormonal chaos that fuels Graves' and indirectly supports Thyroid Eye Disease (TED) by stabilizing the immune system. When thyroid levels are uncontrolled or swing rapidly, TED symptoms can worsen or progress. So while methimazole doesn't directly treat the eyes, it helps reduce inflammation overall, which can support eye health and slow down disease activity.

In some cases where thyroid levels are especially hard to stabilize, a strategy called the block and replace method may be used. This involves using a higher dose of methimazole to completely shut down thyroid hormone production, and then adding back a consistent dose of levothyroxine (synthetic thyroid hormone) to bring levels into a safe, stable range. This might sound counterintuitive, but it allows for more consistent control, especially in people who swing between hyper and hypo or don't tolerate small dose adjustments well. It's not right for everyone, but for some people it can provide a more stable path forward.

In some cases where methimazole isn't an option, such as during the first trimester of pregnancy or in people who experience severe side effects, another medication called propylthiouracil (PTU) may be used instead. PTU also blocks thyroid hormone production and has the added effect of slightly reducing the conversion of T4 to T3. However, it tends to have a higher risk of liver toxicity, so it's usually reserved for specific situations or short-term use.

For those who are unable to achieve stable hormone levels despite medication, or for whom antithyroid drugs are not tolerated, total thyroidectomy (TT) may be recommended. This is a surgical procedure that removes the entire thyroid gland and can provide immediate control of hormone levels, which can be especially important when TED is progressing rapidly or when thyroid levels remain dangerously high. After surgery, lifelong thyroid hormone replacement is required, but some people find this route gives them more predictability and peace of mind in the long run.

As with all treatments, methimazole is just one option and one piece of the healing puzzle. It's a tool, not a forever sentence. Some people are managed well on methimazole and end up taking it long term. Some people can be on it for just a few months. Taking it doesn't mean you've failed, and coming off it eventually doesn't mean you've won. You are allowed to ask questions, explore your options, and make changes as your journey evolves. Healing isn't linear, and it's not one-size-fits-all. You're doing your best, and that's more than enough.

PRESCRIPTION MEDICATIONS FOR MANAGING GRAVES' DISEASE AND THYROID EYE DISEASE (TED)

Antithyroid Medications

- **Methimazole (Tapazole)**
  - Mechanism of Action: Methimazole inhibits the enzyme thyroid peroxidase, which plays a critical role in the production of thyroid hormones (T3 and T4). Carbimazole, used outside the US, is converted to methimazole in the body.
  - Dosing: Because methimazole has a long action inside the thyroid, it is usually taken once daily. Starting doses typically range from 10-30 mg per day depending on how elevated free T4 is. Maintenance doses are usually lower, often 2.5-10 mg per day.
  - Side Effects: Common side effects include rash, itching, joint pain, and gastrointestinal upset. Severe but rare side effects include agranulocytosis (a potentially life-threatening drop in white blood cell count), liver toxicity, and vasculitis.
  - Risks: You'll need regular blood work to catch side effects early and fine-tune your dose. Any sore throat or fever while on methimazole should be checked right away with a CBC. Methimazole is avoided in the first trimester of pregnancy due to birth defect risk.
- **Propylthiouracil (PTU)**
  - Mechanism of Action: PTU also inhibits thyroid peroxidase but has an additional mechanism of action by inhibiting the conversion of T4 to the more active T3.
  - Dosing: Initial doses are typically 50-150 mg every 8 hours. Maintenance doses are generally 50-150 mg per day.
  - Side Effects: Similar to methimazole, with additional risks of liver toxicity, which can be severe. PTU carries an FDA boxed warning for severe liver injury.
  - Risks: Given the higher risk of liver toxicity, PTU is often reserved for specific cases, such as during the first trimester of pregnancy, thyroid storm, or for patients who cannot tolerate methimazole.
- ***Block-and-Replace Therapy***
  - Mechanism of Action: A higher dose of methimazole fully blocks thyroid hormone production while levothyroxine is added back to keep levels steady.
  - Dosing: Individualized. This approach is more common in Europe than in the US.
  - Side Effects: Same as methimazole, with a higher chance of dose-related side effects.
  - Risks: Not used in pregnancy, since methimazole crosses the placenta but levothyroxine does not cross well.

Beta-Blockers

- **Propranolol, Atenolol, Metoprolol**
  - Mechanism of Action: Beta-blockers block beta-adrenergic receptors, reducing the symptoms of hyperthyroidism, such as palpitations, tremors, heat intolerance, and anxiety. Propranolol at higher doses also mildly reduces the conversion of T4 to T3.
  - Dosing: Varies per drug (ex. propranolol 10-40 mg three to four times a day, adjusted based on symptom relief, while atenolol and metoprolol may be once daily).
  - Side Effects: Common side effects include fatigue, dizziness, cold hands and feet, and gastrointestinal discomfort. Severe side effects can include bradycardia (slow heart rate) and hypotension (low blood pressure).
  - Risks: Caution is needed in patients with asthma or chronic obstructive pulmonary disease (COPD), as non-selective beta-blockers like propranolol can constrict airways. Beta-blockers should not be stopped abruptly.

PRESCRIPTION MEDICATIONS FOR MANAGING GRAVES' DISEASE AND THYROID EYE DISEASE (TED)



Iodine and Adjunct Therapies

- **Potassium Iodide (SSKI, Lugol's Solution)**
  - Mechanism of Action: Large doses of iodine temporarily block the release of thyroid hormone and reduce blood flow to the thyroid gland (the Wolff-Chaikoff effect).
  - Dosing: Short-term only, commonly for 7-10 days before thyroidectomy or in thyroid storm, always given after an antithyroid drug is started.
  - Side Effects: Metallic taste, rash, salivary gland swelling, and stomach upset.
  - Risks: The effect wears off over time (escape), so it is not a long-term solution. It also delays radioactive iodine treatment for weeks.
- **Cholestyramine**
  - Mechanism of Action: This bile acid binder traps thyroid hormone in the gut, interrupting its recycling through the liver and helping lower hormone levels faster.
  - Dosing: Typically 4 g two to four times a day, used short-term alongside antithyroid drugs.
  - Side Effects: Constipation, bloating, and gas.
  - Risks: Binds many medications and fat-soluble vitamins, so other medications should be spaced at least 4 hours apart.
- **Lithium and Potassium Perchlorate**
  - Mechanism of Action: Lithium blocks thyroid hormone release. Potassium perchlorate blocks iodine uptake into the thyroid.
  - Dosing: Specialist-directed, short-term use only.
  - Side Effects: Lithium can cause tremor, thirst, and kidney effects. Perchlorate can cause blood disorders.
  - Risks: These are rarely used and reserved for patients who cannot take standard antithyroid drugs.

Orbital Radiotherapy

- **Low-Dose Orbital Radiation**
  - Mechanism of Action: Targeted low-dose radiation calms immune cells in the tissues behind the eyes.
  - Dosing: Commonly 20 Gy delivered in 10 sessions over 2 weeks, sometimes combined with steroids.
  - Side Effects: Temporary worsening of eye irritation and dryness.
  - Risks: Works best for active disease with limited eye movement. Avoided in people with diabetic retinopathy and generally in those under 35.

PRESCRIPTION MEDICATIONS FOR MANAGING GRAVES' DISEASE AND THYROID EYE DISEASE (TED)

Corticosteroids

- **IV Methylprednisolone (Solu-Medrol)**
  - Mechanism of Action: A powerful anti-inflammatory and immunosuppressant that reduces swelling and immune activity in the eye muscles and fat behind the eye.
  - Dosing: The standard European (EUGOGO) regimen for moderate-to-severe active TED is 500 mg IV once weekly for 6 weeks, then 250 mg once weekly for 6 weeks (4.5 g total). The total course should never exceed 8 g.
  - Side Effects: Mood changes, trouble sleeping, flushing, elevated blood sugar and blood pressure, and stomach upset.
  - Risks: High cumulative doses can cause serious liver injury, so liver function is checked before and during treatment. IV pulses are preferred over oral steroids because they work better and cause fewer side effects. Often combined with mycophenolate.
- **Prednisone**
  - Mechanism of Action: Prednisone is an oral anti-inflammatory and immunosuppressant that reduces inflammation in thyroid eye disease.
  - Dosing: For TED, starting doses of 30-60 mg per day may be used, with gradual tapering over weeks to months. Lower doses are used short-term to prevent TED flares after radioactive iodine.
  - Side Effects: Common side effects include weight gain, mood changes, and increased risk of infections. Long-term use can lead to osteoporosis, diabetes, and hypertension.
  - Risks: Long-term corticosteroid therapy requires careful monitoring to manage and mitigate side effects. Symptoms often return when the dose is tapered.

Immunosuppressive Agents

- **Mycophenolate Mofetil (CellCept)**
  - Mechanism of Action: Mycophenolate inhibits the proliferation of T and B lymphocytes, reducing the immune response implicated in Graves' disease and TED.
  - Dosing: In TED, often 720 mg per day of mycophenolate sodium (or about 1,000 mg per day of mycophenolate mofetil) combined with IV steroids for 24 weeks. Higher doses, up to 1,000 mg twice daily, are used in some protocols.
  - Side Effects: Side effects include gastrointestinal disturbances, increased risk of infections, and potential liver toxicity.
  - Risks: Requires regular monitoring of blood counts and liver function tests. Causes birth defects, so reliable contraception is required.
- **Azathioprine, Cyclosporine, and Sirolimus**
  - Mechanism of Action: Each suppresses T cell activity through a different pathway. Sirolimus also blocks the mTOR pathway, which is involved in the tissue growth seen in TED.
  - Dosing: Specialist-directed and weight-based. Cyclosporine is usually combined with steroids.
  - Side Effects: Include infections, GI upset, and blood count changes. Cyclosporine can raise blood pressure and affect the kidneys.
  - Risks: These are second-line options with less evidence than the therapies above. They require regular lab monitoring.

PRESCRIPTION MEDICATIONS FOR MANAGING GRAVES' DISEASE AND THYROID EYE DISEASE (TED)

Monoclonal Antibodies

- **Teprotumumab (Tepezza)**
  - Mechanism of Action: Teprotumumab is an insulin-like growth factor-1 receptor (IGF-1R) inhibitor that reduces the inflammatory and fibrotic processes in TED. It was the first FDA-approved TED drug (2020).
  - Dosing: Administered as an intravenous infusion every three weeks, for a total of eight doses (10 mg/kg first dose, then 20 mg/kg).
  - Side Effects: Common side effects include muscle spasms, nausea, diarrhea, hair loss, fatigue, and increased blood sugar levels. Hearing changes (muffled hearing, ringing, or hearing loss) affect a meaningful number of patients, not just a rare few, and can be permanent.
  - Risks: The FDA strengthened the hearing warning in 2023, so a baseline hearing test and monitoring are recommended. Can worsen inflammatory bowel disease. Causes fetal harm, so contraception is required during treatment and for 6 months after the last dose. Blood sugar should be monitored closely in patients with diabetes.
- **Veligrotug (Lumvoa)**
  - Mechanism of Action: Veligrotug is a full IGF-1R antagonist, the same drug class as Tepezza. The FDA approved it on June 26, 2026, for TED regardless of disease activity or duration. Approval was based on the THRIVE (active TED) and THRIVE-2 (chronic TED) phase 3 trials.
  - Dosing: 10 mg/kg intravenous infusion every 3 weeks for 5 infusions, a 12-week course. This is fewer infusions than Tepezza.
  - Side Effects: Expected to be similar to other IGF-1R therapies, including muscle spasms, hearing changes, elevated blood sugar, and infusion reactions. Check the current prescribing information for exact rates.
  - Risks: Improvements in eye bulging (proptosis) were seen as early as 3 weeks, and it is the first TED drug to show significant improvement in double vision, including complete resolution, in both active and chronic TED. Like Tepezza, it needs monitoring for hearing and blood sugar and is not used in pregnancy. As a new drug, long-term relapse data are still being gathered.
- **Tocilizumab (Actemra), off-label**
  - Mechanism of Action: Tocilizumab blocks the interleukin-6 (IL-6) receptor. IL-6 drives inflammation in the eye tissues and stimulates the TSH receptor on orbital cells.
  - Dosing: In the main TED clinical trial, 8 mg/kg IV every 4 weeks for 4 doses. A subcutaneous form (162 mg weekly) has also been used.
  - Side Effects: Upper respiratory infections, headache, elevated cholesterol, elevated liver enzymes, and low white blood cell counts.
  - Risks: Carries a boxed warning for serious infections, so screening for tuberculosis and hepatitis B is required before starting. Rare risk of bowel perforation, especially in people with a history of diverticulitis. Mostly used for active TED that has not responded to steroids.
- **Rituximab (Rituxan), off-label**
  - Mechanism of Action: Rituximab targets CD20 on B cells, depleting the immune cells that produce thyroid-stimulating antibodies.
  - Dosing: Commonly 1,000 mg IV given twice, two weeks apart, or a lower single dose of 100-500 mg.
  - Side Effects: Infusion reactions (fever, chills, rash), fatigue, and increased infection risk.
  - Risks: Clinical trial results in TED have been mixed. Hepatitis B screening is required. Rare risk of a serious brain infection (PML). Reserved for steroid-resistant cases.

