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THE GUT LOVE GUIDE

A FUNCTIONAL MEDICINE ROADMAP TO SUPPORT LEAKY GUT, HORMONE BALANCE, AND AUTOIMMUNE THYROID HEALTH

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The fine print

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A note from Elena

Welcome, Friend

If you're bloated no matter what you eat, there's no "safe" food left no matter how healthy your diet is, you're exhausted from the moment you wake up in a way coffee can't fix, you can't remember why you walked into a room (or your bestie's first name), and you're frustrated because you know something is wrong but keep being told your labs are "normal," this guide is for you. Your gut might be the missing piece nobody talked to you about.

About 70% of your immune system lives in and around your gut lining. So when your gut is struggling, your immune system stays on high alert. That can show up as bloating, fatigue, brain fog, skin flares, anxiety, stubborn low iron, rough perimenopause symptoms, or autoimmune conditions like Graves' disease, Thyroid Eye Disease (TED), and Hashimoto's. Whether you have a thyroid diagnosis or not, this guide will help you find what's going on underneath.

My Gut Story

When I was diagnosed with Graves' disease in December 2022, I was handed a prescription for methimazole and not much else. Nobody asked about my digestion, my stress, or what might have triggered it. A few months later, Thyroid Eye Disease followed, and my left eye began to bulge.

Then the rollercoaster started. As my levels swung toward hypothyroid, my digestion slowed so much that I had painful bloating and constipation almost every day, while my doctors told me my labs were "normal."

In January 2024, while traveling in Mexico, I caught a virus and then what I thought was food poisoning. It turned out to be a parasite. I spent months mostly in bed, exhausted and dizzy, and my eyes flared again, this time with my left eyelid drooping and my right eye starting to bulge. A conventional stool test there only found Blastocystis hominis, which I treated with antibiotics.

When I got home, a specialist told me my worsening eyes were my fault. I left in tears, and then I got to work. A functional stool test showed Blastocystis was still there, plus H. pylori, bacterial overgrowths like Enterococcus and Pseudomonas, and leaky gut. My iron was low, and a DUTCH test showed my stress response was running on empty.

So I went all in on my gut. I went gluten-free, stopped fasting and running on caffeine, and used targeted antibacterial and anti-parasitic herbs, gut-healing nutrients, gentle non-constipating iron, and magnesium. I rested, regulated my nervous system, and leaned on community.

That's when everything shifted. My eyes started to heal, my energy came back, and my anxiety faded. My nutrient levels finally stabilized after months of supplements that hadn't stuck.

That's why I made this guide. I want you to stop guessing, understand what your gut is telling you, and have a clear plan to support it.

Want my support along the way?

My Functional Medicine Care Program is where I work with you 1:1. My team and I order your labs and functional gut testing, walk through every result with you, and build a personalized, step-by-step protocol. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

With love,

Elena

Start here

How to Use This Guide

Read it in order the first time, then come back to the chapters you need. Each part builds on the last.

1. **Understand** how your gut, thyroid, hormones, and medications connect (Part One, Chapters 1-6).
2. **Identify** your own gut patterns and root causes, then test so you stop guessing (Part Two, Chapters 7-10).
3. **Restore** your gut step by step with the 5R roadmap, food, and a 12-week plan (Part Three, Chapters 11-17). Then go beyond the thyroid with your whole body, perimenopause and the estrobolome, low iron, insulin resistance, and constipation and diarrhea (Part Four, Chapters 18-22).
4. **Track** how you feel with the Gut Tracker, and use the FAQ when questions come up.

One important note: these tools are not meant to be taken all at once. More supplements is not the goal. The right supplements, in the right order, for what your testing actually shows, is the goal.

If you're on thyroid medication, pregnant, breastfeeding, or managing other conditions, check with your practitioner or pharmacist before starting anything new.

Need 1:1 support?

If you ever want a practitioner in your corner, join my Functional Medicine Care Program. We order your testing, read your results with you, and build a custom plan together. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Disclaimer: This guide is for educational purposes only and is not medical advice. It is not intended to diagnose, treat, cure, or prevent any disease, and reading it does not create a practitioner-patient relationship. Always talk with your doctor, pharmacist, or qualified healthcare provider before starting supplements, changing your diet, or stopping or adjusting any medication. Please read the full disclaimer on page 2.

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Part One

Understand Your Gut

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3 The Gut in Graves' Disease and TED

4 The Gut in Hashimoto's and Hypothyroidism

5 Women's Hormones and the Gut

6 A Pharmacist's Guide to Medications and Your Gut

Chapter 1

The Gut-Thyroid Connection

Your gut and your thyroid are not two separate problems. They talk to each other all day long through your immune system, your nutrients, your hormones, and your nervous system. When one struggles, the other usually feels it.

Meet Your Gut

Your digestive tract is a long tube that runs from your mouth to your colon, and every part has a job:

- **Mouth:** chewing and saliva start breaking down carbs and signal the rest of your gut to get ready.
- **Stomach:** stomach acid breaks down protein, activates digestive enzymes, frees up minerals like iron and zinc, and kills bugs that come in with your food.
- **Small intestine:** this is where most nutrients are absorbed. Your pancreas adds enzymes and your gallbladder adds bile here. It should have relatively few bacteria.
- **Large intestine (colon):** home to trillions of bacteria that ferment fiber, make vitamins and short-chain fatty acids, and help clear hormones and toxins.

Your microbiome is the community of bacteria, yeast, and other microbes living in your gut. A healthy microbiome is diverse, balanced, and mostly made up of helpers. When it shifts toward fewer helpers and more troublemakers, that's called dysbiosis.

Your Gut Is Your Biggest Immune Organ

About 70% of your immune tissue sits in and around your gut lining. That's because your gut is where your body meets the outside world every time you eat.

Your immune system has two important teams that need to stay in balance:

- **Th17 cells:** the fighters. They're great at clearing infections, but when they're overactive, they drive inflammation and autoimmunity.
- **Regulatory T cells (Tregs):** the peacekeepers. They tell the immune system when to calm down and help prevent it from reacting to your own tissues.

Your gut bacteria help set this balance. Butyrate, a short-chain fatty acid made when good bacteria ferment fiber, helps your body make more Tregs. Dysbiosis, gut infections, and leaky gut tip the balance toward Th17 and inflammation. In autoimmune thyroid disease, that imbalance is exactly what we see.

The Triad of Autoimmunity

Autoimmunity isn't your body "attacking itself" out of nowhere. It's immune dysregulation. Dr. Alessio Fasano, a pediatric gastroenterologist and researcher at Harvard and Massachusetts General Hospital, described what he called the triad of autoimmunity. His research on celiac disease led to the discovery of zonulin, the protein that opens the gut's tight junctions, and showed that three pieces usually need to come together for autoimmunity to develop:

1. **Genetic predisposition:** the genes that make you more susceptible. They set the stage, but genes alone usually aren't enough.
2. **Gut permeability (leaky gut):** the open door that lets food particles, bacterial toxins, and microbes reach your immune system and keep it on high alert.
3. **An environmental trigger:** an infection, chronic stress, pregnancy, toxins, mold, a gut bug, or a big life event that sets things in motion.

The most hopeful part of Dr. Fasano's work is this: if you close the open door and calm the immune response, the autoimmune process may slow down or quiet. Later research from Dr. Fasano and others added two more pieces to the picture: the gut microbiome, and how your immune system itself responds. All of them meet in the gut.

You can't change your genes. But the gut is the part of the triad we can actually work on, and it's often connected to the environmental triggers too. That's why it's where I always start.

Eight Ways Your Gut Affects Your Thyroid

1. **Immune balance:** As above, your microbiome helps decide whether your immune system leans toward calm or toward attack.
2. **Leaky gut:** A permeable gut lining lets bacterial toxins (LPS) and food particles into the bloodstream, keeping inflammation and antibody production going. (Chapter 2 goes deep on this.)
3. **Infections and molecular mimicry:** Some gut bacteria have proteins that look like your thyroid tissue. When your immune system makes antibodies against those bacteria, the antibodies can cross-react with your thyroid. Yersinia enterocolitica is the best known example, and H. pylori has been linked to both Graves' and Hashimoto's.
4. **Thyroid hormone activation:** Your thyroid mostly makes T4, the storage form. It has to be converted into T3, the active form your cells actually use. Some of that conversion relies on a healthy gut, so inflammation and dysbiosis can leave you with "normal" TSH and T4 but low free T3.
5. **Bile and T3:** Bile acids help activate the enzyme that turns T4 into T3 in tissues like muscle. Sluggish bile can mean sluggish thyroid signaling.

6. **Nutrient absorption:** Your thyroid depends on selenium, zinc, iron, iodine, vitamin D, vitamin A, and B12. A struggling gut can't absorb them well, which is why so many of us stay low even when we eat well or supplement.
7. **Medication absorption:** If you take levothyroxine, your gut decides how much actually reaches your bloodstream. Low stomach acid, H. pylori, and celiac disease can all reduce absorption (Chapter 6 covers this).
8. **The estrogen loop:** Gut bacteria help clear estrogen through your stool. When that system gets off track, estrogen recirculates, which raises thyroid binding globulin and ties up more of your thyroid hormone (Chapter 5).

It Goes Both Ways

Your thyroid also controls how your gut works: how fast food moves, how much stomach acid you make, and how well your gut lining renews itself.

	Hyperthyroid (Graves')	Hypothyroid (Hashimoto's, post-RAI or thyroidectomy)
Gut speed	Too fast	Too slow
Common symptoms	Loose stools, urgency, cramping, hunger all the time, weight loss	Constipation, bloating, heaviness, feeling full for hours, weight gain
Stomach acid	Can be variable	Often low
What it can lead to	Nutrient losses, depleted gut lining, bile acid diarrhea	Bacterial overgrowth, methane SIBO, estrogen recycling, candida, gallstones

As your thyroid levels change, your digestion often changes too. Many people with Graves' notice this when they swing from hyper to hypo on medication or after RAI or surgery. If your gut symptoms changed when your thyroid did, that's an important clue.

The Gut-Brain-Thyroid Axis

Your vagus nerve connects your brain to your gut. When you're in chronic stress, your body shifts into fight-or-flight. Stomach acid drops, enzymes drop, motility changes, the gut lining loosens, and secretory IgA (your gut's first line of immune defense) falls.

Stress also raises cortisol, which slows T4 to T3 conversion and pushes more T4 into reverse T3, an inactive form. So stress hits your thyroid twice: directly, and through your gut.