PRESCRIPTION MEDICATIONS FOR MANAGING GRAVES' DISEASE AND THYROID EYE DISEASE (TED)

Surgical Rehabilitation for TED

Surgery is done once TED is inactive, usually after 6 months of stable eye findings. The order matters, because each step can change the next.

1. Orbital Decompression: Removes bone and/or fat behind the eye to give swollen tissues room, reducing eye bulging. It is also done urgently if the optic nerve is being compressed.
2. Strabismus (Eye Muscle) Surgery: Realigns the eye muscles to correct double vision.
3. Eyelid Surgery: Lowers retracted eyelids and addresses puffiness to restore a natural appearance and protect the eye surface.

Supportive Eye Care

- Preservative-free lubricating eye drops during the day and gels or ointment at night
- Moisture goggles, wraparound sunglasses, or taping the eyelids closed at night if they do not fully close
- Sleeping with the head elevated to reduce morning swelling
- Prism glasses for double vision
- Botulinum toxin injections or hyaluronic acid filler to temporarily improve eyelid retraction
- Quitting smoking, which is the single biggest modifiable risk factor for TED severity

Off-Label Immune-Modulating Compounds

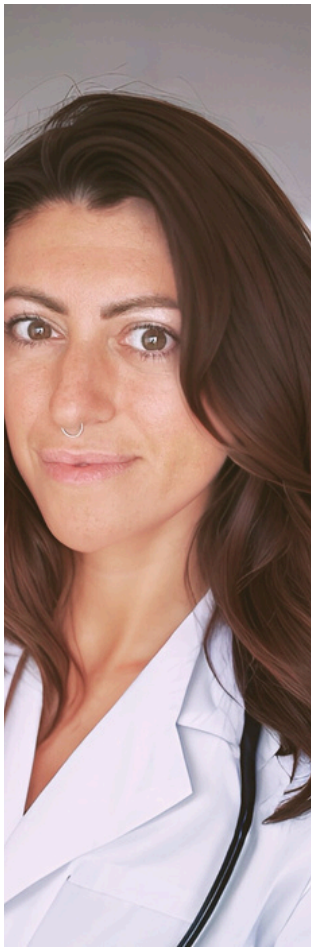
- **Low-Dose Naltrexone (LDN)**
  - Mechanism of Action: LDN briefly blocks opioid receptors, which is thought to trigger a rebound increase in endorphins and enkephalins. It also calms microglia and other immune cells through the TLR4 pathway, which may reduce autoimmune activity and inflammation.
  - Dosing: Typical doses for autoimmune conditions range from 1.5 to 4.5 mg taken orally at bedtime, often started low and increased slowly. These must be compounded by a pharmacist.
  - Side Effects: Side effects are generally mild and may include vivid dreams, insomnia, and headache.
  - Risks: LDN has encouraging data in several autoimmune conditions, but studies specific to Graves' disease and TED are still limited. Cannot be taken with opioid pain medications. It should be used under medical supervision.

On the Horizon: Therapies in Clinical Trials

- Satralizumab: A subcutaneous IL-6 receptor antibody, similar to Actemra, being studied for TED.
- FcRn Inhibitors (batoclimab, IMVT-1402, efgartigimod): Lower levels of circulating antibodies, including the TSH receptor antibodies that drive both Graves' and TED.
- Linsitinib: An oral IGF-1R blocker, which could offer a pill option instead of infusions.
- Subcutaneous IGF-1R Antibodies: At-home injections designed to work like Tepezza and Lumvoa without IV infusions.

CHOOSING MEDICAL INTERVENTIONS FOR GRAVES

Aside from the medications, it's also important to take into account potential other medical interventions. These are usually reserved for more severe or treatment resistant situations. Each has its benefits and considerations, and the choice depends on severity of symptoms, patient preferences, and overall health status.



1. **Radioactive Iodine Therapy (RAI):**
    - RAI is a non-invasive treatment where the patient ingests a capsule or liquid containing radioactive iodine (I-131).
    - The radioactive iodine selectively accumulates in the thyroid gland, where it emits radiation, destroying the overactive thyroid cells.
    - This treatment aims to reduce the production of thyroid hormones, effectively managing hyperthyroidism.
    - RAI is considered a definitive treatment for Graves' disease and is often chosen for its effectiveness and convenience.
    - It is ***NOT indicated for those with Graves eye symptoms***, as it can make Graves Ophthalmopathy / TED worse.

1. **Thyroidectomy (Surgical Removal of the Thyroid Gland):**
    - Thyroidectomy involves the partial or total removal of the thyroid gland through surgery.
    - It is typically recommended when other treatments, such as antithyroid drugs or RAI, are not suitable, ineffective, or if there are concerns about thyroid nodules or cancer.
    - Thyroidectomy is performed under general anesthesia, and the surgeon may opt for a traditional open approach or minimally invasive techniques like endoscopic or robotic-assisted surgery.
    - Potential risks of thyroidectomy include damage to surrounding structures (such as the parathyroid glands or recurrent laryngeal nerve) and the need for lifelong thyroid hormone replacement therapy.

Each of these medical procedures has its benefits, risks, and considerations. The choice of treatment depends on factors such as the severity of symptoms, patient preferences, overall health status, and potential contraindications. It's important for people with Graves' disease to discuss treatment options thoroughly with their healthcare provider to determine the most suitable approach for their specific needs. Regular monitoring and follow-up care are necessary to ensure optimal management.

LIFE AFTER TOTAL THYROIDECTOMY (TT)

Having your thyroid removed is not the end of your thyroid journey. It's the start of a new chapter. Many people feel relief once their hyperthyroid symptoms are finally gone, while others feel unsure about what comes next. With the right care and support, you can absolutely feel vibrant and thrive without a thyroid!!

Recovering From Surgery

The First Few Weeks

- Most people go home the same day or the next morning.
- Neck soreness, stiffness, and a sore throat (from the breathing tube) are normal and usually improve within 1-2 weeks.
- A hoarse, weak, or tired voice is common at first. It usually improves within a few weeks, but can take a few months.
- Most people return to desk work within 1-2 weeks. Avoid heavy lifting and strenuous exercise for about 2 weeks, or as your surgeon advises.
- Swallowing may feel tight or "lumpy" for a while as the tissues heal.

Calcium and the Parathyroid Glands

- The parathyroid glands are four tiny glands that sit behind the thyroid and control calcium levels. They can be bruised or stunned during surgery, even when the surgeon is very careful.
- This can cause a temporary drop in calcium (hypocalcemia). Signs include tingling or numbness around the mouth, fingertips, or toes, muscle cramps, or twitching.
- Many surgeons send patients home on calcium (and sometimes calcitriol, an active form of vitamin D) for a short time. Most people recover parathyroid function within weeks to months. A small percentage need calcium support long-term.

Scar Care

- Once the incision is fully closed and your surgeon gives the okay, silicone gel or silicone sheets can help the scar fade and flatten.
- Gentle scar massage can help soften it.
- Protect the scar from the sun for the first year with SPF or a scarf, since sun can darken it.

When to Call Your Doctor Right Away

- Tingling or numbness around the mouth or in the hands that doesn't improve with your prescribed calcium, or muscle cramps or spasms
- Neck swelling that is growing, or trouble breathing or swallowing (call 911, as this can be bleeding)
- Fever, redness, warmth, or drainage from the incision
- Sudden or worsening voice loss

LIFE AFTER TOTAL THYROIDECTOMY (TT)

Thyroid Hormone Replacement

Without a thyroid, your body can no longer make its own thyroid hormone, so replacement is lifelong. The goal is not just "normal" labs. The goal is feeling like yourself again.

Medication Options

- Levothyroxine (Synthroid, Levoxyl, Unithroid, generics): Synthetic T4, the most commonly prescribed option. The body converts T4 into active T3. Starting doses are usually based on weight (around 1.6 mcg per kg of body weight).
- Tirosint: Levothyroxine in a gel capsule or liquid with no dyes or fillers. Helpful for people with sensitivities, gut absorption issues, or who take PPIs for reflux.
- Liothyronine (Cytomel, generic T3): Sometimes added to levothyroxine for people who still have symptoms despite good T4 levels, especially those who don't convert T4 to T3 well.
- Natural Desiccated Thyroid (Armour, NP Thyroid): Made from pig thyroid and contains both T4 and T3. Some people feel better on it, though the T4 to T3 ratio differs from what a human thyroid makes.

How to Take Your Thyroid Medication

- Take it on an empty stomach with water, 30-60 minutes before breakfast or coffee, or at bedtime at least 3 hours after your last meal. Consistency matters most.
- Separate it by at least 4 hours from calcium, iron, magnesium, fiber supplements, and antacids, since these bind the medication and block absorption.
- Coffee, soy, and high-fiber meals can reduce absorption if taken too close together.
- Try to stick with the same brand or manufacturer. Switching between generics can change how much you absorb.
- Stop biotin 3-5 days before blood work, since it can throw off thyroid lab results,

Finding Your Right Dose

- Labs are usually checked 6-8 weeks after surgery and after every dose change, since that's how long it takes levels to settle.
- Finding the right dose can take a few adjustments, so be patient with yourself.
- Ask for a full thyroid panel, not just TSH: TSH, Free T4, Free T3, and Reverse T3 if symptoms persist.
- Your dose may need to change with weight changes, pregnancy, menopause, new medications, or gut health issues.

Signs Your Dose May Need Adjusting

Too Low (Hypothyroid)	Too High (Hyperthyroid)
Fatigue and low energy	Racing heart or palpitations
Weight gain	Anxiety or irritability
Feeling cold	Feeling hot or sweaty
Constipation	Loose stools
Dry skin and hair loss	Trouble sleeping
Brain fog and low mood	Tremors
Heavy periods	Unexplained weight loss

LIFE AFTER TOTAL THYROIDECTOMY (TT)

Thriving Long-Term

The Autoimmune Part Doesn't Disappear Overnight

- Removing the thyroid removes the target, but the immune system is still the same immune system. TSH receptor antibodies (TRAb and TSI) usually decline over months to a couple of years after surgery, but they don't vanish right away.
- TED can still flare after surgery, especially in the first year or two, so keep up with your eye doctor and watch for new eye symptoms.
- Not smoking (including vaping and secondhand smoke) is the single most important thing you can do to protect your eyes.
- This is why the root-cause work in this guide still matters after surgery. Supporting the gut, nutrients, stress, and inflammation helps calm the immune system that started it all.

Planning a Pregnancy After TT

- Thyroid hormone needs typically increase by 25-50% early in pregnancy. Many doctors recommend increasing your dose as soon as you get a positive pregnancy test, so talk with your doctor about a plan ahead of time.
- Even without a thyroid, TSH receptor antibodies can still cross the placenta and affect the baby's thyroid. Let your OB know you have a history of Graves, and ask to have TRAb levels checked during pregnancy.

Functional Support After Thyroidectomy

- Antibodies: In many, removing the thyroid, does not remove the autoimmune disease, its important to keep investigating your root causes to stop the autoimmune attack and elevation of antibodies. Some people expect thyroid removal to “cure” TED, but that is not always the case.
- T4 to T3 Conversion: Your body depends on converting T4 into active T3, and that conversion relies on selenium, zinc, iron, and a healthy liver and gut. Low levels of any of these can leave you feeling hypothyroid even on a "good" dose.
- Gut Health: Most thyroid medication is absorbed in the small intestine, and about 20% of T4 is converted in the gut. Low stomach acid, H. pylori, SIBO, and celiac disease can all affect absorption and how much medication you need. (See the Gut Health chapter 5)
- Bone Health: Years of hyperthyroidism can weaken bones. Keep up with calcium, vitamin D, K2, magnesium, and strength training, and ask your doctor whether a bone density (DEXA) scan makes sense.
- Blood Sugar and Weight: Metabolism often shifts after surgery. Prioritize protein, fiber, and strength training, and be patient with your body while your dose is being fine-tuned.
- Stress and Adrenals: Cortisol imbalances can affect conversion and how you feel. Stress management and adrenal support are just as important after surgery.
- Recheck Your Nutrient Labs: Ferritin, B12, vitamin D, zinc, selenium, and magnesium are worth testing periodically.