Chapter 2

Leaky Gut, and Why It Happens

Leaky gut is a symptom of something deeper, not the root cause on its own. The real question is always: why is it leaky?

What Leaky Gut Actually Is

Your gut lining is only one cell thick, about the surface area of a studio apartment folded into your belly. Those cells are held together by "tight junctions," which work like a zipper. The zipper is supposed to open a little to let nutrients through and close again.

When the zipper stays open, undigested food particles, bacterial fragments, and toxins slip into your bloodstream where they don't belong. The medical term is increased intestinal permeability.

Zonulin: The Gatekeeper

Zonulin is a protein your gut releases to open those tight junctions. Two of the biggest things that raise zonulin are:

- **Gluten:** the gliadin part of gluten triggers zonulin release in everyone, but people with autoimmunity tend to react more strongly and for longer.
- **Bacteria in the wrong place:** when bacteria overgrow in the small intestine, zonulin rises to flush them out.

This is one reason gluten is the first food I talk about with autoimmune thyroid clients, even when celiac testing is negative.

LPS: The Toxin That Keeps Inflammation Going

LPS (lipopolysaccharide) is a piece of the outer wall of certain bacteria. When it leaks into your bloodstream, your immune system treats it as a serious threat. This low-grade "metabolic endotoxemia" is linked to fatigue, brain fog, insulin resistance, low mood, and higher inflammation markers.

LPS can also slow the conversion of T4 to active T3. So leaky gut can make you feel hypothyroid even when your thyroid gland itself is doing its job.

Secretory IgA: Your Gut's First Line of Defense

Secretory IgA (sIgA) is an antibody your gut makes and releases into the mucus layer that coats your gut lining. Think of it as a security team that greets everything you eat. It binds to harmful bacteria, yeast, viruses, toxins, and food proteins so they can't stick to your gut lining or slip through.

When sIgA is low, your gut's defenses are worn down. More irritants reach the lining, inflammation rises, and the tight junctions loosen. That's why low sIgA can point to leaky gut, and why people with low sIgA often have more infections, more food sensitivities, and more trouble clearing gut bugs.

Common reasons sIgA drops:

- Chronic stress and high cortisol, one of the biggest drivers
- Long-term or recurring gut infections that wear it out
- Low vitamin A, vitamin D, zinc, or protein
- Poor sleep
- Steroids and other immune-suppressing medications

When sIgA is high, your gut's immune system is actively fighting something, like an infection, a parasite, or a food it's reacting to.

How to support healthy sIgA:

- Calm your nervous system daily (Chapter 15)
- Saccharomyces boulardii, which has been shown to raise sIgA
- Colostrum, L-glutamine, zinc, vitamin A, and vitamin D
- Clear any underlying infections so sIgA isn't constantly stretched thin

sIgA is measured on most comprehensive stool tests, including the Gut Zoomer, GI Advanced, and GI-MAP.

What Happens Next

1. The gut lining becomes more permeable.
2. Food particles, LPS, and microbes cross into the bloodstream.
3. The immune system goes on high alert and inflammation rises.
4. Food sensitivities start stacking up, because your immune system now "sees" foods it used to ignore.
5. In someone genetically susceptible, this ongoing alert can fuel thyroid antibodies, whether that's TRAb and TSI in Graves', or TPO and thyroglobulin antibodies in Hashimoto's.
6. With TED, that same immune activation can show up as more puffy, gritty, red, or bulging eyes.

Eye drops and sunglasses protect your eyes. Thyroid medication manages your levels. Neither one asks why your immune system is so fired up in the first place.

Common Root Causes of Leaky Gut

Root cause	How it damages the lining
Dysbiosis	Fewer butyrate producers to fuel and seal the lining
Gut infections (H. pylori, parasites, Yersinia, overgrowth, candida)	Direct irritation, inflammation, and zonulin release
Chronic stress and high cortisol	Loosens tight junctions, lowers stomach acid and secretory IgA
Low stomach acid and poor digestion	Undigested food feeds the wrong bacteria and irritates the lining
Gluten and unrecognized food sensitivities	Zonulin release and ongoing immune reactions
Nutrient gaps (zinc, vitamin D, vitamin A, glutamine, selenium)	The lining doesn't have the raw materials to repair itself
Blood sugar swings and insulin resistance	High glucose weakens the barrier
Medications (NSAIDs, frequent antibiotics, long-term acid blockers, steroids, birth control)	Direct damage or microbiome disruption
Alcohol	Directly loosens tight junctions and feeds dysbiosis
Mold exposure and environmental toxins	Mycotoxins and chemicals irritate the lining and disrupt the microbiome
Poor sleep and overtraining	Raise stress hormones and inflammation

Most people have more than one of these going on. That's why removing just one food or taking just one supplement often isn't enough.

How Leaky Gut Feels

- Bloating and food reactions that seem to come out of nowhere
- Growing list of food sensitivities
- Joint aches, headaches, and body-wide inflammation
- Fatigue and brain fog, especially after meals

- Skin flares like eczema, acne, or rosacea
- Seasonal allergies or histamine reactions that are worse than they used to be
- Thyroid antibodies that won't come down

How We Check for It

Zonulin can be measured in stool (on a comprehensive stool test) or in blood. Cyrex Array 2 checks for antibodies to the proteins that hold your gut lining together (occludin and zonulin) and to LPS. In practice, I also look at the whole picture: symptoms, food reactions, secretory IgA (low levels can point to leaky gut), calprotectin, and what's growing in the gut. More in Chapter 9.

The Good News

The cells lining your gut renew themselves every 3 to 5 days. When you remove what's irritating it and give it what it needs, it can respond surprisingly fast. That's what Part Three of this guide is all about.

Chapter 3

The Gut in Graves' Disease and TED

Graves' disease happens when the immune system makes antibodies (TSI and TRAb) that switch on the TSH receptor and push the thyroid to overproduce hormone. In Thyroid Eye Disease, those same antibodies and immune cells also target tissue behind the eyes. The gut is involved in both, and it was the turning point in my own story.

What Research Shows About the Graves' Microbiome

Studies comparing people with Graves' to people without it have found:

- **Less diversity:** fewer different kinds of bacteria overall.
- **Fewer butyrate producers:** the bacteria that feed the gut lining and help make calming Tregs.
- **More inflammatory species:** shifts toward bacteria that can drive Th17 activity.
- **Changes that track with antibody levels:** in some studies, the more out of balance the microbiome, the higher the TRAb.

Research on the microbiome in TED is newer, but early studies suggest people with TED have different gut bacteria than people with Graves' who don't have eye involvement. Animal studies show changing the gut bacteria can change how severe the eye disease gets. We're still learning, but the direction is clear: the gut matters for the eyes.

Yersinia: The Bacteria That Looks Like Your Thyroid

Yersinia enterocolitica is a gut bacteria often picked up from undercooked pork, unpasteurized milk, or contaminated water. It has binding sites that look very similar to the TSH receptor.

When your immune system makes antibodies to fight Yersinia, some of those antibodies can recognize your TSH receptor too. This is called molecular mimicry. Antibodies to Yersinia show up more often in people with Graves' than in the general population.

You can carry Yersinia without obvious gut symptoms. That's why I test rather than guess. It shows up on some comprehensive stool tests, including the GI-MAP.

H. pylori and Graves'

H. pylori is a bacteria that lives in the stomach lining. Many people carry it with no symptoms. But it has been linked to higher rates of Graves', and strains carrying a virulence factor called CagA seem to be the most strongly connected.

H. pylori also lowers stomach acid, which means less iron, B12, zinc, and selenium absorbed. For Graves' and TED, where selenium matters for the eyes, that's a big deal. My own stool test found H. pylori, and clearing it was one of the most important steps in my healing.

The Hyperthyroid Gut

Too much thyroid hormone speeds everything up, including your gut:

- **Fast transit:** food moves through too quickly, so you absorb less. Many people notice loose stools, urgency, or more frequent bowel movements.
- **Fat malabsorption:** fats and fat-soluble vitamins (A, D, E, K) don't get absorbed well, and stools may look greasy or float.
- **Bile acid diarrhea:** bile that isn't reabsorbed irritates the colon.
- **Higher nutrient needs:** a revved-up metabolism burns through B vitamins, magnesium, and antioxidants faster, while bones lose calcium.
- **Huge appetite with weight loss:** your body is asking for more fuel.

As your levels come down with treatment, digestion usually slows back toward normal. If you swing hypothyroid on medication or after RAI or thyroidectomy, you may suddenly get constipated for the first time. Chapter 4 covers that side.

The Gut and Your Eyes

In TED, immune cells and antibodies activate cells behind the eyes called orbital fibroblasts. These cells make swelling, fat, and scar-like tissue, which causes bulging, puffiness, double vision, and pressure.

Anything that keeps your immune system on high alert can feed that process. Leaky gut, LPS, gut infections, and dysbiosis are all in that category. So are smoking, stress, and blood sugar swings.

The gut also affects the nutrients we use for eye support:

- **Selenium:** a large trial in mild, active TED found selenium improved quality of life and slowed progression. It has to be absorbed to work.
- **Vitamin D:** low levels are common in Graves' and TED and are linked to more active disease.
- **Quercetin and omega-3s:** anti-inflammatory nutrients being studied for TED, both of which rely on good digestion.

When I addressed my H. pylori, Blastocystis, dysbiosis, candida, and leaky gut, my eyes started to calm down and my antibodies came down. That's not a guarantee for everyone, but it's why I never leave the gut out of a TED conversation.

Overgrowths I See All the Time in Practice

Beyond the big infections, many of my clients with Graves', TED, and Hashimoto's have overgrowths of bacteria that are normal in small amounts but cause problems when they take over. Here are the ones I see most often:

Bacteria	What it is	What it means
Enterococcus	A normal gut resident that can overgrow, especially after antibiotics	Can drive inflammation and is common with dysbiosis and SIBO. It showed up on my own test
Enterobacter	A gram-negative bacteria that can overgrow in an inflamed gut	Releases LPS, the toxin that fuels inflammation and leaky gut, and can contribute to histamine
Escherichia (E. coli)	Most strains are harmless commensals, but levels can climb too high	High levels mean more LPS and more beta-glucuronidase, which recycles estrogen
Streptococcus	Normal in the mouth and gut in small amounts	Overgrowth is common with low stomach acid and SIBO, and can drive bloating, histamine, and inflammation
Clostridium	A large group with both helpful and problematic species	Some species raise beta-glucuronidase, and some produce byproducts that affect mood and brain fog
Prevotella	A commensal that thrives on fiber, but can overgrow	Higher levels have been linked to Th17-driven inflammation, and some studies have found more Prevotella in people with Graves'
Low Akkermansia	A keystone bacteria that maintains the protective mucus layer	When it's low, the mucus layer thins and the gut lining is more exposed. Polyphenols help it grow back (Chapter 13)

None of these are "bad" on their own. What matters is balance. When the opportunists take over and the protective species drop, the immune system stays on alert. These overgrowths often show up even when someone has no obvious gut symptoms, which is one more reason I always test.

What I Look for in Graves' and TED

- [ ] A full thyroid panel: TSH, free T4, free T3, and reverse T3
- [ ] Thyroid antibodies: TRAb and TSI (the Graves' and TED antibodies), plus TPO and thyroglobulin antibodies
- [ ] Yersinia, H. pylori (with virulence factors), and parasites on a stool test
- [ ] Opportunistic overgrowths like Enterococcus, Enterobacter, E. coli, Streptococcus, Clostridium, and Prevotella
- [ ] Low secretory IgA (which can point to leaky gut) or high calprotectin
- [ ] Low butyrate producers like Faecalibacterium and Roseburia, and low Akkermansia
- [ ] Signs of fat malabsorption (high steatocrit, low elastase)
- [ ] Zonulin or other leaky gut markers
- [ ] Selenium, vitamin D, ferritin, B12, zinc, and magnesium levels
- [ ] Celiac screening, since celiac is more common with autoimmune thyroid disease
- [ ] Fasting insulin, glucose, and A1c, since insulin resistance can worsen TED (Chapter 21), plus stress and sleep patterns

Tracking Remission

When we work on the gut in Graves', the goal is calmer immune activity, not just better digestion. So alongside symptoms, I track TRAb or TSI every few months with your doctor. Antibodies trending down is one of the best signs your body is moving toward remission.

Ready to calm your immune system from the root?

In my Functional Medicine Care Program, we test for the gut triggers linked to Graves' and TED, track your antibodies, and build a protocol around your results. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Chapter 4

The Gut in Hashimoto's and Hypothyroidism

Hashimoto's is the most common cause of hypothyroidism. The immune system makes antibodies against thyroid peroxidase (TPO) and thyroglobulin (Tg), and over time the thyroid makes less hormone. Many people with Graves' also end up hypothyroid after RAI, thyroidectomy, or too high a dose of antithyroid medication. Either way, a slow thyroid usually means a slow gut.

The Slow Gut Cycle

Low thyroid hormone, especially low free T3, slows the muscle contractions that move food through your gut. That sets off a chain reaction:

1. Food moves slowly, so you feel full and heavy for hours.
2. Stool sits longer in the colon and gets harder, leading to constipation.
3. The "cleaning wave" in your small intestine weakens, so bacteria back up where they don't belong.
4. Bacteria overgrow in the small intestine (SIBO), causing bloating and gas.
5. Methane-producing microbes thrive and slow the gut even more.
6. Estrogen and toxins get recycled from the stagnant stool instead of leaving.
7. Inflammation rises and T4 to T3 conversion drops, which slows the gut further.

This is why constipation in hypothyroidism often doesn't respond to fiber alone. The signal to move isn't there.

SIBO and Hypothyroidism

SIBO is much more common in people with hypothyroidism. In one well-known study, about half of people with a history of hypothyroidism tested positive for SIBO, compared to a small fraction of healthy controls. If you're hypothyroid and bloated, SIBO testing is worth considering. Chapter 8 goes deep on it.

Low Stomach Acid and Autoimmune Gastritis

Thyroid hormone helps drive stomach acid production, so hypothyroidism often means low acid. On top of that, Hashimoto's travels with autoimmune gastritis more often than chance would predict. This is when the immune system attacks the stomach cells that make acid and intrinsic factor, the protein you need to absorb B12.

The result can be:

- Low B12, even with supplements (sometimes progressing to pernicious anemia)
- Low iron and ferritin that won't budge
- Poor protein digestion and more bacterial overgrowth
- Lower levothyroxine absorption, so you may need a higher dose

If your B12 or iron stays low no matter what you do, ask your doctor about intrinsic factor and parietal cell antibodies.

Gluten and Celiac Disease

Celiac disease is several times more common in people with autoimmune thyroid disease than in the general population. Untreated celiac damages the small intestine, worsens nutrient absorption, and can make levothyroxine absorption unpredictable.

Even without celiac, many people with Hashimoto's feel better off gluten, and some small studies have shown a gluten-free diet can lower TPO antibodies. Remember the order: test for celiac first, then go gluten-free.

The Gallbladder Connection

Hypothyroidism slows bile flow and changes bile composition, which raises the risk of sluggish bile and gallstones. Poor bile flow means poor fat digestion, low fat-soluble vitamins, more constipation, and less T3 activation in your tissues.

After RAI or Thyroidectomy

If you've had RAI or your thyroid removed, you rely completely on thyroid medication. That makes your gut even more important:

- Your gut decides how much of your dose actually gets absorbed.
- Low stomach acid, H. pylori, celiac, and gut inflammation can all reduce absorption.
- Being even slightly under-replaced can bring on constipation, bloating, and fatigue.
- Your immune system and antibodies don't disappear with your thyroid, so gut work still matters for TED and overall inflammation.

What I Look for in Hashimoto's and Hypothyroidism

- [ ] Free T3, free T4, reverse T3, TSH, TPO and Tg antibodies
- [ ] SIBO breath test, especially for bloating and constipation
- [ ] Stool test for dysbiosis, H. pylori, yeast, and beta-glucuronidase
- [ ] B12, folate, ferritin, iron panel, vitamin D, zinc, and selenium
- [ ] Celiac screening before going gluten-free
- [ ] Signs of sluggish bile (light or floating stools, low vitamin D despite supplementing)
- [ ] Blood sugar and insulin, since insulin resistance is common with hypothyroidism

Want to check your thyroid at home? **Raena** offers at-home thyroid testing kits: **raena.com/thyroidloveclub**

Chapter 5

Women's Hormones and the Gut

Autoimmune thyroid disease affects women far more often than men, and it often shows up or flares around hormone shifts: puberty, pregnancy, postpartum, and perimenopause. Your gut sits right in the middle of your hormone story.

The Estrobolome

The estrobolome is the group of gut bacteria that handle estrogen. Here's how the system is supposed to work:

1. Your liver "packages" used estrogen by attaching a tag to it (a process called glucuronidation).
2. The packaged estrogen travels with bile into your gut.
3. It leaves your body in your stool.

The problem comes when certain gut bacteria make too much of an enzyme called beta-glucuronidase. It cuts the tag off, and the estrogen is reactivated and reabsorbed instead of leaving. The longer stool sits in your colon, the more time this enzyme has to work.

The Estrogen-Thyroid Loop

Extra estrogen raises thyroid binding globulin (TBG), a protein that carries thyroid hormone in your blood. Thyroid hormone bound to TBG can't get into your cells. So you can have "normal" total thyroid hormone and still feel hypothyroid, because less of it is free and active.

Less active thyroid hormone slows your gut, which keeps stool sitting longer, which recycles more estrogen. Your gut, your hormones, and your thyroid are all in the same loop.

Signs of the estrogen loop:

- Constipation with heavy, painful, or clotty periods
- Rough PMS, breast tenderness, or mood swings before your period
- Weight gain around the hips and thighs
- Fibroids, endometriosis, or fibrocystic breasts
- High beta-glucuronidase on a stool test

Beta-Glucuronidase: The Estrogen Recycler

Beta-glucuronidase is the enzyme at the center of the estrogen loop. Small amounts are normal and even helpful. The problem is too much of it.

What it does: your liver packages estrogen (and toxins) for removal by attaching a molecule called glucuronic acid. Beta-glucuronidase, made by certain gut bacteria, snips that package open. The freed estrogen gets reabsorbed back into your bloodstream instead of leaving in your stool.

What raises it:

- Dysbiosis, especially overgrowth of bacteria like E. coli, Clostridium, and certain Bacteroides species
- Constipation, since stool sitting longer gives the enzyme more time to work
- A low-fiber diet, especially paired with a high intake of processed meats and fried foods
- Alcohol
- Antibiotics and other microbiome disruptors

What it means: high beta-glucuronidase can contribute to heavy or painful periods, PMS, breast tenderness, fibroids, endometriosis, stubborn weight around the hips, and a bigger toxin load. It also raises thyroid binding globulin, which leaves less free thyroid hormone for your cells.

How to test it: beta-glucuronidase is measured on most comprehensive stool tests, including the Gut Zoomer, GI Advanced, and GI-MAP.

How to bring it down:

- Have a bowel movement every day
- Eat 25-35 grams of fiber daily, especially ground flax and cruciferous vegetables
- Calcium D-glucarate, which directly blocks beta-glucuronidase (typically 500-1,500 mg daily, with guidance)
- Lactobacillus and Bifidobacterium probiotics, which help shift the bacteria that make it
- Address dysbiosis with a targeted Remove phase if your stool test shows overgrowth
- Limit alcohol

Your Cycle and Your Gut

It's normal for digestion to change across your cycle:

- **After ovulation (luteal phase):** progesterone relaxes smooth muscle, which can slow your gut and cause bloating and constipation.
- **Right before and during your period:** prostaglandins rise to help the uterus contract. They can also speed up your bowels, which is why many people get looser stools on day 1 or 2.

When these swings are extreme, it often points to an imbalance between estrogen and progesterone, inflammation, or an underlying gut issue that's amplified by hormones.

Stress, Progesterone, and the Gut

Chronic stress raises cortisol, and over time your body may prioritize stress hormones over progesterone. Low progesterone relative to estrogen can mean shorter cycles, spotting, anxiety, poor sleep, and heavier periods. Stress also lowers stomach acid and secretory IgA. Supporting your nervous system supports your gut and your hormones at the same time.

Birth Control and Your Gut

Hormonal birth control can be the right choice for many women, but it's worth knowing how it affects the gut and thyroid:

- Oral estrogen raises TBG, which can lower free thyroid hormone. If you take levothyroxine, your dose may need adjusting when you start or stop the pill.
- The pill can deplete B6, B12, folate, magnesium, zinc, and selenium.
- Long-term use has been linked to shifts in the microbiome and a higher risk of inflammatory bowel disease in some studies.