Chapter 8
EMOTIONAL ASPECTS
AND MENTAL HEALTH

Graves' doesn't just affect your body. It messes with your hormones, your mood, and how you feel about yourself. And because it's rare, it can be really hard to find answers. In this chapter, I'm sharing the tools that helped me through the hardest emotional days, plus ways to find support so you never have to do this alone.

Anxiety and depression are mental health conditions that can significantly impact a person's thoughts, emotions, and daily functioning. Imagine this: you're standing in the kitchen, staring at the fridge, not because you're hungry, but because your mind is buzzing with emotions you can't quite name. Everything feels overwhelming: work, relationships, your health. And even though nothing specific has happened today, it can feel like you're sinking under the weight of it all. Sound familiar?

We've all been there. Some days, emotions just hit harder, even when we can't pinpoint why. And when you're dealing with something like a chronic illness, stress at work, or major life changes, those feelings can get magnified. Suddenly, you might find yourself spiraling into thoughts of not being good enough, feeling disconnected, or questioning your worth. These emotional lows can open the door to anxiety, depression, or just feeling stuck in your head. Anxiety and depression aren't just buzzwords, they're very real struggles that can sneak in and disrupt how we think, feel, and move through our day-to-day lives. And it's more common than we think, especially when life throws big challenges our way, and disrupts our hormones.

ANXIETY

Anxiety involves feelings of excessive worry, fear, or apprehension that are persistent and often interfere with daily life. Common symptoms of anxiety may include:

- Excessive worrying
- Feeling restless or on edge
- Difficulty concentrating
- Irritability
- Muscle tension
- Difficulty sleeping

DEPRESSION

Depression is a mood disorder characterized by persistent feelings of sadness, hopelessness, or a loss of interest or pleasure in activities that were once enjoyable. Symptoms of depression can include:

- Persistent sadness or emptiness
- Loss of interest in activities
- Changes in appetite or weight
- Fatigue or loss of energy
- Feelings of worthlessness or guilt
- Difficulty concentrating or making decisions
- Thoughts of death or suicide

LINK BETWEEN ANXIETY, DEPRESSION, AND GRAVES:

The connection between anxiety, depression, and Graves' disease is pretty complex. Graves' disease is an autoimmune condition that causes the thyroid to go into overdrive, leading to a many physical but also mental symptoms. Anxiety and depression are common with Graves' because the extra thyroid hormones can mess with your brain and mood. Studies show that people with Graves' are more likely to experience these mental health issues compared to others.

Hormonal Imbalances/Physiological Impact: When thyroid hormones (especially free T3) spike and things like cortisol and insulin get thrown off, it can mess with your mood and brain function, leading to anxiety and depression. These hormones normally help keep your mood stable, so when they're out of whack, it's easier to feel off emotionally.

Impact on Body Image: Symptoms like weight loss, hair thinning, muscle loss, and changes in how your face and eyes look can really hit your self-esteem hard, making you feel worse emotionally.

Chronic Nature of the Condition: Dealing with a long-term condition like Graves' that needs constant care and attention can be really stressful and emotionally draining.

Impact on Daily Life: Canceled plans, missed work/events/travel, and strained relationships all add up emotionally.

Bi-directional Relationship: Anxiety and depression don't just come with Graves'; they can make the physical symptoms worse too, creating a vicious cycle where stress and negative emotions keep the condition going strong.

Treatment Considerations: It's super important to manage both the thyroid and mental health aspects of Graves'. Therapy, counseling, and maybe even medication can help you feel better overall.

Holistic Approach: Taking a whole-person approach to Graves' by addressing both physical and mental health is needed. Stress-reduction techniques, lifestyle changes, support from loved ones, and mental health care can make a big difference in how you manage anxiety and depression with Graves/TED.

BODY IMAGE ISSUES

Body image issues, where people feel unhappy with their looks or have a negative view of their body, can be a big deal for those with Graves' Disease and Thyroid Eye Disease. Although body image problems aren't caused by Graves directly, the symptoms of the condition can definitely make body image concerns worse. Changes like weight fluctuations, hair loss, and bulging eyes can really affect how someone feels about themselves. Feeling self-conscious can add to the stress of managing a chronic condition, so finding ways to build a positive self-image and seek support is essential.





Many of those with Graves can experience weight loss (due to hyperthyroidism) OR weight gain (due to medication or subsequent hypothyroid fluctuations), or find it challenging to lose weight due to hormonal imbalances and sometimes, insulin resistance or sluggish liver. Many people will experience hair loss. These all can lead to frustration, worry, self-consciousness, and a negative perception of one's body shape or size.

Also, some people with Graves may also develop TED, which can massively affect facial appearance due to physical changes in the appearance of the eyes. The eyes may appear to bulge out of the socket, one may have under-eye bags, drooping eyelids, uneven size or shape of each eye, asymmetrical eyes, swollen eyelids or puffy eye area, and redness. These changes may lead to self-consciousness, feelings of embarrassment, social anxiety, or lowered self-esteem. It can be debilitating, when you look in the mirror and do not recognize your face anymore. I know, because this happened to me.

TIPS TO REDUCE ANXIETY AND DEPRESSION (*PRESCRIPTIONS FOR YOUR SOUL*)

Reducing anxiety and depression involves learning strategies that support mental health and effectively manage symptoms. Here are some tips that may help alleviate anxiety and depression:

LIFESTYLE STRATEGIES:

- **Regular Exercise:** Engage in regular physical activity, as exercise has been shown to improve mood by releasing endorphins, reducing stress, and promoting better sleep.
  - Low-intensity workouts and strength training are ideal workouts, to avoid extra stress on your adrenals and therefore reduce cortisol imbalances and subsequent thyroid hormone and neurotransmitter fluctuations.
  - Try: walking, yoga, Pilates, lifting light weights or using your own body weight for home workouts.
- **Healthy Diet:** Maintain a balanced diet rich in fruits, vegetables, gluten-free whole grains, lean proteins, and healthy fats. Avoid excessive caffeine and sugar intake, as they can worsen anxiety.
- **Adequate Sleep:** Prioritize good sleep hygiene by establishing a regular sleep schedule and creating a relaxing bedtime routine to improve sleep quality.
  - Avoid screens or blue light one hour prior to bed, and one hour upon waking.
- **Stress Reduction Techniques:** Practice stress management techniques such as mindfulness, deep breathing exercises, meditation, or yoga to reduce stress levels and promote relaxation.
  - Try: guided meditations, walking meditations, mindfulness meditations, journaling, gratitude practices, use of essential oils, relaxing baths, self-massage.

SOCIAL SUPPORT AND RELATIONSHIPS:

- **Connect with Others:** Maintain social connections and seek support from friends, family, or support groups. Sharing feelings and experiences with others can provide comfort, learning, and perspective.
  - Join support groups
  - Try group coaching
  - Read & engage with others in forums
  - Attend an online or in-person workshop
  - Try a yoga or work-out class
- **Healthy Boundaries:** Establish boundaries to maintain a healthy balance between social interactions and personal time, avoiding unnecessary stress.
  - It's OK to rest, its OK to say NO!
  - Keep people who feel like sunshine close, and distance from people who don't try to understand you or support what you're going through.

PSYCHOLOGICAL AND BEHAVIORAL STRATEGIES:

- **Therapy and Counseling:** Consider therapy or counseling sessions with a mental health professional, such as a psychologist or counselor, to address underlying issues and learn coping strategies. Group coaching can be helpful too, to meet others going through the same thing as you.
- **Cognitive-Behavioral Techniques:** Practice cognitive-behavioral techniques to challenge negative thoughts and replace them with more positive and realistic ones.
    - See next page for a journaling exercise on reframing negative thought patterns & beliefs impacting thyroid health!
- **Mindfulness and Relaxation:** Practice mindfulness-based techniques or relaxation exercises to stay present and manage anxious thoughts.
    - Try mindfulness exercises such as the *5-4-3-2-1 method, box breathing, mindful walking, guided mindfulness meditation, loving-kindness meditation.*
- **Journaling:** Writing down your thoughts is a great way to release what's heavy on your heart and let it go. It is a great creative outlet. You can also doodle or color.
- **Get Creative:** Art or dance is a wonderful way to express yourself, even if you draw worse than 5 year old. Embrace your inner child and try an adult coloring book, or seek out an ecstatic dance workshop.
- **Reframing Negative Thoughts:** shifting your perspective to view challenges in a more positive or manageable light.
- **Affirmations:** a powerful tool to reaffirm a sense of calm, empowerment, supporting emotional resilience in the face of the challenges that come. Every cell in your body is listening to your thoughts, so make them kind.

SELF-CARE AND EMOTIONAL WELL-BEING:

- **Self-Compassion:** Be kind to yourself and practice self-compassion. Avoid self-criticism and practice self-care activities that bring joy and relaxation.
- **Hobbies and Activities:** Make time for activities you enjoy, such as creative pursuits or hobbies that light you up, and help you relax and unwind.
- **Set Realistic Goals:** Break tasks into manageable steps and set achievable goals to reduce feelings of overwhelm.



Free Support Groups

Your friends and family love you, but they may not understand what it's like to wake up with swollen eyes, a face you dont recognize, double vision, ride the ups and downs of thyroid levels, or sit in a doctor's office feeling unheard or dismissed by a doctor that doesn't truly understand you. Connecting with people who have been in your shoes, that truly get it can be one of the most healing parts of this journey.

Thyroid Love Club is my free monthly support group for anyone navigating autoimmune thyroid conditions, including Graves' disease, Thyroid Eye Disease, and Hashimoto's. When I was diagnosed I felt super isolated, I would hide for days and cry in bed, searching online endlessly looking for other peoples Graves or TED stories... This led to me create my own little community. I wanted a place where people could meet others, ask real questions, share what's working, and feel seen, without judgment and without being rushed out of a 10-minute appointment. So I built it.

What to Expect

- A warm, welcoming space with others who understand what you're going through
- Sharing your story only if you want to, listening to others stories. Camera on or off, you choose.
- Time for open questions and sharing your experience, only as much as you feel comfortable
- Encouragement, hope, and real stories from people at every stage of healing

NOT ALLOWED: judgement, closed-mindedness, no self-promotion or promotion of products/services, recording. Please be mindful of time, keep shares to 3–5 minutes so everyone has space to speak and feel heard.

Who It's For

Thyroid Love Club is open to anyone with Graves' disease, Thyroid Eye Disease, Hashimoto's, or another thyroid condition, whether you were just diagnosed or have been living with it for years. Loved ones and caregivers are welcome too. People join from all over the world!

How to Join

Thyroid Love Club is completely free and meets online once a month, so you can join from anywhere.

1. **Join at: meet.thyroidloveclub.com**
2. Meeting schedule: Every third Sunday at 12PM EST Eastern Time (New York). Dates are subject to change, please sign up for the mailing list for updates!
3. Follow along on Instagram at @thyroidloveclub for meeting reminders, topics, and the join link in bio
4. Questions or suggested topics? Email me at hello@thyroidloveclub.com

You can come every month or drop in whenever you need support. You're welcome to keep your camera off and just listen. There's no pressure, just love.

Additional Support: TED Community Organization

If you're looking for even more connection, especially around Thyroid Eye Disease, the TED Community Organization is another wonderful resource. It is a patient-founded 501(c)(3) nonprofit dedicated to people living with TED and Graves' disease. They offer free online support groups, one-on-one peer support through TED Connect, educational webinars, patient stories, and a clinical trials library. You can visit them at tedcommunity.org or email hello@tedcommunity.org.

Mental Health Resources

I want you to know this: struggling with anxiety, depression, or how you see yourself in the mirror doesn't mean you're weak. Thyroid hormones directly affect your brain chemistry, so some of what you're feeling may be your hormones talking. Reaching out for help is one of the strongest things you can do. Here's where to start.

If You're in Crisis Right Now

- 988 Suicide & Crisis Lifeline: Call or text 988, any time, day or night.
- Crisis Text Line: Text HOME to 741741.
- Emergency: Call 911 or go to your nearest emergency room.
- Outside the US: Find a helpline in your country at findahelpline.com.