Never stop birth control without a plan for contraception, and talk to your doctor before making changes.

Histamine and Estrogen

Estrogen can trigger mast cells to release histamine, and histamine can stimulate more estrogen. Many women notice histamine symptoms like flushing, headaches, hives, or congestion get worse around ovulation and right before their period. If that sounds like you, see the histamine section in Chapter 8.

Pregnancy and Postpartum

Pregnancy calms the immune system to protect the baby, then it rebounds after delivery. That rebound is why Graves' often flares, and postpartum thyroiditis often appears, in the first year after birth. Your microbiome shifts dramatically during pregnancy too, and antibiotics during labor, C-sections, sleep loss, and stress can all affect the gut postpartum.

If you're planning a pregnancy, the best time to work on your gut is before you conceive. Many herbs in this guide, especially antimicrobials, are not safe during pregnancy or breastfeeding.

Perimenopause and Menopause

As estrogen declines, microbiome diversity tends to drop, and many women notice new bloating, reflux, constipation, or food reactions. Stomach acid and digestive enzymes decline with age too. Perimenopause is also a common time for thyroid symptoms to appear or change, and the symptoms overlap: fatigue, weight gain, brain fog, poor sleep, and hair thinning. A full thyroid panel and a gut check both belong in a perimenopause workup. Chapter 19 goes much deeper on perimenopause and the estrobolome.

Gut Support for Hormone Balance

- **Have a bowel movement every day.** This is the simplest way to stop recycling estrogen.
- **Eat fiber from a variety of plants**, especially ground flaxseed (1-2 tablespoons daily) and cruciferous vegetables like broccoli, cauliflower, arugula, and Brussels sprouts.
- **Calcium D-glucarate:** helps inhibit beta-glucuronidase so estrogen stays packaged. Typical dose is 500-1,500 mg daily. Ask your practitioner if it's right for you.
- **DIM or sulforaphane (broccoli sprout extract):** support healthy estrogen metabolism in the liver. Avoid in pregnancy and check with your practitioner if you're on hormone therapy.
- **Support your liver and bile** with bitter greens, beets, and the bile support in Chapter 13.
- **Limit alcohol**, which raises estrogen and loosens the gut lining.
- **Check your products:** fragrance, plastics, and some personal care products contain xenoestrogens that add to your estrogen load.

Chapter 6

A Pharmacist's Guide to Medications and Your Gut

After 15+ years as a pharmacist, this is the chapter I wish every thyroid patient got. Medications and the gut affect each other in both directions: your gut controls how well many medications work, and many medications change your gut. Never stop or change a prescription on your own. Use this chapter to ask better questions.

Levothyroxine and Other Thyroid Hormones

Levothyroxine is one of the pickiest medications there is when it comes to absorption. It's absorbed in the small intestine and works best with healthy stomach acid.

Things that can lower absorption:

- Taking it with food or coffee (coffee alone can reduce absorption significantly)
- Low stomach acid, H. pylori, and autoimmune gastritis
- Celiac disease and other small intestine inflammation
- Acid blockers (PPIs like omeprazole, and H2 blockers like famotidine)
- Calcium, iron, magnesium, and antacids taken too close together
- High-fiber supplements, soy, and bile acid binders like cholestyramine

Signs absorption might be an issue: your dose keeps creeping up, your TSH bounces around even when you take it every day, or you feel hypothyroid on a dose that "should" work.

Tips:

- Take it with water only, 30-60 minutes before breakfast and coffee, or at bedtime at least 3-4 hours after your last meal. Pick one and be consistent.
- If you're on an acid blocker or have known gut absorption issues, ask your doctor whether a liquid or gel cap form might absorb more reliably.
- Recheck labs 6-8 weeks after any big change, including healing your gut. As absorption improves, some people need a lower dose.
- Stop biotin 3-5 days before thyroid labs. It can make results look falsely off.

Antithyroid Medications (Methimazole and PTU)

These don't usually harm the gut, but they can cause nausea or an upset stomach early on. Taking them with food can help. Two rare but serious side effects every patient should know:

- **Low white blood cells (agranulocytosis):** if you get a sore throat, fever, or mouth sores, stop and call your doctor right away to get a blood count checked.
- **Liver stress:** watch for yellowing skin or eyes, dark urine, or pain under your right ribs. This is more common with PTU. Be extra thoughtful about liver-heavy herbs and alcohol.

Steroids (Prednisone and IV Methylprednisolone for TED)

Steroids calm inflammation fast, but they're hard on the gut:

- They can irritate the stomach lining and raise ulcer risk, especially combined with NSAIDs.
- They can raise blood sugar and encourage candida overgrowth.
- They suppress the immune system in the gut, including secretory IgA.

During steroid treatment, focus on gentle gut support like collagen, zinc carnosine, and soothing herbs. Avoid betaine HCl, and talk to your doctor about stomach protection. Steroids also deplete calcium, vitamin D, magnesium, and potassium.

Teprotumumab (Tepezza) for TED

Gut-related side effects can include diarrhea, nausea, and muscle cramps, and it can raise blood sugar. It carries a warning that it may worsen inflammatory bowel disease, so tell your doctor if you have Crohn's, ulcerative colitis, or a history of bloody stools. Steady blood sugar habits and electrolytes can help during treatment.

Acid Blockers (PPIs and H2 Blockers)

These are some of the most commonly used medications, and some of the most commonly continued for years without a plan. Long-term low acid can lead to:

- Low B12, magnesium, iron, calcium, and zinc
- SIBO and dysbiosis, since acid normally keeps bacteria out of the small intestine
- Higher risk of C. difficile and other gut infections
- Lower levothyroxine absorption

If you stop a PPI suddenly, rebound acid can make reflux temporarily worse. If you want to come off one, work with your doctor on a slow taper while you support the root cause of the reflux.

Antibiotics

Antibiotics are sometimes absolutely necessary, including for H. pylori. They also reduce microbiome diversity, sometimes for months.

- Saccharomyces boulardii can be taken during antibiotics because it's a yeast, so antibiotics don't kill it.
- Space bacterial probiotics at least 2 hours away from antibiotic doses.
- Follow up with a Reinoculate phase (Chapter 13) once you're done.

NSAIDs (Ibuprofen, Naproxen, Aspirin)

Even short-term use can increase gut permeability, and regular use can damage the stomach and small intestine lining. If you rely on them for headaches, period pain, or joint pain, that's a sign worth investigating, not just medicating.

Metformin

Metformin can cause GI upset and loose stools, and long-term use lowers B12. If you take metformin, get B12 checked yearly. Don't combine it with berberine without guidance, since both lower blood sugar.

GLP-1 Medications (Semaglutide, Tirzepatide)

These slow stomach emptying, which can cause nausea, reflux, bloating, and constipation. Slower emptying may also change how oral medications absorb. If you start, stop, or change the dose of a GLP-1 and you take thyroid medication, ask about rechecking your thyroid labs. Protein, hydration, magnesium, and walking after meals help with the gut side effects.

Other Medications That Slow the Gut

Iron supplements, calcium, opioids, some antihistamines, some antidepressants, and anticholinergic medications can all contribute to constipation. If constipation started with a new medication, mention it to your pharmacist.

Supplement and Medication Timing Chart

Take this	Separate from levothyroxine by	Notes
Coffee	30-60 minutes after	Water only with your dose
Breakfast	30-60 minutes after	Or take levothyroxine at bedtime instead
Calcium	4 hours	Includes calcium-fortified foods and antacids
Iron	4 hours	Take iron with vitamin C, away from coffee and tea
Magnesium	4 hours	Evening is a good time for magnesium
Multivitamin with minerals	4 hours	
Fiber supplements	4 hours	
Slippery elm or marshmallow root	2-4 hours	These coat the gut and can slow absorption
Bile acid binders and binders like charcoal	4 hours	Ask your pharmacist about your specific binder
Probiotics	No separation needed	Space 2 hours from antibiotics

Questions to Ask Your Pharmacist

- Could any of my medications be causing my gut symptoms?
- Are any of my medications depleting nutrients I should check?
- Is my thyroid medication timing working with my other medications and supplements?
- Does this supplement interact with anything I take?

Part Two

Find Your Root Causes

7 What Is Your Gut Telling You?

8 Root Cause Deep Dives

9 Testing the Gut

10 The At-Home Baking Soda Test

Chapter 7

What Is Your Gut Telling You?

Check every box that sounds like you. The pattern with the most checks is a good place to start, both for the deep dives in Chapter 8 and your testing in Chapter 9. Most people check boxes in more than one pattern, and that's normal.

General Signs Your Gut Needs Support

- [ ] Bloating, gas, or feeling full quickly
- [ ] Diarrhea, constipation, or alternating between both
- [ ] Acid reflux or heartburn
- [ ] Food sensitivities that seem to keep growing
- [ ] Low iron, B12, or other deficiencies that won't budge
- [ ] Skin issues like acne, eczema, or rashes
- [ ] Brain fog, fatigue, and anxiety
- [ ] Thyroid antibodies that stay high even though you're "doing everything right"

Pattern 1: Low Stomach Acid

- [ ] Burping, bloating, or heaviness right after meals
- [ ] Feeling full for hours after eating protein
- [ ] Undigested food in your stool
- [ ] Low iron, B12, or zinc despite supplementing
- [ ] Weak, peeling nails or thinning hair

What it means: stomach acid breaks down protein, absorbs the minerals your thyroid needs, and keeps harmful bacteria out of your small intestine.

Pattern 2: Bacterial Overgrowth (SIBO)

- [ ] Bloating within an hour of eating, especially after fiber, garlic, onions, or probiotics
- [ ] Your belly is flat in the morning and looks pregnant by night
- [ ] Constipation that fiber makes worse (often methane type)
- [ ] Loose stools and urgency (often hydrogen type)

What it means: methane-dominant overgrowth slows motility even further, which is a common trap with hypothyroidism.

Pattern 3: Yeast and Candida

- [ ] Strong sugar and carb cravings
- [ ] Recurring yeast infections or UTIs
- [ ] White coating on your tongue
- [ ] Brain fog that gets worse after sweets or alcohol
- [ ] Itchy skin, rashes, or fungal nail issues

What it means: yeast hides along the gut lining, so it can be missed on a stool test. Mold exposure can make it worse.