Someone to Talk To

- NAMI HelpLine: Call 1-800-950-6264 or text "helpline" to 62640 for free support, information, and referrals (weekdays).
- SAMHSA National Helpline: 1-800-662-4357, free, confidential treatment referrals 24/7.
- Pregnant or postpartum? Call or text the National Maternal Mental Health Hotline at 1-833-852-6262 (1-833-TLC-MAMA), or reach Postpartum Support International at 1-800-944-4773. Thyroid shifts after pregnancy can hit hard, so please don't wait.

Finding a Therapist

- Psychology Today Therapist Finder (psychologytoday.com): Filter by location, insurance, and specialty. Look for someone experienced with chronic illness, health anxiety, or body image.
- Open Path Collective (openpathcollective.org): Low-cost therapy if cost is a barrier.
- Online Therapy: BetterHelp and Talkspace let you meet from home, which helps on low-energy days.
- Your insurance: Call the number on the back of your card and ask for in-network mental health providers.

Nervous System Healing

- Primal Trust Academy: A nervous system regulation program with daily practices to help your body shift out of fight-or-flight and into a state of safety, which is so important when you're healing from chronic illness. Join here: Primal Trust Academy

Free Tools for Everyday Calm

- Insight Timer: Thousands of free guided meditations.
- UCLA Mindful: A free app with short guided meditations from UCLA.
- YouTube: Free yoga, breathwork, and guided meditations.
- Thyroid Love Club: My free monthly support group (see the previous page).
- TED Connect (tedcommunity.org): Free one-on-one peer support from someone who has lived with TED.

A Note From Your Pharmacist: If your anxiety, depression, or sleep suddenly gets worse, ask your doctor to check your thyroid levels. Mood changes can be one of the first signs that your levels are shifting, in either direction.

Affirmations

Repeat these to yourself either out loud or in your head, or write them down.

- **I am strong and capable of managing my health.**
- **My body is healing, and I trust the process.**
- **I am worthy of feeling healthy and vibrant.**
- **I listen to my body and give it the care it needs.**
- **I am more than my diagnosis.**
- **I will be in remission from Graves Disease, and/or Thyroid Eye Disease.**
- **I am in control of my health journey.**
- **My mind, body, and spirit are working together for my healing.**
- **I choose to focus on progress, not perfection.**
- **I release what no longer serves me, including stress and worry.**
- **My energy levels improve with each passing day.**
- **I am surrounded by love and support in my healing journey.**
- **I am patient with myself and celebrate small victories.**
- **I trust that my body knows how to heal.**
- **I am resilient, and I overcome challenges with grace.**
- **Every day is a new opportunity to support my body and health.**
- **I choose nourishing foods and practices that help my body thrive.**
- **I deserve to feel balanced, healthy, and happy.**
- **I embrace self-compassion and kindness toward myself.**
- **My thyroid is healing, and I am regaining my strength.**
- **I honor my body by giving it the rest and care it needs.**
- **My thyroid is finding its balance, and I trust in its healing.**
- **I nourish my thyroid with love, care, and patience.**
- **My thyroid is working in harmony with the rest of my body.**
- **I support my thyroid through healthy choices and positive thoughts.**
- **My thyroid is resilient, and I am capable of thriving.**
- **I embrace the healing of my thyroid, one day at a time.**
- **My thyroid is healing, and I feel stronger each day.**
- **I release all stress and tension, allowing my thyroid to function optimally.**
- **My body and thyroid are returning to their natural state of balance.**
- **I am grateful for my thyroid's healing journey and the strength I gain from it.**
- **I am beautiful inside and out, regardless of any challenges I face.**
- **My strength shines through in every part of my being.**
- **I radiate confidence, beauty, and grace no matter what.**
- **My beauty is not defined by my illness but by my spirit.**
- **I am strong, resilient, and worthy of love and self-respect.**
- **I embrace my unique journey and the beauty it brings to my life.**
- **My inner strength makes me powerful, and that power reflects in my appearance.**
- **I am proud of who I am, and I celebrate my body and my health.**
- **I choose to see my beauty beyond any physical changes.**
- **My courage and resilience make me beautiful and strong every single day.**

Affirmations

Take a moment to write down some affirmations that speak to you today.

Journaling Exercise

Reflecting on + Reframing Negative Thought Patterns and Beliefs Impacting Thyroid Health

- Negative Thought Pattern 1: *"My thyroid disease makes me feel weak and powerless. It's hard to imagine ever feeling healthy and vibrant again."*

Reframed Positive Affirmation: **"I acknowledge the challenges posed by my thyroid disease, but I choose to focus on my inner strength and resilience. Each day, I take steps towards healing and reclaiming my vitality."**

- Negative Thought Pattern 2: *"I'm constantly worried about the impact of my thyroid disease on my daily life. It's difficult to find peace and stability amidst the uncertainty."*

Reframed Positive Affirmation: **"I trust in my body's ability to heal and restore balance. Despite the challenges, I cultivate a sense of calm and resilience, knowing that I am capable of navigating any obstacles with grace and determination."**

- Negative Thought Pattern 3: *"My thyroid disease makes me feel isolated and misunderstood. It's hard to find support from others who don't understand what I'm going through."*

Reframed Positive Affirmation: **"I embrace my journey with thyroid disease as part of my unique story. I seek out understanding and supportive communities where I feel seen and valued. I am deserving of compassion and empathy, regardless of my health challenges."**

- Negative Thought Pattern 4: *"I'm frustrated by the limitations imposed by my thyroid disease. It feels like I'll never be able to live life to the fullest again."*

Reframed Positive Affirmation: **"I acknowledge the challenges posed by my thyroid disease, but I refuse to let it define me. I focus on what I can control and find joy and fulfillment in the present moment. With patience and perseverance, I continue to pursue my dreams and aspirations."**

- Negative Thought Pattern 5: *"I feel overwhelmed by the constant management and monitoring required for my thyroid disease. It's exhausting to always be thinking about my health."*

Reframed Positive Affirmation: **"I approach the management of my thyroid disease with diligence and self-compassion. I prioritize my well-being while also honoring my need for rest and relaxation. Each step I take towards managing my health brings me closer to a life of balance and vitality."**

Take this time to explore and reframe your own negative thought patterns and beliefs related to thyroid disease. Through journaling and positive affirmations, you can cultivate resilience, acceptance, and empowerment on your healing journey.

Journaling Exercise

Reframing Negative Thought Patterns and Beliefs Impacting Thyroid Health

Negative Thought Pattern:

Reframed Positive Affirmation:

Negative Thought Pattern:

Reframed Positive Affirmation:

Daily Affirmations:

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Daily Gratitude List

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Chapter 9
HERBAL & COMPLEMENTARY THERAPIES

Herbs were a huge part of my healing, and as an herbal pharmacist, I love them. I also respect them, because natural doesn't always mean safe. This chapter covers the herbs I reach for most, plus the complementary therapies that helped calm my nervous system.

HERBAL SUPPLEMENTS

Herbal medicine is all about using plants and their natural healing properties to help the body find balance and stay healthy. It's been around for ages, with different herbs supporting everything from immune health to stress relief. Its a great adjunct to provide relief for those struggling with symptoms of Graves disease. While herbal supplements are considered natural, they may interact with medications or have side effects. It's important to consult with a healthcare provider such as a holistic pharmacist before using herbal remedies, especially if pregnant or taking other medications. We will go into greater detail about these herbs in the following pages.

- **Bugleweed (Lycopus europaeus):** "antithyroid herb" can lower thyroid hormone levels
- **Lemon balm (Melissa officinalis):** helps with anxiety, sleep, and may mildly lower thyroid hormone levels
- **Motherwort (Leonurus cardiaca):** calms the heart, lowering HR and palpitations
- **Berberine (Berberis spp.):** antimicrobial, supports gut microbiome, blood sugar balance, reduces inflammation (see gut health chapter 5)
- **Rehmannia (Rehmannia glutinosa):** anti-inflammatory
- **Rhodiola (Rhodiola rosea):** improves energy, fatigue, mood, adrenal support
- **Eleuthero / Siberian ginseng (Eleutherococcus senticosus):** improves energy, fatigue, mood, immune support, adrenal adaptogen
- **Turmeric (Curcuma longa):** immune support, anti-inflammatory, anti-oxidant
- **Ginger (Zingiber officinale):** digestive health, anti-inflammatory, anti-oxidant
- **Heal-All Herb (Prunella vulgaris):** thyroid balancing herb (for both Hashimoto and Graves), anti-inflammatory, anti-oxidant
- **Resveratrol:** anti-inflammatory, anti-oxidant, "anti-aging"
- Adrenal supportive herbs: Rhodiola, Eleuthero, Ashwagandha, Licorice root, Holy basil, Schisandra
- Liver supportive herbs: Milk thistle, Dandelion root, Turmeric, Artichoke, Schisandra, Licorice root, Yellow dock

"ANTI-THYROID" HERBAL FORMULATIONS

Even though herbal supplements are considered natural, that doesn't always mean that they are safe or ideal for every person to use. Its possible that they may interact with medications or have side effects. It's important to consult with a healthcare provider (such as a functional health practitioner, doctor, well-informed pharmacist) before using herbal remedies, especially during pregnancy or if taking other medications, to see which one is the right one for YOU, and the proper dose. Choosing an inappropriate herb could slow down your healing process or set you back. The most commonly used herbs for Graves are:

- **Bugleweed** (Lycopus europaeus)
  - **Mechanism of Action:** Bugleweed is known as an "*anti-thyroid*" herb, and likely the strongest one. It works by inhibiting the release of thyroid-stimulating hormone (TSH) and thyroid hormones, particularly thyroxine (T4), from the thyroid gland. This herb reduces the conversion of T4 to the more active triiodothyronine (T3). Many have been able to reduce their use of medication by supplementing with this herb.
  - **Dosing:** 1-2 grams of dried herb per day, or 1-2 mL of tincture three times daily.
  - **Dietary Sources:** Bugleweed is not typically found in foods and is usually taken as a supplement.

- **Lemon Balm** (Melissa officinalis)
  - **Mechanism of Action:** Lemon balm has calming effects on the nervous system and may mildly lower thyroid hormone levels ("*anti-thyroid*") by inhibiting TSH receptors, reducing TSH levels, and thus decreasing thyroid hormone production. It also possesses anti-anxiety and sedative properties, so it helpful for anxiety, stress, overthinking, and sleep or insomnia as well. I've suffered from all of these symptoms and found it helpful in my personal journey, especially at bedtime for a good nights rest.
  - **Dosing:** 300-500 mg of lemon balm extract or 2-3 cups of tea per day.
  - **Dietary Sources:** Typically consumed as a tea or in supplement form.

- **Motherwort** (Leonurus cardiaca)
  - **Mechanism of Action:** Motherwort has cardiotonic properties, meaning it helps calm the heart, reducing heart rate and palpitations. It is like a "natural beta blocker." It contains alkaloids and glycosides that help manage symptoms associated with hyperthyroidism. It is a great option to add on for those experiencing heart symptoms. It also has a mild "*anti-thyroid*" effect.
  - **Dosing:** 1-2 grams of dried herb or 2-4 mL of tincture three times daily.
  - **Dietary Sources:** Generally taken as a tincture or tea.

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ANTI-INFLAMMATORY HERBS

- **Turmeric** (Curcuma longa)
  - **Mechanism of Action:** Turmeric, specifically its active compound curcumin, is a powerful anti-inflammatory and antioxidant herb, reducing oxidative stress, free radical damage, and inflammation. It supports immune health and helps reduce inflammation associated with autoimmune conditions like Graves' disease and TED.
  - **Dosing:** 500-2000 mg of curcumin extract per day.
  - **Dietary Sources:** Whole turmeric root, loose dried herb powder, golden tea, tincture, and oral supplements.

- **Berberine** (Berberis spp.)
  - **Mechanism of Action:** Berberine has antimicrobial properties and supports gut microbiome health, which is essential for overall immune function. It also helps with blood sugar balance and reduces systemic inflammation, which can help manage symptoms of Graves' disease and TED.
  - **Dosing:** 500 mg two to three times per day.
  - **Dietary Sources:** Found in certain plants like goldenseal, Oregon grape, and barberry.

- **Ginger** (Zingiber officinale)
  - **Mechanism of Action:** Ginger has anti-inflammatory and antioxidant properties, supporting digestive health and reducing systemic inflammation. It can help manage symptoms associated with autoimmune conditions .
  - **Dosing:** Typically 1-2 grams of dried ginger or 2-4 mL of tincture per day.
  - **Dietary Sources:** Consumed fresh, dried, or as a tea.