Pattern 4: Sluggish Bile

- [ ] Pale, floating, greasy, or hard-to-flush stools
- [ ] Nausea or discomfort after fatty meals
- [ ] Pain under your right ribs
- [ ] No gallbladder, or a history of gallstones
- [ ] Low vitamin D, A, E, or K despite supplementing

What it means: bile digests fats, absorbs fat-soluble vitamins, and acts as a natural laxative. Low thyroid function can slow bile flow.

Pattern 5: The Estrogen Loop

- [ ] Constipation alongside heavy, painful, or clotty periods
- [ ] Rough PMS, breast tenderness, or symptoms that spike the week before your period
- [ ] Weight gain around your hips and thighs

What it means: your liver tags estrogen for removal and sends it to your gut. An enzyme some gut bacteria make, beta-glucuronidase, cuts that tag off. The estrogen gets reabsorbed instead of eliminated, and the longer stool sits in your colon, the more time that enzyme has to work. More estrogen raises thyroid binding globulin, which binds up more of your thyroid hormone, which slows your gut even further. This is the loop connecting your gut, your hormones, and your thyroid.

Pattern 6: Histamine Overload

- [ ] Flushing, hives, or itchy skin after meals or wine
- [ ] Headaches or migraines, especially around your period
- [ ] Stuffy nose, sneezing, or post-nasal drip that isn't seasonal
- [ ] Racing heart, anxiety, or trouble sleeping after eating
- [ ] Reactions to leftovers, aged cheese, cured meats, fermented foods, or bone broth

What it means: gut inflammation and dysbiosis lower DAO, the enzyme that breaks down histamine from food. Some bacteria make histamine too. Many people mistake histamine reactions for "new food allergies."

Pattern 7: Parasites and Hidden Infections

- [ ] Gut symptoms that started after travel, camping, or food poisoning
- [ ] Itching around the anus, especially at night
- [ ] Teeth grinding or restless sleep
- [ ] Low iron or ferritin that won't rise
- [ ] Hungry all the time, or no appetite at all
- [ ] Symptoms that flare around the full moon (many clients notice this, even though research is limited)

> **What it means:** parasites like Blastocystis, Giardia, and Dientamoeba can keep the immune system activated and the gut lining irritated, sometimes with only mild gut symptoms. Blastocystis was one of my own findings.

Your Top Patterns

Count your checks in each pattern and write your top three here. Bring this page to your practitioner or use it to choose your first test.

Pattern	Number of checks
General signs	
1. Low stomach acid	
2. Bacterial overgrowth (SIBO)	
3. Yeast and candida	
4. Sluggish bile	
5. Estrogen loop	
6. Histamine overload	
7. Parasites and hidden infections	

A Note on Constipation

Before you add more fiber, coffee, or a stronger laxative, ask yourself one question: is anything actually telling my gut to contract?

Fiber, water, and magnesium all assume motility is working. If low free T3, methane, or sluggish bile is the real issue, you're pushing harder against a closed door.

Chapter 8

Root Cause Deep Dives

This chapter walks through the gut root causes I find most often in my thyroid clients. For each one: what it is, how it connects to your thyroid, how to test, and the conventional and functional options. Treatment for infections should always be guided by testing and a practitioner.

H. pylori

What it is: A spiral-shaped bacteria that burrows into the stomach lining. Roughly half the world carries it, often picked up in childhood or shared within families.

Thyroid connection: It's linked to Graves' and Hashimoto's, lowers stomach acid, reduces absorption of iron, B12, zinc, and selenium, and can lower levothyroxine absorption. Strains with the virulence factor CagA cause more inflammation.

Signs: reflux, burning or gnawing stomach pain, nausea, bloating right after meals, bad breath, feeling full fast, low iron or B12. Many people have no symptoms at all.

Testing: urea breath test or stool antigen test (best for active infection), or a comprehensive stool test like GI-MAP, which also reports virulence factors. Pause PPIs for 2 weeks and antibiotics and bismuth for 4 weeks first, if your doctor agrees.

Conventional treatment: a combination of antibiotics with an acid blocker, often with bismuth. Your doctor will choose based on local resistance patterns. It's important to retest at least 4 weeks after finishing to confirm it's gone.

Functional support: mastic gum, zinc carnosine, DGL, broccoli sprout extract (sulforaphane), and Lactobacillus reuteri. Saccharomyces boulardii taken alongside antibiotic treatment has been shown to reduce side effects and may improve success rates. For a stubborn or recurring infection, I often combine approaches with the prescriber.

Family note: H. pylori can be passed between family members and partners. If yours keeps coming back, household testing may be worth discussing.

SIBO (Small Intestinal Bacterial Overgrowth)

What it is: Bacteria that belong in your colon overgrow in your small intestine, where they ferment your food too early and make gas.

Thyroid connection: Hypothyroidism is one of the biggest risk factors for SIBO, and SIBO in turn drives leaky gut, nutrient malabsorption (especially B12, iron, and fat-soluble vitamins), and inflammation.

The three types:

Type	Gas	Typical symptoms	Common treatments
Hydrogen-dominant	Hydrogen	Bloating, gas, loose stools or urgency	Rifaximin, or herbal antimicrobials like berberine and oregano
Methane-dominant (IMO)	Methane	Bloating, constipation, sluggishness	Rifaximin plus a second antibiotic, or herbs with allicin plus berberine or oregano
Hydrogen sulfide	Hydrogen sulfide	Loose stools, rotten egg gas, sensitivity to sulfur foods	Bismuth-based approaches, temporarily lowering sulfur-rich foods, and supporting the lining

Testing: a lactulose or glucose breath test over 2-3 hours. Trio-smart measures all three gases. You'll follow a simple prep diet the day before.

Root causes to address: low thyroid function, low stomach acid, slow motility, a weak "cleaning wave" from constant snacking, food poisoning, adhesions from surgery, PPIs, and stress. If you only kill the bacteria without fixing why they overgrew, SIBO tends to come back.

After treatment: many people need a prokinetic for a few months to keep the small intestine moving. Natural options include ginger and STW 5 (Iberogast). Prescription options exist too, so ask your doctor. Spacing meals 3-4 hours apart supports the cleaning wave.

How your small intestine normally stays clean: your body has several built-in defenses that keep bacteria in the colon where they belong. When one or more of these breaks down, SIBO can develop:

- **Stomach acid** kills bacteria that come in with your food
- **Bile and digestive enzymes** break down bacteria and keep the environment unfriendly to overgrowth
- **The migrating motor complex (MMC)**, your gut's cleaning wave, sweeps leftover food and bacteria forward between meals
- **The ileocecal valve**, a one-way door between your small and large intestine, keeps colon bacteria from backing up
- **Secretory IgA** and the gut immune system keep bacteria in check

Common signs of SIBO:

- [ ] Bloating within an hour of eating, even after "healthy" foods
- [ ] A flat belly in the morning that looks pregnant by night
- [ ] Gas, burping, or belly pain after meals
- [ ] Diarrhea, constipation, or both
- [ ] Feeling worse after fiber, beans, garlic, onions, or probiotics
- [ ] Low iron or B12 despite supplementing
- [ ] Brain fog or fatigue after meals

SIBO is linked to: IBS (many people diagnosed with IBS turn out to have SIBO), rosacea, restless legs, fat malabsorption, low iron and B12, and hypothyroidism.

Reading a breath test: the standard criteria from the North American Consensus are a rise in hydrogen of 20 parts per million or more within the first 90 minutes, or methane at 10 parts per million or more at any point. Trio-smart also measures hydrogen sulfide. Your practitioner will also look at the pattern and your symptoms, not just the numbers.

Treatment options: antibiotics like rifaximin, herbal antimicrobials (one study found an herbal protocol worked about as well as rifaximin), or an elemental diet. Many people need more than one round.

Preventing relapse: SIBO comes back often when the root cause isn't fixed. Optimize your thyroid levels, support stomach acid and bile, use a prokinetic after treatment, space your meals, manage stress, and retest to confirm it's cleared.

Candida and Mold

What it is: Candida is a yeast that normally lives in small amounts in the gut. It overgrows after antibiotics, steroids, birth control, high sugar intake, high stress, or mold exposure.

Thyroid connection: Yeast overgrowth irritates the gut lining, drives inflammation, and can contribute to histamine reactions and brain fog. Mold mycotoxins can disrupt the immune system and the microbiome.

Signs: sugar and carb cravings, brain fog, recurring vaginal yeast infections or UTIs, white-coated tongue, itchy skin, fungal nails, bloating that's worse after sugar or alcohol.

Testing: candida often hides along the gut lining, so a stool test can miss it. An organic acids test (OAT or Metabolomix+) checks for yeast byproducts like arabinose. If mold is suspected, urine mycotoxin testing and a home inspection (an ERMI dust test is a common starting point) can help. If your home has water damage, the yeast will keep coming back until the mold is addressed.

Conventional treatment: prescription antifungals like nystatin or fluconazole.

Functional support: caprylic acid, oregano oil, undecylenic acid, berberine, S. boulardii, biofilm disruptors, and binders to help clear toxins. Lowering sugar, refined carbs, and alcohol during treatment helps a lot. Going "zero carb" isn't necessary and can stress your thyroid.

Mold and Your Gut

Mold deserves its own spotlight. Many of my clients who have done mold testing have found exposure to either airborne mold or, very often, mold in their food.

- **Airborne mold** comes from water-damaged buildings: leaks, past floods, damp basements, bathrooms without good ventilation, HVAC systems, or a musty smell. You breathe in spores and mycotoxins, and you also swallow them.
- **Food mold** is sneakier. Mycotoxins like aflatoxin and ochratoxin can be found in corn, peanuts, grains, coffee, dried fruit, nuts, wine, and spices, especially when they're stored in warm, humid conditions. They can be present even when you can't see or smell any mold.

What mycotoxins do in the gut:

- Loosen tight junctions and contribute to leaky gut
- Disrupt the microbiome and encourage yeast and candida overgrowth
- Lower secretory IgA and keep the immune system on high alert
- Add to the load on your liver, which can make histamine and hormone issues worse

Signs mold may be part of your story: symptoms that are worse in one building and better when you travel, sinus issues, frequent headaches, brain fog, recurring yeast, histamine reactions, or symptoms that started after a move or a leak.

Testing: a urine mycotoxin test shows which mycotoxins your body is carrying. For your home, an ERMI or HERTSMI-2 dust test is a common starting point, and a qualified mold inspector can find the source.