- **Heal-All Herb** (Prunella vulgaris)
  - **Mechanism of Action:** Heal-All herb has thyroid-balancing properties, making it useful for both hyperthyroidism and hypothyroidism.It also helps calm inflammation..
  - **Dosing:** 1-2 grams of dried herb or 2-4 mL of tincture three times daily.
  - **Dietary Sources:** Usually taken as a supplement or tea.

- **Resveratrol**
  - **Mechanism of Action:** Resveratrol is an antioxidant that helps reduce oxidative stress and inflammation. It supports immune function and may help modulate autoimmune responses .
  - **Dosing:** 100-500 mg per day.
  - **Dietary Sources:** Found in red grapes, red wine, and certain berries.

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ADRENAL SUPPORTIVE HERBS

Adrenal adaptogenic herbs are botanicals that help your body handle stress better, whether it's physical, mental, or emotional These herbs support adrenal gland function, which is important for managing stress and balancing hormone levels. When our adrenals are imbalanced, it causes other hormones such as cortisol, estrogen, progesterone, testosterone, and thyroid hormones to be imbalanced. I highly recommend to choose these herbs carefully under supervision of a functional health provider to avoid further damage to the adrenal glands! Though they are "adaptogens," most of these herbs lower cortisol which can cause alot of damage to someone who is already in a low cortisol state or experiencing adrenal fatigue.

- **Rhodiola** (Rhodiola rosea)
  - **Mechanism of Action:** Rhodiola acts as an adaptogen, helping to improve energy, reduce fatigue, and enhance mood. It supports adrenal function, which can be beneficial for managing stress and related thyroid imbalances.
  - **Dosing**: Commonly taken in doses of 200-600 mg per day.

- **Eleuthero / Siberian Ginseng** (Eleutherococcus senticosus)
  - **Mechanism of Action:** Eleuthero is another adaptogen that supports energy levels, reduces fatigue, and enhances immune function. It helps modulate the body's stress response.
  - **Dosing**: Standard doses range from 300-1200 mg per day.

- **Ashwagandha** (Withania somnifera)
  - **Mechanism of Action**: Ashwagandha is an adaptogen that helps the body cope with stress. It supports adrenal function and modulates the immune system, potentially reducing the autoimmune activity associated with Graves' disease. Typically ***lowers*** cortisol. Caution if adrenal fatigue is suspected.
  - **Dosing**: Typically 300-600 mg of extract per day.
  - **WARNING**: Avoid in active hyperthyroidism, it can increase thyroid hormone levels. Only consider once thyroid levels are stable, ONLY under medical supervision.

- **Licorice Root** (Glycyrrhiza glabra)
  - **Mechanism of Action:** Licorice root helps maintain healthy cortisol levels by potentially ***increasing*** low cortisol levels, and supports adrenal function. It has anti-inflammatory properties and may help manage stress-related thyroid imbalances.
  - **Dosing**: Standard doses include 1-2 grams of dried root or 2-4 mL of tincture per day.

- **Holy Basil** (Ocimum sanctum)
  - **Mechanism of Action**: Holy Basil helps lower cortisol levels and reduce the physical and mental effects of stress, potentially decreasing the frequency and severity of autoimmune flare-ups.
  - **Dosing**: Typically 500-1000 mg of extract per day.

- **Schisandra** (Schisandra chinensis)
  - **Mechanism of Action:** Schisandra enhances mental clarity, reduces fatigue, and supports the adrenal glands by balancing cortisol levels and improving overall stress resilience.
  - **Dosing**: Common doses range from 500-1000 mg per day.

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LIVER SUPPORTIVE HERBS.

Supporting liver function is important in managing Graves' disease and Thyroid Eye Disease (TED) because the liver plays a massive role in hormone metabolism and detoxification. Liver supportive herbs can help optimize liver function, reduce inflammation, enhance detoxification processes, and balance hormones.

- **Milk Thistle** (Silybum marianum): 200-400 mg of silymarin extract per day.
  - **Mechanism of Action**: Milk thistle contains silymarin, a potent antioxidant that protects liver cells from damage, enhances liver regeneration, and supports detoxification by increasing glutathione levels. By improving liver function and reducing oxidative stress, it can help manage the hormonal imbalances and inflammation associated with Graves' disease and TED.

- **Dandelion Root** (Taraxacum officinale): 500-2000 mg of dried root per day.
  - **Mechanism of Action**: Dandelion root acts as a diuretic and liver tonic, stimulating bile production and supporting liver detoxification pathways. Enhances liver function and aids in the elimination of toxins, which can help reduce the autoimmune response and inflammation associated with Graves' disease and TED.

- **Turmeric** (Curcuma longa)
  - **Mechanism of Action**: Turmeric contains curcumin, which has powerful anti-inflammatory and antioxidant properties that protect liver cells and enhance liver detoxification enzymes. Reduces inflammation and oxidative stress.
  - Dosage: 500-2000 mg of turmeric extract standardized to 95% curcuminoids per day.

- **Artichoke** (Cynara scolymus): 500-1000 mg daily
  - **Mechanism of Action**: Artichoke extract supports liver health by promoting bile production and improving digestion, with additional antioxidant properties.

- **Schisandra** (Schisandra chinensis): 500-1500 mg daily
  - **Mechanism of Action**: Schisandra berries contain lignans that support liver detoxification enzymes and protect against liver damage. Enhances liver function and detoxification, reducing the burden of toxins that may exacerbate autoimmune reactions in Graves' disease and TED.

- **Licorice Root** (Glycyrrhiza glabra)
  - **Mechanism of Action**: Licorice root contains glycyrrhizin, which has anti-inflammatory and immune-modulating effects and supports liver health by reducing liver enzyme levels and promoting regeneration.
  - Dosing: 200-600 mg of standardized extract per day (note: long-term use should be monitored due to potential side effects like high blood pressure)

- **Yellow Dock** (Rumex crispus): 1-2 grams of dried root per day.
  - **Mechanism of Action**: Yellow dock supports liver function by promoting bile flow and acting as a mild laxative, helping to clear toxins from the body.

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DETOX HERBS

Clearing out toxins can calm inflammation and take a load off your immune system. However, herbs and supplements like spirulina, chlorella, cilantro, and activated charcoal can pose risks if not used correctly, especially when managing thyroid imbalances. Before taking any of these, you must make sure that your drainage pathways are open (daily poops!). I really recommend to ONLY use them under the supervision of a functional health provider to avoid complications.

Spirulina

Mechanism of Action: Spirulina is a nutrient-dense algae that helps with detoxification by providing antioxidants, chlorophyll, and essential minerals.
Warning: It may contain heavy metals, which can worsen toxicity if not sourced properly. Spirulina can also stimulate the immune system, potentially exacerbating autoimmune activity in Graves' disease and interacting with thyroid medications, causing fluctuations in thyroid hormone levels. May contain iodine.
Dosing: 1-3 grams per day, but consult a healthcare provider before use.

Chlorella

Mechanism of Action: Chlorella helps bind heavy metals and toxins for elimination.
Warning: It can cause detox symptoms like headaches or nausea if toxins are released too quickly. This can be particularly overwhelming for those with thyroid imbalances, as it puts extra strain on the liver and kidneys. Chlorella may also interfere with the absorption of thyroid medications.
Dosing: 3-5 grams per day, but use under the guidance of a healthcare provider.

Cilantro (Coriandrum sativum)

Mechanism of Action: Cilantro supports the body in excreting heavy metals by binding to them.
Warning: Cilantro can trigger detox reactions, worsening symptoms like fatigue or skin flare-ups. It may also interfere with thyroid medication absorption, so caution is needed when using it alongside thyroid treatments.
Dosing: 1-2 teaspoons of fresh cilantro daily or 1-2 mL of tincture per day, but always consult a provider.

Activated Charcoal

Mechanism of Action: Activated charcoal binds to toxins and prevents their absorption in the gastrointestinal tract.
Warning: It can bind to medications, including thyroid meds, reducing their effectiveness. This can lead to fluctuations in thyroid function. It may also cause digestive issues like constipation, which can aggravate existing symptoms.
Dosing: 500-1000 mg per day, taken at least 2 hours apart from other medications and supplements.

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COMPLEMENTARY THERAPIES

Dietary Changes: Modifying diet by reducing dietary triggers like gluten, dairy, soy, eggs and/or inflammatory foods, adopting a low-glycemic index (GI) diet and reducing refined sugars to support blood sugar balance, and incorporating whole foods, fruits, vegetables, and healthy fats may help manage inflammation and hormonal balance.

Stress Reduction: Stress management techniques such as yoga, meditation, deep breathing exercises, and mindfulness may help reduce stress levels, potentially improving hormonal imbalances.

Regular Exercise: Engaging in regular physical activity can aid in weight management, boost happy hormones, improve insulin sensitivity and reduce cortisol levels, and contribute to thyroid hormonal balance.

MIND-BODY THERAPIES:

Mindfulness-Based Stress Reduction (MBSR): Programs focusing on mindfulness and stress reduction techniques have shown promise in managing stress, improving emotional well-being, and potentially influencing hormonal balance.

Cognitive-Behavioral Therapy (CBT): Therapy approaches like CBT may help individuals manage anxiety, depression, and cope with the emotional aspects of Graves.

Reiki: A form of energy healing that involves the transfer of universal life force energy through the practitioner's hands to the recipient, which may help promote relaxation, reduce stress, and shift energy to where it is needed most in the body.

Meditation: A practice that involves focusing attention and awareness to achieve mental clarity, emotional calmness, and physiological relaxation, which can alleviate stress, promote hormonal balance, and support immune function.

BODYWORK & HANDS-ON THERAPIES

Acupuncture: traditional Chinese medicine practice involves inserting thin needles at specific body points to stimulate energy flow, potentially supporting thyroid function, reducing inflammation, and regulating the immune system. It may also help alleviate symptoms like anxiety, insomnia, and palpitations, offering a complementary treatment to conventional care.

Lymphatic massage: helps stimulate the lymphatic system, promoting the drainage of toxins and reducing swelling or fluid retention, which can be beneficial for Graves and TED. This gentle, targeted massage can also help alleviate puffiness and support immune function.

Aromatherapy / Essential oils:
Essential oils like lavender, frankincense, lemongrass, sandalwood, chamomile, and myrrh can be diffused or used in diluted form for self-massage to help reduce stress, promote relaxation, and soothe inflammation. Always dilute with a carrier oil and patch test first. Keep oils away from the eyes, which is especially important with TED.

Chapter 10
SUPPLEMENTS
VITAMINS & MINERALS

Vitamins are my FORTE! There are many vitamins and minerals that can be extremely helpful in supporting Graves and TED. While supplements can be considered natural, they may interact with medications or have side effects. It's important to consult with a healthcare provider before using them, especially during pregnancy or if taking other medications.

NUTRACEUTICALS (VITAMINS & MINERALS)

Nutraceuticals are bioactive compounds found in food or formulated as supplements, offering health benefits beyond basic nutrition. Nutraceuticals can include vitamins, minerals, herbs, amino acids, and other substances. Certain supplements such as selenium, vitamin D, zinc, and many more, have shown massive potential in managing hormonal imbalances, metabolic regulation, and improving thyroid function.

It's important to note that these are great additions to your regimen, but I wouldn't rely on them completely without addressing root causes first. Simply stacking vitamins on to your list will not work as well without addressing what's underlying first. For example, if you have an underlying infection or leaky gut, those supplements won't even absorb properly and will have a diminished effect, if any at all. I don't recommend taking all of these vitamins at the same time! Its important to work with a practitioner to help you figure out what you're deficient in and which ones would benefit you the most.

Quality matters so much. Many supplements are full of fillers, or don't even contain what the label says. I only recommend third-party tested brands that are free of heavy metals, pesticides, and common allergens, especially when you're dealing with a sensitive autoimmune condition.

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NUTRACEUTICALS (VITAMINS & MINERALS)

Selenium

The number one thing I wish my doctor told me about when I started this journey with Graves and Thyroid Eye Disease was the importance of selenium when it comes to your thyroid health. Within two weeks of taking selenium I saw an improvement in my TED eyes, I was shocked! In two months my eyes were looking much more symmetrical.

- **Mechanism of Action:** Your thyroid holds more selenium than any other organ in your body, and it needs it to make and regulate thyroid hormone. It is a cofactor for enzymes involved in the conversion of thyroxine (T4) to triiodothyronine (T3) and helps protect the thyroid gland from oxidative damage.
  - As a key part of antioxidant enzymes like glutathione peroxidase, it also protects the liver from oxidative stress and supports liver detox.