Lowering your exposure:

- Keep indoor humidity under 50% and fix leaks quickly
- Use a HEPA air purifier, especially in your bedroom
- Choose fresh nuts and seeds, store them in the fridge or freezer, and toss anything that tastes stale or bitter
- Limit corn and peanuts, and choose mold-tested coffee when you can
- Buy dried fruit, grains, and spices in small amounts and store them cool and dry
- Don't keep leftovers more than 2-3 days
- Use binders with your practitioner (Chapter 12) to help carry mycotoxins out

If your home is the source, gut protocols alone usually won't stick. Removing the exposure comes first.

Parasites (Blastocystis, Giardia, Dientamoeba, and Others)

What they are: Organisms picked up from water, food, travel, pets, or other people. Some cause obvious illness. Others, like Blastocystis, are more debated: some people carry them without symptoms, while others feel clearly better once they're cleared.

Thyroid connection: Parasites can keep the gut immune system activated, lower secretory IgA, increase permeability, and steal nutrients like iron.

Signs: symptoms that started after travel or food poisoning, alternating stools, anal itching, low ferritin, teeth grinding, fatigue, skin rashes.

Testing: comprehensive stool testing (GI-MAP and similar), or a traditional ova and parasite test through your doctor. Parasites shed on and off, so one negative test doesn't always rule them out.

Conventional treatment: prescription antiparasitic medications. Some, like Giardia, should always be treated with a doctor.

Functional support: S. boulardii has research support for Blastocystis. Herbal options include berberine, oregano, and blends with black walnut and wormwood. Wormwood is not safe in pregnancy and should be used short term with guidance.

Yersinia

Covered in Chapter 3 for its link to Graves' through molecular mimicry. If it shows up on your stool test, it's always worth treating with your practitioner, often with herbal antimicrobials or, when needed, antibiotics.

Histamine Intolerance

What it is: Your body has more histamine than it can break down. Histamine comes from food, from your own mast cells, and from certain gut bacteria. DAO, the enzyme that clears food histamine, is made in your gut lining, so a damaged gut makes less of it.

Thyroid connection: Histamine reactions are common in people with autoimmunity and leaky gut, and they often flare with estrogen. Chronic histamine symptoms add to inflammation and can mimic anxiety and hyperthyroid symptoms like a racing heart.

Signs: see Pattern 6 in Chapter 7.

Testing: serum DAO, histamine-producing bacteria on a stool test, and a 2-4 week trial of a lower-histamine diet.

Support:

- Address the root: dysbiosis, SIBO, leaky gut, and estrogen balance
- A DAO enzyme taken right before higher-histamine meals
- Quercetin and vitamin C to calm mast cells
- Vitamin B6, copper, and zinc, which support DAO
- A temporary lower-histamine diet (Chapter 16), not forever
- Pause fermented foods, bone broth, and certain probiotic strains (like some Lactobacillus casei and bulgaricus) while you calm things down. Bifidobacterium and spore-based probiotics are often better tolerated.

Sluggish Bile and No Gallbladder

What it is: Your liver makes bile and your gallbladder stores and squeezes it out when you eat fat. Thick or slow bile means poor fat digestion.

Thyroid connection: Hypothyroidism slows bile flow, and bile helps activate T3 in your tissues. Poor bile also means low vitamin D, A, E, and K, and more constipation.

Signs: see Pattern 4 in Chapter 7. Without a gallbladder, bile drips continuously instead of arriving with meals, so fatty meals are harder to digest.

Support: bitters before meals, ox bile with fatty meals (especially without a gallbladder), TUDCA, phosphatidylcholine, taurine, beets, artichoke, dandelion, and bitter greens. Always check with your doctor before using bile support if you have known gallstones.

Constipation and Diarrhea

Your bowel habits are one of the clearest windows into your gut. Constipation can point to low thyroid function, methane SIBO, low stomach acid or bile, or low magnesium. Diarrhea can point to hyperthyroidism, infections, hydrogen SIBO, bile acid issues, or food intolerances. Chapter 22 goes deep on both, including what normal looks like and how to get things moving, or slow them down.

Not sure which of these is yours?
That's exactly what testing answers. In my Functional Medicine Care Program, we find your root causes and address them in the right order. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Chapter 9

Testing the Gut

Testing shows you exactly what needs to be removed, replaced, and repaired. Without it, you can spend months, and a small fortune, on gut supplements that don't match what's actually going on. My own stool test is what found my H. pylori and Blastocystis, and it changed my entire plan.

Why Conventional Stool Tests Miss So Much

A conventional stool test is built to catch an acute infection, the kind that sends you to urgent care. It usually looks for a short list of pathogens (like Salmonella, Shigella, Campylobacter, and C. difficile), checks for blood, and may include an ova and parasite exam under a microscope. That's useful, but it misses most of what drives chronic gut and autoimmune issues.

A conventional test usually does not tell you:

- Whether your beneficial bacteria are low
- Whether opportunistic bacteria or yeast are overgrowing
- Whether you have leaky gut (zonulin) or worn-down gut immunity (secretory IgA)
- How well you're digesting (elastase, fat absorption)
- Whether estrogen is being recycled (beta-glucuronidase)
- H. pylori virulence factors, or low-level parasites that shed on and off

> *My story:*
>
> When I was in Mexico struggling with gut issues, I did a conventional stool test there. The only thing it found was Blastocystis hominis, which I treated with antibiotics. When I got home, I ran a functional stool test. Blastocystis still showed up, even after the antibiotics. It also found H. pylori, several bacterial overgrowths including Enterococcus, Pseudomonas, and Streptococcus, and leaky gut. None of that showed up on the conventional test.

If I had stopped at that first result, I would have kept treating one piece of the puzzle and wondering why I still felt sick.

Which Test Should I Start With?

If you have...	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, fullness for hours after protein, or low iron and B12 that won't budge	H. pylori test + the baking soda test (Chapter 10)
Plans to go gluten-free	Celiac screening first

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

This is the most helpful gut test, and you do it at home. It looks at:

- **Pathogens:** H. pylori (including its virulence factors), Yersinia enterocolitica, parasites, harmful bacteria, and viruses like EBV (GI-MAP)
- **Balance:** beneficial bacteria, plus 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
- **Hormone recycling:** beta-glucuronidase

Comparing the Top Functional Stool Tests

All three are at-home tests, but they are not the same. Here's how I think about them:

Test	How it works	What stands out	My take
Gut Zoomer (Vibrant Wellness)	Combines PCR, ELISA, mass spectrometry, and microarray methods	The widest view: pathogens, commensal bacteria, digestion, inflammation, leaky gut markers, and gut metabolites in one report	My favorite and the most in-depth. My first choice when we want the full picture
GI Advanced Profile (US BioTek)	PCR plus stool culture and macroscopic exam	Culture with sensitivity testing shows which prescription and natural agents, including herbs, your bacteria and yeast respond to	I love it for building an antimicrobial plan, because it tells us which herbs your bugs are most susceptible to
GI-MAP (Diagnostic Solutions)	Quantitative PCR (DNA-based)	Pathogens, H. pylori virulence factors, opportunistic bacteria, with add-ons like zonulin	The best-known name, but not as comprehensive as the other two

See what each report looks like:

- Gut Zoomer: vibrant-wellness.com/tests/gut-zoomer
- GI Advanced Profile: overview of the US BioTek GI Advanced markers
- GI-MAP: Diagnostic Solutions resource library, including the sample report

Other Gut Tests Worth Knowing

There are many more gut tests out there. The ones in this chapter are the ones I use most often with my clients.

One newer option is the **Vitract** gut microbiome test, which Pharm To Table has started using a lot. It uses 16S sequencing to map the bacteria in your gut and looks at diversity, the balance of beneficial and harmful bacteria, and the metabolites your microbes make, with personalized food recommendations. I haven't ordered it myself yet, but it may be worth considering, especially if you want a detailed look at your microbiome balance. Learn more at vitract.com

Results I Pay Close Attention To

Marker	What it can mean
Low secretory IgA	Gut immune defenses are worn down, often from long-term stress or infection. It can also point to leaky gut
High secretory IgA	The immune system is actively fighting something
High calprotectin	Gut inflammation. Very high levels should be checked by a GI doctor to rule out IBD
Low pancreatic elastase	You may not be making enough digestive enzymes
High beta-glucuronidase	Estrogen and toxins are being recycled instead of leaving
Low Lactobacillus, Bifidobacterium, Akkermansia, or Faecalibacterium	Fewer helpers to keep the lining strong and make calming short-chain fatty acids
Yersinia or H. pylori	Both are linked to autoimmune thyroid disease, so they're always worth addressing

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.

Other Gut Tests

Organic Acids Test (Metabolomix+ or OAT): Yeast can be sneaky. It tends to hide along the gut lining, so a stool test can come back "clean" even when yeast is a problem. This urine test picks up the byproducts yeast and bacteria leave behind. Markers like arabinose point to hidden yeast, 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 over 2-3 hours. It requires a simple prep diet the day before.

H. pylori Testing: A breath test or stool antigen test. PPIs, antibiotics, and bismuth can cause false negatives, so ask about pausing them first.

Celiac Screening: A tTG-IgA plus total IgA blood test. Do this BEFORE going gluten-free, because it only works if you're still eating gluten. Celiac disease is more common 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: Helpful, but take the results with a grain of salt. When your gut is leaky, your immune system reacts to a LOT of foods, so you may light up for foods you eat all the time. Sensitivities often change as your gut heals. I 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, shows whether your gut is actually absorbing what you eat.

Reading Your Stool Test, Section by Section

Comprehensive stool tests can be 10+ pages long. Here's how I walk through them with clients, in this order:

1. **Pathogens first.** Anything here (H. pylori, Yersinia, C. difficile, Salmonella, parasites) gets priority, because it's actively driving inflammation.
2. **H. pylori virulence factors.** CagA and VacA tell us how aggressive the strain is.
3. **Opportunistic bacteria.** These are normal in small amounts. High levels of bacteria like Klebsiella, Citrobacter, Proteus, Morganella, or Streptococcus can drive inflammation, histamine, and autoimmune cross-reactions.
4. **Fungi and yeast.** Candida and Geotrichum show up here. Remember, a clean result doesn't fully rule out yeast.
5. **Parasites and protozoa.** Blastocystis, Dientamoeba, Giardia, and others.
6. **Commensal (normal) bacteria.** Low levels mean low diversity. I pay special attention to Akkermansia (protects the mucus layer), Faecalibacterium (a top butyrate producer), Bifidobacterium, and Lactobacillus.
7. **Digestion.** Elastase shows enzyme output. Steatocrit shows fat absorption, which points to bile or enzymes.
8. **Gut immune function.** Secretory IgA, calprotectin, eosinophil activation protein, and zonulin. Low secretory IgA can point to leaky gut.
9. **Beta-glucuronidase.** The estrogen recycling marker.
10. **Occult blood.** Any positive result should be followed up with your doctor.