- **Dosing:**
  - Recommended daily intake for adults is around 55-70 micrograms (mcg) per day. Typical thyroid-supportive doses range from **100 to 200 mcg per day.**
    - *Do not exceed 400 mcg per day from all sources.*
    - In a landmark clinical trial, selenium (100 mcg twice daily for 6 months) improved quality of life and eye involvement and slowed TED progression in people with mild Graves' orbitopathy (Marcocci et al., New England Journal of Medicine, 2011).
  - Pairing with Myo-Inositol: Myo-inositol helps the thyroid respond to TSH signaling and works together with selenium to calm thyroid autoimmunity. In clinical studies, **myo-inositol 600 mg plus selenium 83 mcg daily** lowered thyroid antibodies and TSH more than selenium alone (Nordio & Pajalich, Journal of Thyroid Research, 2013; Nordio & Basciani, European Review for Medical and Pharmacological Sciences, 2017). These studies were done in Hashimoto's, but the antibody-calming effect makes the combination a promising add-on for autoimmune thyroid conditions in general.
  - Selenomethionine is the best supplement form because it's well absorbed and gives a consistent dose. Brazil nuts are a great natural source, but the amount varies from nut to nut, and they can contain mold and are naturally high in oxalates.
    - Personally I took supplements for the first few months so I could know that I was getting an accurate dose, and for maintenance I continued by eating 1-3 organic brazil nuts per day.

- **Dietary Sources**: Selenium-rich foods include Brazil nuts, seafood (such as tuna, sardines, and shrimp), organ meats (such as liver and kidney), eggs, and whole grains.
  - On average, just one Brazil nut contains about 68-91 micrograms (mcg) of selenium. The amount in each nut varies depending on the size and selenium content of the soil where the nuts are grown. So you only need 1-3 nuts per day to get 100-200mcg.



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Vitamin D:

- Most people are deficient in vitamin D and they don't even know it! Many have levels in range, but not the *ideal* range (between 50-70) to thrive. Getting 30 minutes of early morning sun is a great way to acquire it naturally, without wearing SPF (this blocks it) and catching it on a large area of the body such as arms, legs, or stomach.
- **Mechanism of Action:** Vitamin D acts more like a hormone than a vitamin, and it helps keep the immune system from overreacting. It also supports thyroid function by regulating gene expression and cellular signaling pathways.
- **Dosing:** Recommended daily intake for adults is around 600-800 International Units (IU) per day. However, supplementation may be necessary if levels are deficient, with doses typically ranging from **1000 to 5000 IU per day**.
  - A review published in the International Journal of Molecular Sciences suggested that vitamin D supplementation (1000-2000 IU/day) may improve thyroid function and reduce the risk of autoimmune thyroid diseases.
  - It is best to supplement with ***100-200mcg of vitamin K2***, which helps guide the vitamin D to the proper areas in the body to be utilized, so it doesn't calcify the arteries, which could cause build up in the arteries and plaque. It is safer for your bones and heart.
- **Dietary Sources:** fatty fish, fortified foods, egg yolks, and sunlight exposure.

Magnesium:

- Magnesium is ESSENTIAL for all bodily processes. It also works synergistically with vitamin D for optimal absorption. You can check the serum (optimal: 2.0-2.5 mg/dL) or RBC (Red Blood Cell Magnesium blood test, optimal levels: 6.0-6.5 mg/dL) for a more accurate reading of your levels.
- **Mechanism of Action:** Magnesium is involved in numerous biochemical reactions in the body and plays a role in muscle function, nerve function, and energy metabolism. It may also help regulate thyroid hormone levels and support immune function.
- **Dosing:** Recommended daily intake for adults is around 310-420 mg per day. Supplementation doses may vary, but typical doses range from **250 to 500 mg per day**.
- **Dietary Sources:** Dietary sources of magnesium include nuts (such as almonds and cashews), seeds (such as pumpkin seeds and sunflower seeds), whole grains, leafy green vegetables (such as spinach and kale), and legumes.

L-Carnitine:

- **Mechanism of Action:** L-carnitine plays a role in cellular energy metabolism and may help improve thyroid hormone function and reduce symptoms of hyperthyroidism, by blocking the effect of excess active hormone on entering the cells of the body. It may also have antioxidant properties that protect against thyroid damage.
- **Dosing: 500 to 2000 mg per day**.
  - A meta-analysis published in Thyroid Research suggested that L-carnitine supplementation (up to 2000 mg/day) may improve symptoms of hyperthyroidism and reduce thyroid hormone levels.
- **Dietary Sources:** red meat, fish, poultry, dairy products, and certain plant foods (not a suitable option for vegan lifestyle).

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Omega-3 fatty acids:

- **Mechanism of Action:** Omega-3 fatty acids have anti-inflammatory properties and may help reduce inflammation associated with autoimmune conditions like Graves' disease. They also support cardiovascular health and may help regulate immune function. It is important to consider the integrity of the product. Look for omega-3 supplements sourced from reputable manufacturers that use high-quality fish oil or algae-derived oil. Ensure the product undergoes rigorous testing for purity and is free from contaminants such as heavy metals and toxins. Check the levels of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) in the supplement. These are the active forms of omega-3 fatty acids responsible for the health benefits. Higher concentrations of EPA and DHA are generally preferred.
- **Dosing:** Recommended doses vary, but typical doses range from **1000 to 4000 mg** of combined EPA and DHA per day.
- **Dietary Sources:** Dietary sources of omega-3 fatty acids include fatty fish (such as salmon, mackerel, and sardines), flaxseeds, chia seeds, walnuts, and certain vegetable oils (such as flaxseed oil and canola oil).

N-acetylcysteine (NAC):

- **Mechanism of Action:** NAC is a precursor to glutathione, a powerful antioxidant that helps protect cells from damage. It may also help reduce inflammation and oxidative stress associated with Graves' disease. Also helpful for liver support, and breaking biofilms to support the gut microbiota.
- **Dosing:** Recommended doses vary, but typical doses range from **600 to 1800 mg per day**.
- **Dietary Sources:** NAC is not naturally found in foods but can be obtained through supplementation.

Zinc:

- **Mechanism of Action:** Zinc is involved in thyroid hormone synthesis and metabolism and has antioxidant properties that protect the thyroid gland from oxidative stress. It also plays a role in immune function and may modulate autoimmune responses.
- **Dosing:** Recommended daily intake for adults is around 8-11 milligrams (mg) per day. Supplementation may vary, but typical doses range from **15 to 30 mg per day**.
  - A randomized controlled trial published in Biological Trace Element Research found that zinc supplementation (30 mg/day) reduced thyroid antibody levels and improved thyroid function in patients with autoimmune thyroiditis.
  - If taking more than 25 mg daily long-term, pair with 1-2 mg copper, as it can deplete copper long term
- **Dietary Sources:** oysters, red meat, poultry, beans, nuts, and whole grains.

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- **Vitamin B1 (Benfotiamine):**
  - **Mechanism of Action:** Benfotiamine is a synthetic derivative of thiamine (vitamin B1) with enhanced bioavailability. It has antioxidant properties and may help reduce oxidative stress and inflammation associated with Graves' disease.
  - **Dosing:** Recommended doses vary, but typical doses range from **300 to 600 mg** per day.
  - **Dietary Sources:** Benfotiamine is not naturally found in foods, as it is a synthetic form of thiamine.

- **Inositol:**
  - **Mechanism of Action:** Inositol plays a role in cellular signaling pathways and may help regulate insulin sensitivity and hormone balance, and is very helpful in women with other hormonal fluctuations as well. Studies have shown efficacy in reducing thyroid antibodies. It may also support mood and mental health, which can be affected by Graves' disease.
  - **Dosing:** Typical doses range from **1000 to 4000 mg per day**. The most supportive formulations contain a blend of myoinositol and d-chiroinositol in a 40:1 ratio, this matches the body's natural ratio and has been shown to be more effective than either form of inositol alone to improve metabolic and hormonal profile.
  - **Dietary Sources:** Dietary sources of inositol include fruits (such as citrus fruits and cantaloupe), beans, grains, nuts, and seeds.

- **Coenzyme Q10 (CoQ10):**
  - **Mechanism of Action:** Coenzyme Q10 is involved in cellular energy production and has antioxidant properties. It may help protect the thyroid gland from oxidative damage.
  - **Dosing:** Recommended doses vary, but typical doses range from **100 to 200 mg** per day.
  - **Dietary Sources:** Dietary sources of CoQ10 include oily fish (such as salmon and tuna), organ meats (such as liver and kidney), whole grains, and spinach

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Vitamin B12:

- **Mechanism of Action:** Vitamin B12 is essential for nerve function, red blood cell production, and DNA synthesis. It may also help support thyroid health and energy metabolism. Adequate B12 levels are needed for preventing fatigue and neurological issues, which can be common with Graves' disease.
- **Dosing:** Recommended daily intake for adults is around 2.4 micrograms (mcg) per day. Supplementation doses may vary, but typical doses range from **500 to 1000 mcg per day**.
- **Dietary Sources:** Dietary sources of vitamin B12 include animal products (such as meat, fish, poultry, eggs, and dairy products) and fortified foods (such as fortified cereals, nutritional yeast, and plant-based milk alternatives). For those on a plant-based diet, fortified foods or supplements may be necessary.

Iron:

- **Mechanism of Action:** Iron is essential for red blood cell production and oxygen transport in the body. It may help prevent or treat anemia, which can occur as a result of Graves' disease or its treatment. It is important to test your iron levels to see if supplementation is necessary, because too much iron can easily be toxic.
- **Dosing:** Recommended daily intake for adults is around 8-18 mg per day, depending on age and gender. Supplementation doses may vary, but typical doses range from **18 to 65 mg per day** of the bisglycinate (non-constipating) version
- **Dietary Sources:** Dietary sources of iron include red meat, poultry, fish, beans, lentils, tofu, fortified cereals, spinach, and other leafy green vegetables.

Probiotics:

- **Mechanism of Action:** Probiotics are beneficial bacteria that help maintain a healthy balance of gut microbiota and support digestive health. They may also help modulate immune function and reduce inflammation associated with autoimmune conditions like Graves' disease.
- **Dosing:** Recommended doses vary depending on the strain and formulation. Typically, doses range from 1 to 10 billion colony-forming units (CFUs) per day, up to 100 billion or more. It is important to choose options with multiple strains to support a diverse digestive system.
- **Dietary Sources:** Dietary sources of probiotics include fermented foods (such as yogurt, kefir, sauerkraut, kimchi, and kombucha) and dietary supplements.

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Calcium

- Mechanism of Action: Excess thyroid hormone speeds up bone turnover, pulling calcium from the bones. Over time this raises the risk of osteopenia and osteoporosis, especially in women and after long periods of hyperthyroidism or steroid treatment for TED. Calcium works with vitamin D, K2, and magnesium to protect bone density.
- Dosing: Recommended daily intake for adults is 1,000-1,200 mg from all sources. Food first is preferred. If supplementing, 500-600 mg at a time, as calcium citrate for best absorption.
- Note: Separate calcium from levothyroxine by at least 4 hours. A bone density (DEXA) scan may be worth discussing with your doctor if you've been hyperthyroid for a long time.
- Dietary Sources: Sardines and canned salmon with bones, leafy greens (kale, collards, bok choy), tahini, almonds, and dairy if tolerated.

Copper

- Mechanism of Action: Copper works as a partner to zinc. It supports iron metabolism, energy production, and antioxidant enzymes. Taking zinc long-term can lower copper levels, which can lead to anemia and fatigue.
- Dosing: 1-2 mg per day, typically only needed when taking more than 25 mg of zinc long-term. Test before supplementing, since too much copper can also cause problems.
- Dietary Sources: Organ meats, shellfish, cashews, sunflower seeds, and dark chocolate.

B-Complex and Folate

- Mechanism of Action: Hyperthyroidism speeds up metabolism, which burns through B vitamins faster. B vitamins support energy production, nerve health, mood, and methylation. Folate works with B12 to make healthy red blood cells.
- Dosing: One B-complex capsule daily, ideally with methylated forms (methylfolate 400-1,000 mcg and methylcobalamin).
- Note: Many B-complex formulas contain biotin, which can falsely skew thyroid lab results. Stop biotin 3-5 days before blood work.
- Dietary Sources: Leafy greens, legumes, eggs, poultry, fish, and nutritional yeast.

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Vitamin C

- Mechanism of Action: Vitamin C is a powerful antioxidant that helps offset the oxidative stress created by excess thyroid hormone. It supports adrenal function, immune balance, collagen formation, and increases iron absorption when taken together.
- Dosing: 500-2,000 mg per day in divided doses. Higher doses may loosen stools.
- Dietary Sources: Bell peppers, citrus, kiwi, strawberries, broccoli, and camu camu.

Vitamin E

- Mechanism of Action: Vitamin E is a fat-soluble antioxidant that protects cell membranes from oxidative damage. Studies have looked at antioxidant combinations, including vitamin E, as support for Graves' disease and eye inflammation.
- Dosing: 100-400 IU per day, ideally as mixed tocopherols.
- Note: Use caution with blood thinners, and stop before surgery.
- Dietary Sources: Sunflower seeds, almonds, avocado, spinach, and olive oil.

Glutathione

- Mechanism of Action: Glutathione is the body's master antioxidant. It is often low in people with autoimmune conditions and plays a key role in liver detox and calming oxidative stress in the thyroid and eye tissues. NAC helps the body make its own glutathione.
- Dosing: 250-500 mg per day of liposomal or S-acetyl glutathione, which absorb better than standard forms.
- Dietary Sources: The body makes it from building blocks found in cruciferous vegetables, garlic, onions, whey, and asparagus.

Quercetin

- Mechanism of Action: Quercetin is a plant flavonoid with anti-inflammatory and antioxidant effects. It also stabilizes mast cells, which helps with histamine reactions. Lab studies show quercetin can calm the orbital fibroblasts that drive fat and tissue growth behind the eyes in TED, which makes it an exciting option for eye support.
- Dosing: 500-1,000 mg per day, often paired with vitamin C or bromelain for better absorption.
- Dietary Sources: Capers, red onions, apples, berries, and green tea.

Melatonin

- Mechanism of Action: Hyperthyroidism often disrupts sleep. Melatonin helps regulate the sleep-wake cycle and is also an antioxidant that helps modulate the immune system.
- Dosing: 0.5-3 mg taken 30-60 minutes before bed. Start low, since more is not always better.
- Dietary Sources: Tart cherries, pistachios, kiwis, and eggs, along with morning sunlight and darkness at night to support your body's own production.

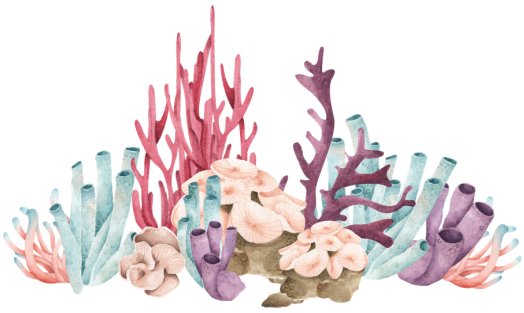
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SUPPLEMENTS TO AVOID OR USE WITH CAUTION IN GRAVES

A lot of popular "thyroid support" supplements are designed for hypothyroidism and can make Graves worse. Before adding anything new, check the label for these:

- **Iodine, Kelp, Bladderwrack, and Seaweed:** Extra iodine can fuel more thyroid hormone production and flare hyperthyroidism. Watch for hidden iodine in multivitamins, sea moss, and "thyroid support" blends.
- **Thyroid Glandulars**: Contain actual animal thyroid tissue and hormone. Avoid with hyperthyroidism.
- **L-Tyrosine**: A building block of thyroid hormone, often found in energy and thyroid formulas.
- **Ashwagandha**: Can raise thyroid hormone levels. Avoid while hyperthyroid.
- **Biotin**: Doesn't change your thyroid, but it can make lab results look falsely hyperthyroid (low TSH, high T4 and T3) and falsely raise TSI and TRAb results. Stop it 3-5 days before blood work.
- **Immune Stimulants** (echinacea, astragalus, high-dose medicinal mushrooms, spirulina): These may push an already overactive immune system. Use only with guidance.
- **Stimulants** (caffeine-heavy pre-workouts, green tea extract, yohimbine): Can worsen palpitations, anxiety, and tremors.
- **Iron, Calcium, and Magnesium Timing:** These bind thyroid medication. If you are on levothyroxine after RAI or surgery, separate them by at least 4 hours.

Not sure about a supplement? Bring the label to your practitioner or pharmacist before starting it, or book a 1:1 visit with me to go over your list together!



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Chapter 11

FUNCTIONAL MEDICINE

A HOLISTIC, ROOT CAUSE APPROACH TO GRAVES

Functional medicine is what finally connected the dots for me. Instead of asking 'which pill matches this symptom?', it asks 'why is this happening in the first place?' This chapter shows you how a root-cause approach to Graves' works, the testing I recommend, and a sample protocol similar to the one I used myself.

Functional medicine for Graves Disease involves a **comprehensive and personalized approach that seeks to understand the root causes of the condition and address underlying imbalances within the body**. Functional medicine practitioners recognize that the syndrome is not a one-size-fits-all condition, and the way it manifests can present very differently in people. The primary goal is to identify and treat the specific factors that are contributing to or triggering Graves symptoms.

Functional medicine starts with a **detailed patient history** and thorough examination, considering various aspects such as **genetics, lifestyle, environmental factors, and physiological function**. Specialized testing may be ordered to assess thyroid hormone levels, immune function, inflammation markers, underlying infections, toxic overload, and other relevant tests. This may include regular blood work that can be taken at the regular doctors office, or some specialized testing that can be done in the privacy of ones home such as saliva testing, blood spots, and stool testing.

Nutritional intervention is a big part of functional medicine for Graves and TED. The focus is on making dietary changes that reduce inflammation and boost thyroid health. This usually means eating mostly whole, anti-inflammatory foods. Depending on your individual needs, specific nutrients like selenium, vitamin D, and omega-3 fatty acids might be recommended to help support your thyroid and balance your immune system.



FUNCTIONAL MEDICINE APPROACH TO GRAVES

Living with Graves' Disease and Thyroid Eye Disease (TED) has shown me just how vital lifestyle changes are in managing these conditions functionally. Exercise isn't just about staying fit; it's a powerful tool for reducing stress and supporting immune function. Stress reduction techniques, including mindfulness and relaxation exercises, may be added to manage the impact of stress on thyroid health and the autoimmune response. Whether it's yoga, walking, or something more intense, finding the right type of exercise for your body and condition is key, and working with a practitioner who GETS IT can make all the difference.

In addition, functional medicine may involve **targeted supplementation**. For example, selenium supplements have shown promise in reducing thyroid antibody levels and supporting thyroid function. Those with high free T3 may benefit from a strong anti-thyroid herb such as bugleweed or L-carnitine. Some people may need other nutritional supplements and blends based on the outcome of their blood work, as many patients are deficient in iron and/or vitamin B12. Sometimes this is due to dysbiosis or gut pathogens, so anti-microbial herbs may be needed. Others may need blood sugar, liver, or detox support based on their symptoms and bloodwork. The choice of supplements is very individualized based on the specific needs identified through testing and evaluation.

Functional medicine practitioners collaborate with patients to develop a comprehensive, personalized, and sustainable plan that addresses the root causes of Graves' rather than just managing the symptoms. You're not a passenger here. You're in the driver's seat, and your plan changes as you heal, alongside any medications you're taking. Regular check-ins and adjustments keep the plan in tune with your evolving health, making sure it works in harmony with any conventional treatments.

Please be aware that the process can be lengthy. First, you need to book the visit and fill out intake forms. Then there's the initial visit with the provider, creating a care plan, ordering any necessary tests, making lifestyle and nutrition changes, picking out and ordering supplements, waiting for them to ship, and finally starting to take them. It might take 3-6 months to see changes once everything's in place, but the results will be long-lasting if you stick with it.



FUNCTIONAL MEDICINE TESTING

Specialized lab testing can offer valuable insights beyond standard thyroid panels. These tests help uncover underlying imbalances, nutrient deficiencies, and immune responses that may be driving your symptoms, allowing for a more targeted and personalized treatment plan. Here's a list of functional medicine lab tests that can be particularly beneficial in understanding and addressing these conditions.

1. Comprehensive Thyroid Panel

- Brand/Company: ZRT Lab, Doctor's Data, Labcorp
- Tests for: TSH, Free T3, Free T4, Reverse T3, Thyroid Peroxidase Antibodies (TPOAb), Thyroglobulin Antibodies (TgAb), Thyroid Stimulating Immunoglobulin (TSI), and Thyroid Receptor Antibodies (TRAb) or Thyrotropin Binding Inhibitory Immunoglobulins (TBII).
- Why it's helpful: This panel provides a complete look at thyroid function and autoimmunity. It helps identify both hyperthyroid and hypothyroid states, antibody levels that suggest autoimmune activity, and how well your thyroid hormones are being converted and utilized. Elevated Reverse T3 can indicate that T4 is being converted into rT3 instead of the active T3, leading to symptoms of hypothyroidism even if TSH and T4 levels are normal. This is particularly important in the context of stress or chronic illness.

2. Adrenal Stress Profile

- Brand/Company: DUTCH (Precision Analytical), Hormone Zoomer (Vibrant), Cortisol Awakening Response (Various)
- Tests for: Cortisol, DHEA, and cortisol rhythm throughout the day.
- Why it's helpful: Since stress can worsen Graves' disease and TED, this test evaluates adrenal function to determine if stress management strategies need to be implemented. Cortisol imbalances can also affect thyroid function. DUTCH is also insightful for women struggling with hormonal imbalances as it tests for estrogen, progesterone, and testosterone metabolites, as well as melatonin, organic acids, and can provide insight into the body's methylation status (how well you can process and use certain nutrients and chemicals for detoxification to DNA repair).

3. Comprehensive Stool Analysis

- Brand/Company: GI Advanced (US Biotek), GI-MAP (Diagnostic Solutions), Gut Zoomer (Vibrant)
- Tests for: Gut microbiome balance, pathogens, parasites, yeast, inflammation markers like calprotectin, and intestinal health markers.
- Why it's helpful: Gut health is crucial for immune regulation, and imbalances in the gut can exacerbate autoimmune conditions. Identifying and addressing gut dysbiosis, infections, and leaky gut can be a critical part of managing Graves' disease. GI Map can also check for EBV.

4. Micronutrient Panel

- Brand/Company: Metabolomix+ or NutraEval (Genova), Micronutrient Test (Vibrant)
- Tests for: Vitamin and mineral levels, including selenium, zinc, magnesium, vitamin D, B vitamins, and antioxidants.
- Why it's helpful: Micronutrient deficiencies can impair thyroid function and immune health. This test helps ensure your body has the necessary nutrients.

FUNCTIONAL MEDICINE TESTING

5. Food Sensitivity Testing
- Brand/Company: Cyrex Laboratories (Array 4 and 10), MRT (Oxford Biomedical Technologies), Food Sensitivity Complete (Vibrant)
- Tests for: IgG and IgA antibody responses to foods and food additives.
- Why it's helpful: Identifying food sensitivities, especially to gluten, can be helpful for managing autoimmune thyroid conditions by eliminating trigger foods to lower inflammation.

6. Iodine Loading Test
- Brand/Company: Hakala Research, Doctor's Data
- Tests for: Iodine levels in the body via a urine test after ingesting a known amount of iodine.
- Why it's helpful: While iodine is essential for thyroid function, too much or too little can exacerbate thyroid issues. This test helps determine if your iodine levels are optimal.

7. Heavy Metal Panel
- Brand/Company: HTMA Test (Trace Elements), Metabolomix (Genova), Vibrant
- Tests for: Levels of heavy metals like mercury, lead, cadmium, and arsenic in the body.
- Why it's helpful: Heavy metal exposure and toxicity can interfere with thyroid function and contribute to autoimmune activity. Hair testing (HTMA) is a cheap, easy option.

8. Oxidative Stress Test
- Brand/Company: Metabolomix+ (Genova Diagnostics)
- Tests for: Markers of oxidative damage and antioxidant capacity.
- Why it's helpful: Oxidative stress can contribute to tissue damage and inflammation in Graves' disease and TED. This test assesses the body's balance between free radicals and antioxidants, helping to guide antioxidant support.

9. Cyrex Array 5: Multiple Autoimmune Reactivity Screen
- Brand/Company: Cyrex Laboratories
- Tests for: A range of autoantibodies associated with various autoimmune diseases, including those affecting the thyroid, gut, brain, and more.
- Why it's helpful: This test helps identify if there are multiple autoimmune conditions at play, which can happen in those with Graves' disease.

10. Inflammatory Markers Panel
- Brand/Company: Genova Diagnostics, Labcorp
- Tests for: C-reactive protein (CRP), homocysteine, and other markers of inflammation.
- Why it's helpful: Inflammation is a key component of autoimmune diseases. This panel helps assess the overall inflammatory burden in the body, guiding anti-inflammatory strategies.