If Your Test Shows This, Consider This

This is a starting framework, not a prescription. Your practitioner will tailor it to your full picture.

Finding	What it may mean	Areas to focus on
H. pylori positive	Low acid, inflammation, thyroid link	Doctor-guided treatment, mastic gum, zinc carnosine, S. boulardii, retest
Yersinia positive	Molecular mimicry with the TSH receptor	Practitioner-guided antimicrobials, gut repair
Parasite positive	Ongoing immune activation	Doctor or practitioner-guided treatment, S. boulardii, repair
High opportunistic bacteria	Dysbiosis, inflammation, possible histamine	Targeted herbs, prebiotic fiber, repair, check for SIBO
Candida or yeast present	Overgrowth, often after antibiotics or mold	Antifungal herbs, lower sugar, binders, check mold
Low beneficial bacteria	Low diversity and butyrate	30 plants per week, PHGG, probiotics, butyrate
Low Akkermansia	Thin mucus layer	Polyphenols (pomegranate, cranberry, green tea), Akkermansia probiotic
Low elastase	Low enzyme output	Digestive enzymes with meals, check stomach acid
High steatocrit	Fat malabsorption	Bile support, enzymes, check gallbladder
Low secretory IgA	Depleted gut immunity and possible leaky gut	Stress support, S. boulardii, colostrum, glutamine, zinc, vitamin A
High secretory IgA	Active immune response	Look for the infection or trigger driving it
High calprotectin	Gut inflammation	Anti-inflammatory repair, and see a GI doctor if very high
High zonulin	Leaky gut	Remove gluten, address dysbiosis, Repair phase
High beta-glucuronidase	Estrogen recycling	Daily bowel movements, calcium D-glucarate, fiber, crucifers
Positive occult blood	Bleeding somewhere in the gut	Always see your doctor

Blood Work That Tells a Gut Story

You don't need a stool test to see signs of gut trouble. These standard labs often point to it:

Lab	Gut clue
Ferritin and iron panel	Low despite eating red meat or supplementing: low acid, H. pylori, celiac, parasites, or blood loss
B12 (and MMA if borderline)	Low: low acid, autoimmune gastritis, SIBO, metformin, or PPIs
Vitamin D	Low despite supplementing: fat malabsorption or bile issues
Zinc	Low: poor absorption, and low zinc lowers stomach acid
Magnesium (RBC)	Low: poor absorption, stress, PPIs
Total protein, albumin, globulin	Low protein: poor protein digestion. High globulin: immune activation
Alkaline phosphatase	Low: may point to low zinc or magnesium
CBC with differential	High eosinophils: allergies or parasites. Low WBC: check with antithyroid medications
hs-CRP	Systemic inflammation
Fasting insulin, glucose, and A1c	Blood sugar imbalance that feeds dysbiosis and leaky gut
Celiac panel (tTG-IgA + total IgA)	Rule out celiac before going gluten-free

Where to Order

Many of these tests can be ordered without a doctor's visit:

- **Ulta Lab Tests** for blood work like celiac, iron, and nutrient panels: ultalabtests.com/partners/pharmtotable
- **Vibrant Wellness (Gut Zoomer)** and **US BioTek (GI Advanced)** are ordered through a practitioner. These are the tests I use with my 1:1 clients.

How we work together on your stool test:

1. **We order it for you.** I help you choose the right test for your symptoms, and the kit ships to your door.
2. **You collect at home** and send it back with the prepaid label.

3. **We interpret it together.** I walk you through every page of your results on a call, in plain language, and connect the findings to your symptoms, labs, and thyroid.
4. **We build your custom protocol.** Based on what your test actually shows, I create a phased plan: which herbs and supplements (and in what order), what to eat, and the lifestyle pieces that matter most for you.
5. **We retest and adjust.** We track your symptoms and retest to make sure things are truly cleared, not just quieter.

Ready to stop guessing?

Join my Functional Medicine Care Program. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

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. For a stool test, retest a few weeks to a few months after your gut protocol.
- Results are a snapshot of one moment, so always read them alongside how you actually feel.

Chapter 10

The At-Home Baking Soda Test

Low stomach acid is one of the most overlooked gut issues, and you can screen for it in your kitchen. You need strong stomach acid to break down protein, absorb iron, B12, zinc, and selenium, and keep harmful bacteria from settling into your gut. So many of the nutrients your thyroid depends on start with good digestion.

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
- Low thyroid function, which slows acid production
- 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.
4. Repeat for 3 mornings in a row and use your average.

Your burp	What it may point to
Within 2-3 minutes	Enough stomach acid
No burp within 5 minutes	Low stomach acid
Lots of early, repeated burping	Possibly too much acid

Day	Minutes to first burp
Day 1	
Day 2	
Day 3	
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 Chapter 13). 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.

Part Three

Restore Your Gut

11 The 5R Roadmap

12 Remove

13 Replace and Reinoculate

14 Repair

15 Rebalance

16 Eating for Your Gut

17 Your Sample 12-Week Gut Roadmap

Chapter 11

The 5R Roadmap

The 5R framework is the roadmap I use with every client to support the gut. The steps often overlap, but the order matters. Healing the lining before removing an infection is like mopping the floor while the sink is still overflowing.

The 5R Protocol at a Glance

Step	Goal	What it includes	Examples	How long
1. Remove	Take out what irritates the gut and drives inflammation	Trigger foods, alcohol, and infections like overgrowths, yeast, parasites, and H. pylori	Elimination diet or AIP, targeted herbs, biofilm support, binders	4-8 weeks per round, then retest. Stubborn cases may need a second round
2. Replace	Restore what you need to digest well	Stomach acid, digestive enzymes, and bile	Bitters, enzymes, betaine HCl, ox bile, TUDCA, mindful eating	As needed, tapered as digestion improves
3. Reinoculate	Bring beneficial bacteria back	Probiotics (when appropriate), prebiotic fiber, fermented foods, polyphenols	S. boulardii, spore-based or Bifidobacterium strains, PHGG, berries, sauerkraut	Starts during or after Remove, then 2-3 months. Timing depends on SIBO and histamine
4. Repair	Heal and seal the gut lining	Nutrients that rebuild the lining and mucus layer	L-glutamine (like Glutashield), zinc carnosine, collagen, butyrate, colostrum	8-12 weeks. Can start gently right away
5. Rebalance	Keep your results for life	Stress, sleep, movement, blood sugar, and eating habits	Breathwork, walks after meals, 7-9 hours of sleep, 30 plants a week	Ongoing. This is what keeps your results

The next four chapters walk through each step, with the herbs, supplements, and nutrients I use most. Antimicrobial herbs especially should be used with a practitioner, since they can cause die-off reactions and interact with medications.

Why People Get Stuck

- Skipping testing and treating the wrong thing
- Jumping straight to probiotics or repair while an infection is still active
- Stopping too soon, before symptoms are fully resolved
- Never addressing the reason the gut got off track: low thyroid, low acid, stress, mold, or medications
- Trying to do every supplement at once and not knowing what's helping
- Ignoring constipation, so toxins and estrogen keep recirculating

Chapter 12

Remove

Remove comes first, and it's guided by your testing. I choose antimicrobials based on what your results show, not a one-size-fits-all blend. Remove has two parts: what you stop putting in, and what needs to be cleared out.

Foods and Habits to Pull Back On

- **Gluten:** especially important with autoimmune thyroid disease (Chapter 4 explains why). Test for celiac first.
- **Alcohol:** loosens tight junctions, feeds yeast, and raises estrogen.
- **Added sugar and refined carbs:** feed yeast and opportunistic bacteria and spike blood sugar.
- **Ultra-processed foods:** emulsifiers and additives can thin the protective mucus layer.
- **Your personal trigger foods:** from an elimination diet or sensitivity testing. Dairy, eggs, corn, and soy are common ones.
- **Unnecessary NSAIDs:** always talk to your doctor before changing medications.

Choosing Your Remove Diet: Elimination Diet or AIP?

The food side of Remove takes the pressure off your gut and immune system while you work on the root causes. There are two main approaches, and the right one depends on how inflamed and reactive you are.

	Elimination diet	Autoimmune Protocol (AIP)
Best for	Most people starting gut work, mild to moderate symptoms	Active autoimmunity, high antibodies, TED flares, or an elimination diet that didn't help enough
Removes	Gluten, dairy, corn, soy, refined sugar, alcohol, plus your suspected triggers (and eggs if suspected)	Everything on the elimination diet, plus all grains, legumes, nightshades, eggs, nuts, seeds, seed-based spices, coffee, and food additives
How long	30 days, up to 60-90 days with autoimmunity	30-90 days, until symptoms clearly improve
How hard	Moderate	Strict, so it works best with planning and support

Foods to enjoy on AIP:

- Quality protein: wild fish, grass-fed beef and lamb, pasture-raised poultry, organ meats, shellfish
- Vegetables of every color, except nightshades (no tomatoes, peppers, white potatoes, or eggplant)
- Fruit in moderation
- Sweet potatoes, squash, plantains, cassava, and taro for carbs
- Healthy fats: olive oil, avocado, coconut, and animal fats
- Bone broth, fermented vegetables, and fresh herbs
- Non-seed spices like turmeric, ginger, garlic, cinnamon, oregano, and thyme

Tips to make it work:

- Batch cook proteins and roasted veggies twice a week so you're never stuck.
- Read labels for hidden gluten, dairy, soy, and corn (like maltodextrin and "natural flavors").
- Eat enough. Removing foods shouldn't mean under-eating, which stresses your thyroid.
- Track your symptoms in the Gut Tracker so you know what's changing.
- Plan your reintroduction before you start (Chapter 16 walks through it step by step).

If you have a history of disordered eating, skip strict elimination diets and work with a practitioner on a gentler approach. Food freedom matters too.

Herbs and Nutrients for the Remove Phase

These are the herbs and nutrients I use most often to clear overgrowths, yeast, parasites, and infections. I group them by what they do best. Most antimicrobial phases run 4-8 weeks, and I choose one to three agents based on your test results, not all of them at once. Doses are typical adult ranges; always follow your practitioner and the product label.