FUNCTIONAL PROTOCOL SAMPLE FOR GRAVES

1. Comprehensive Assessment

- **Detailed Medical History:** Includes genetics, lifestyle, environmental exposures, stress levels, and overall health.
- **Specialized Testing:** Thyroid function tests (TSH, Free T3, Free T4), antibodies (TSI, TRAb), nutrient deficiencies(ex. serum, NutraEval urinary or HTMA hair test), gut health (GI Map, Gut Zoomer, or GI Advanced stool test), adrenal and hormonal health (DUTCH salivary and urinary test), and toxin exposure (various).

2. Dietary Interventions

- **Anti-inflammatory Diet:** Emphasizes whole foods, fresh fruits, vegetables, lean proteins, and healthy fats. Avoid processed foods, refined sugars, and inflammatory foods.
- **Gluten and Dairy-Free Diet:** Many with autoimmune diseases find relief by eliminating gluten and dairy.
- **Elimination Diet:** Identifying and removing potential food sensitivities and allergens (like gluten, dairy but also specific foods, and alcohol) that can trigger inflammation and autoimmune responses.
- **Nutrient-Dense Foods:** Incorporate foods rich in selenium (Brazil nuts, tuna), zinc (pumpkin seeds, chickpeas), antioxidants (berries, leafy greens), phytonutrients ("eat the rainbow").
- **Adequate protein, water, and fiber intake:** Aim for 25-50% of lbs. bodyweight in grams of protein. So if weight is 100 pounds, consume 25-50g of protein daily.

3. Targeted Supplementation

- **Selenium + myoinositol:** Supports thyroid function and balances antibodies (200 mcg/day)
- **Vitamin D + Vitamin K2:** Modulates immune function (2000-5000 IU/day)
- **Omega-3 Fatty Acids:** Anti-inflammatory benefits (1000-3000 mg/day)
- **Turmeric(curcumin):** Anti-inflammatory benefits (500-2000 mg/day)
- **L-Carnitine:** May help hyperthyroid symptoms (2-4 grams/day)
- **Antithyroid herbs:** bugleweed, motherwort, lemon balm(especially useful if difficulty sleeping) may reduce hyperthyroid symptoms.
- **Magnesium:** Supports adrenal function, sleep, and reduces stress (200-500 mg/day)
- **Probiotics:** Improve gut health and immune (20-100 billion CFUs/day, multi-strain)
- **Gut health:** Glutamine, colostrum if leaky gut. Berberine + other anti-infective herbs if gut dysbiosis.
- **Detox:** Binders to remove toxins, biofilm disruptors for stubborn pathogens, liver support.
- **Liver support:** NAC, silymarin (milk thistle), other supportive herbs
- **Adaptogenic Herbs:** Cordyceps, Rhodiola, Ginseng, Eleuthero, etc for adrenal support and stress management depending on cortisol levels (high vs low)
- **Anti-inflammatory:** if additional anti-inflammatory supplementation is needed

FUNCTIONAL PROTOCOL SAMPLE FOR GRAVES

4. Lifestyle Modifications

- **Stress Management:** Incorporate practices like mindfulness, gratitude, journaling, affirmations, yoga, meditation, deep breathing exercises, and reframing negative thought patterns.
- **Regular Exercise:** At least 20 minutes of gentle-to-moderate movement a day to lower stress..
- **Sleep Hygiene:** Ensure 7-9 hours of quality sleep per night to support immune function and stress reduction.

5. Detoxification

- **Reduce Toxin Exposure:** Minimize exposure to environmental toxins like heavy metals, mold, and endocrine disruptors (hint: fragrance). Swap current household products for natural cleaning products and personal care items. Choose organic food when possible.
- **Sweat & infrared:** Consider saunas and personal infrared machines (they make handheld ones, you can hold it over your thyroid!) for additional detox.
- **Support Liver Function:** Consume liver-supporting foods like cruciferous vegetables, garlic, and turmeric. Consider supplements like milk thistle and NAC (N-acetylcysteine).

6. Gut Health

- **Address Leaky Gut:** Follow the 5R program (Remove, Replace, Reinoculate, Repair, Rebalance). Remove inflammatory foods, replace with digestive enzymes, reinoculate with probiotics, repair with gut-healing nutrients like L-glutamine, colostrum, etc. and rebalance lifestyle factors.
- **Infections/dysbiosis:** Address any underlying infections (e.g., H. pylori, dysbiosis, Candida) that could be contributing to gut permeability and immune dysregulation.

7. Monitoring and Adjustments

- **Regular Follow-Ups:** Continuous monitoring of thyroid function, symptoms, and overall health. Daily to weekly symptoms log and/or journaling is encouraged, as are monthly check-ins with provider. Weekly or bi-weekly coaching may be beneficial for extra support.
- **Initial Phase and Maintenance:** There may be a more strict protocol to follow for the first 3-6 months, followed by ongoing maintenance, based on patient needs.
- **Adjustments:** Modify the protocol based on progress and changing needs.

Thank You
CONCLUSION

Graves' Disease is more than just a thyroid issue: it affects your whole body and mental health. Managing it effectively means taking a well-rounded approach that combines functional medicine, medical care, lifestyle changes, emotional support, and ongoing learning. I wrote this guide for you, and for the people who love and support you.

We've covered a lot, from understanding symptoms and getting diagnosed to exploring treatments, managing Thyroid Eye Disease, making lifestyle changes, trying alternative therapies, and planning for the long term. Here's a quick recap:

- Education and Awareness: knowing all about Graves', its symptoms, and risk factors helps you take charge. Functional medicine dives deep into root causes and how symptoms connect. Keep learning and stay up-to-date: PubMed is a great resource.
- Lifestyle Modifications: a balanced diet, regular exercise, stress management, and self-care are most important. These changes can help you move from just getting by to truly thriving.
- Medical care and functional support: work with healthcare pros like functional health providers, endocrinologists, ophthalmologists, and mental health experts. They can craft a personalized treatment plan that blends conventional and complementary therapies just for you.
- Targeted Supplementation: supplements like selenium, vitamin D, omega-3 fatty acids, and many others can support thyroid function and immune balance. Use them wisely and based on what you need.
- Emotional Support and Community: join support groups and online communities. They provide emotional support, shared experiences, and reliable info. Don't forget the importance of mental health in managing a chronic condition, join our Thyroid Love Club group for extra support!

Graves' Disease is unique to each person, and managing it is a personal journey. By integrating functional health, medical care, lifestyle changes, emotional support, and continuous learning, you can live a fulfilling life and manage your symptoms effectively. This guide is packed with useful info, but everyone's experience is different. Work with your healthcare team, stay informed, and choose what works best for you. Listen to your body. We're all in this together. I hope this guide has helped you feel more informed and empowered. Wishing you all of the best on your thyroid journey!

Now What?

TAKING THE NEXT STEP

If you are ready to take an active role in your thyroid journey and collaborate with a functional integrative health provider, I would love to work with you and be your guide or coach.

Together we can address the root causes of immune and thyroid imbalance, to PREVENT rather than just manage symptoms.

We'll build a plan that fits YOUR life, so the changes actually stick... AKA ***not*** jumping into ordering a million expensive tests or supplements.

I'm talking about a ***deep dive***, covering ALL the bases, like: gut health, adrenal function & stress, hormone imbalance, metabolic function, genetics, sleep hygiene, diet, exercise, everything vitamins-herbs-supplements, toxins & toxic overload (mold, heavy metals, etc.), underlying & stealth infections, and more.

Helping people like you is my passion. I'm a doctor of pharmacy and a board-certified health coach who specializes in thyroid, hormone, and autoimmune issues, and I've lived this myself.

Navigating imbalances can be complex, and I understand the unique challenges that come with it, because I have gone through it myself. My approach combines the principles of integrative medicine, functional health, nutrition, and lifestyle modifications (such as movement, yoga, reiki, meditation, and mindfulness).

I'm not here to just help you manage symptoms. I want to help you find the root of them, so you can feel like YOU again. If that sounds like what you've been looking for, let's do this together.

So, what exactly would be included?...

I'm interested...

SO, WHAT IS INCLUDED?

Together we can promote long-term wellness by addressing the root causes of hormonal imbalance instead of merely managing symptoms.

Some of the things we will work on together will include, but are not limited to:

- **Deep-Dive Assessment:** We look at your full history, lifestyle, and environment to find what's really driving your symptoms.
- **Specialized Testing:** Targeted conventional and functional medicine tests to assess hormonal levels, nutrient status, inflammation markers, and other relevant parameters for a personalized approach. Only the tests that make sense for you, to check hormones, nutrients, inflammation, and more.
- **Nutritional Guidance:** Real-food guidance tailored to you, not a cookie-cutter meal plan, focusing on an anti-inflammatory, whole foods-based approach to address hormonal imbalances.
- **Lifestyle Modifications:** A plan for movement, stress, and sleep that works with your energy, not against it.
  - Personalized yoga & fitness planning
  - Distance reiki energy balancing
  - Mindfulness meditation, including coaching and worksheets if desired.
- **Supplementation**: Individualized supplement and herbal recommendations based on what YOU actually need, backed by evidence.
- **Goal Setting & Empowerment:** We'll set realistic goals together and map out exactly how to get there, so you always know your next step
- **Regular Check-Ins:** We'll keep adjusting your plan as your body changes, because healing isn't a straight line..
- **Mind, Body, and Spirit:** Because healing is never just physical.
- **A Real Partnership:** You're not just a chart number. You get open communication and support from someone who has been there.

NEED PERSONALIZED RECOMMENDATIONS & SUPPORT?

THE FUNCTIONAL MEDICINE THYROID CARE PROGRAM

Your labs look “fine,” but you know your body. The exhaustion coffee can’t touch, the brain fog, the anxiety humming under everything, the hair in the drain, the weight that won’t budge. You’re not imagining it. You’re just missing the right team. If you’re tired of hearing “everything looks normal” when you still feel anything but, the Functional Thyroid Care Program is your next step. This exclusive, state-specific program brings together a functional medicine pharmacist, a thyroid health coach (hi its me) who has personally navigated Graves and Thyroid Eye Disease, and an optional integrative physician to create a truly collaborative care plan designed around you. Together, we look at your labs through the lens of optimal ranges, uncover what’s really keeping you stuck, from hidden gut imbalances and nutrient deficiencies to chronic stress and inflammation, and build a personalized protocol to guide you on your path toward remission.

Most people never get access to this level of personalized, root-cause care. If you’re ready to stop guessing and start healing with a team that actually listens, this is your moment. Imagine waking up with energy, thinking clearly, and recognizing yourself again. That woman isn’t gone, and you are more capable of healing than anyone has told you.
Spots are limited and state-specific. You’ve waited long enough to feel like you again.

JOIN YOUR CARE TEAM



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Resources

My website (information, blog, shop, booking, support group):
https://thyroidloveclub.com

Search for clinical studies:
https://pubmed.ncbi.nlm.nih.gov/

Look up clean skin care:
www.ewg.org/skindeep/

Dirty Dozen / Clean Fifteen (by EWG):
www.ewg.org/foodnews/clean-fifteen.php

Apps to check for clean products (ingredients, nutritional value, and additives):
Yuka, EWG, Think Dirty

Find a functional medicine provider or coach:
www.pharmtotable.life

10% off entire Fullscript store (all clean, third-party tested supplements):
https://us.fullscript.com/welcome/elena/ or shop.thyroidloveclub.com

Apps to track nutrition & macros:
Cronometer: www.cronometer.com
My Fitness Pal: www.myfitnesspal.com
autoimmunewellness.com for AIP recipes

Rare Voice (get paid to take surveys about all chronic conditions, including Graves, TED):
survey.thyroidloveclub.com
https://rarepatientvoice.com/rp/soulscriptco

Thyroid Disease Resources
American Thyroid Association (ATA): www.thyroid.org
Offers patient-friendly information, research updates, and educational materials about thyroid diseases, including Graves' disease and TED.
National Institutes of Health (NIH): www.nih.gov
Provides scientific information, research studies, and clinical trial opportunities.

Advocacy and Support Groups:
support.thyroidloveclub.com
tedcommunity.org
gdatf.org
autoimmune.org
Facebook, Reddit, Quora for support groups, community, and forums

Mental Health and Stress Management
betterhelp.com
headspace.com
youtube.com for free guided mindfulness meditations

Questions?

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SUPPLEMENT STORE

MONTHLY SUPPORT GROUP

BOOK 1:1

For educational purposes only. This guide is not intended to diagnose or treat medical conditions. Always consult your healthcare provider before making changes to your medications, supplements, or treatment plan. Affiliate links may be included at no cost to you.