Broad-spectrum antimicrobials (bacteria, yeast, and some parasites)

Herb	Best for	Typical dose	Cautions
Berberine (also found in goldenseal, Oregon grape, and barberry)	Bacterial overgrowth, hydrogen SIBO, yeast, protozoa. Also helps blood sugar	500 mg two to three times daily with meals	Interacts with many medications, including metformin and other diabetes drugs, cyclosporine, and drugs cleared by CYP3A4. Avoid in pregnancy and breastfeeding
Oregano oil (emulsified)	SIBO, opportunistic bacteria, yeast	50-200 mg two to three times daily with food	Can cause heartburn. Avoid in pregnancy
Garlic (stabilized allicin)	Methane SIBO, bacteria, yeast	450 mg one to three times daily	May increase bleeding risk with blood thinners and before surgery
Neem	Bacteria, yeast, parasites, hydrogen SIBO	300-500 mg two to three times daily	Avoid in pregnancy and when trying to conceive
Olive leaf extract	Bacteria, yeast, and viral support	500-750 mg two to three times daily	Can lower blood pressure and blood sugar
Thyme, clove, and cinnamon oils	Bacteria and yeast, usually in combination blends	Per product label	Can irritate the stomach. Clove can thin the blood
Grapefruit seed extract	Bacteria, yeast, and parasites	Per product label	Can interact with some medications
Uva ursi	Stubborn gram-negative bacteria like Klebsiella and Proteus, in blends	Short courses only, per practitioner	Not for more than 1-2 weeks at a time. Avoid in pregnancy, kidney disease, and liver disease

Antifungals (candida and other yeast)

Herb or nutrient	Best for	Typical dose	Cautions
Caprylic acid	Breaks down yeast cell walls	500-1,000 mg with meals	Can cause stomach upset at first
Undecylenic acid	Stubborn candida	Per product label, under guidance	Avoid in pregnancy
Pau d'arco	Yeast and fungal overgrowth	500 mg two to three times daily	May thin the blood. Avoid in pregnancy
Horopito	Candida, often paired with anise	Per product label	Generally well tolerated
Saccharomyces boulardii	Candida, Blastocystis, loose stools, during antibiotics	250-500 mg (5-10 billion CFU) one to two times daily	Avoid if severely immunocompromised or with a central line

Methane SIBO and motility support

Herb	Best for	Typical dose	Cautions
Allicin plus berberine or oregano	Methane-dominant overgrowth	As above	As above
Atrantil (quebracho, horse chestnut, peppermint)	Methane and bloating	Per product label	Skip if peppermint worsens reflux
Ginger	Motility, nausea, and as a natural prokinetic	500-1,000 mg at bedtime or between meals	May thin the blood in high doses
STW 5 (Iberogast)	Motility, bloating, and fullness	Per product label	Rare liver concerns have been reported. Check with your practitioner if you have liver disease

H. pylori support

Herb or nutrient	Best for	Typical dose	Cautions
Mastic gum	H. pylori and stomach lining health	500-1,000 mg twice daily on an empty stomach	Avoid with a pistachio allergy
Zinc carnosine	Protects and repairs the stomach lining	75 mg twice daily	Provides about 32 mg zinc total. Count it toward your daily zinc
Broccoli sprout extract (sulforaphane)	H. pylori and detox support	Per product label	Generally well tolerated
Lactoferrin	H. pylori, iron support, and immune support	250-500 mg daily	Derived from dairy
Lactobacillus reuteri and S. boulardii	Supporting treatment and reducing side effects	Per product label	See the probiotic cautions in Chapter 13

Anti-parasitic support

Herb	Best for	Typical dose	Cautions
Black walnut hull	Worms and parasites, usually in blends	Per product label	Avoid with tree nut allergy
Wormwood (Artemisia) or artemisinin	Protozoa and worms	Per product label, short term only	Not for pregnancy, breastfeeding, or seizure disorders
Clove	Often paired with black walnut and wormwood	Per product label	Can thin the blood in high amounts
Mimosa pudica seed	Worms and biofilm, popular in functional protocols	Per product label	Human research is limited
Pumpkin and papaya seeds	Gentle food-based support	A handful daily	Gentle, everyday options

Biofilm disruptors and immune-supporting nutrients

Nutrient	Best for	Typical dose	Cautions
N-acetylcysteine (NAC)	Breaking down biofilms, liver and glutathione support	600 mg twice daily away from food	Can cause mild stomach upset
Biofilm enzyme blends	Breaking down the protective layer around stubborn bugs	On an empty stomach, 30-60 minutes before antimicrobials	Check with your practitioner if you take blood thinners
Monolaurin	Bacteria, yeast, and enveloped viruses	1-3 grams daily in divided doses	Start low. Can cause die-off
Lactoferrin	Binds iron that bugs need to grow	250-500 mg daily	Derived from dairy

Herbs I'm careful with in autoimmunity: some popular gut and immune blends include immune stimulants like echinacea, astragalus, andrographis, cat's claw, or high-dose medicinal mushrooms. These can rev up an already overactive immune system in some people with Graves', TED, or Hashimoto's. I also avoid blends that sneak in iodine, kelp, or bladderwrack. Always read the full label.

> **Shop these supplements:** the professional-grade herbs and nutrients I use with clients are in my online formulary, with practitioner pricing: **shop.thyroidloveclub.com**

Herb Options by Organism

This chart shows the herbs I commonly consider for the overgrowths and infections I see most on stool tests. Much of the research on herbs against specific organisms comes from lab studies, so your practitioner will choose based on your full results, symptoms, and history. If you test with the US BioTek GI Advanced Profile, its sensitivity panel shows exactly which herbs your organisms respond to, which takes a lot of the guesswork out.

Organism or overgrowth	Herb options	Notes
H. pylori	Mastic gum, zinc carnosine, broccoli sprout, berberine, lactoferrin, L. reuteri, S. boulardii	Often treated with antibiotics. Herbs can support or follow treatment. Always retest
Yersinia	Berberine, oregano, allicin, S. boulardii	Linked to Graves'. Severe infections need a doctor

Organism or overgrowth	Herb options	Notes
Klebsiella	Berberine, oregano, uva ursi, olive leaf	Can raise histamine. A lower-starch diet may help during treatment
Citrobacter	Berberine, oregano, allicin, uva ursi	Often tied to dysbiosis and inflammation
Proteus	Berberine, oregano, uva ursi, allicin	Has been linked to joint inflammation
Morganella	Berberine, oregano, allicin	A major histamine producer. Pair with a lower-histamine diet
Pseudomonas	Berberine, oregano, allicin, NAC, lactoferrin	Forms strong biofilms, so add biofilm support
Enterococcus	Berberine, oregano, olive leaf, allicin	Avoid probiotics that contain Enterococcus strains
Enterobacter	Berberine, oregano, allicin, uva ursi	Releases LPS and can raise histamine
Escherichia (E. coli), high	Berberine, oregano, allicin, uva ursi	Also raises beta-glucuronidase. Add calcium D-glucarate and fiber
Streptococcus	Berberine, oregano, allicin, olive leaf	Support stomach acid. Avoid probiotics with Streptococcus strains
Staphylococcus	Berberine, oregano, olive leaf, monolaurin	Common with low stomach acid and dysbiosis
Clostridium (overgrowth)	Berberine, oregano, S. boulardii	C. difficile always needs a doctor. S. boulardii can be used alongside treatment
Prevotella (overgrowth)	Berberine or oregano (gently), polyphenol-rich foods	Focus on diet balance and diversity rather than aggressive clearing
Candida and other yeast	Caprylic acid, undecylenic acid, oregano, berberine, pau d'arco, horopito, allicin, S. boulardii	Lower sugar and check for mold exposure
Blastocystis hominis	S. boulardii, berberine, oregano, black walnut and wormwood blends, allicin	Can be stubborn. Retest after treatment
Dientamoeba fragilis	Berberine, oregano, wormwood	Often needs prescription treatment
Giardia	Berberine and S. boulardii as support	Always treat with a doctor first

Organism or overgrowth	Herb options	Notes
Worms (like pinworm)	Black walnut, wormwood, clove, mimosa pudica, pumpkin and papaya seeds	Prescription treatment is usually needed. Treat the whole household
Hydrogen SIBO	Berberine, oregano, neem	Add a prokinetic afterward
Methane SIBO (IMO)	Allicin plus berberine or oregano, Atrantil	Constipation usually needs support too
Hydrogen sulfide SIBO	Bismuth (with your doctor), zinc, berberine	Temporarily lower sulfur-rich foods

What a Remove Phase Can Look Like

These are examples of how a practitioner might structure things, not instructions to follow on your own.

Finding	Example approach (4-8 weeks)
Hydrogen SIBO	Berberine + oregano oil, then a prokinetic
Methane SIBO	Allicin + berberine or oregano, plus motility support
H. pylori	Doctor-prescribed treatment with S. boulardii, or mastic gum + zinc carnosine + broccoli sprout when appropriate
Candida	Caprylic acid or undecylenic acid + S. boulardii + biofilm support, with lower sugar
Blastocystis	S. boulardii, often with berberine or oregano
General dysbiosis	One or two targeted herbs plus prebiotic fiber

Anti-Parasite Support

Parasites like Blastocystis, Dientamoeba, Giardia, and worms can keep your immune system on alert and your gut lining irritated. Clearing them usually takes a dedicated phase of its own, guided by testing.

Conventional treatment: your doctor may prescribe antiparasitic medications depending on the organism. Giardia, worms, and anything causing significant symptoms should always be treated with a doctor.

Herbs and nutrients I use:

Support	What it's used for	Notes
Saccharomyces boulardii	Blastocystis and protozoa, and protecting the lining	Has research support for Blastocystis. Safe to use alongside antibiotics
Black walnut hull	Traditional anti-parasitic, especially for worms	Usually in a blend. Avoid with tree nut allergy
Wormwood (Artemisia)	Protozoa and worms	Short term only. Not for pregnancy, breastfeeding, or seizure disorders
Clove	Often paired with black walnut and wormwood	Can thin the blood in high amounts
Berberine	Protozoa, bacteria, and yeast	See the interaction cautions above
Oregano oil	Broad antimicrobial support	Can cause heartburn
Mimosa pudica seed	Popular in functional protocols for worms and biofilm	Research in humans is limited
Pumpkin seeds and papaya seeds	Food-based support	Gentle, everyday options

How a parasite phase usually looks:

- **Length:** often 4-8 weeks, sometimes repeated in a cycle, since herbs work best on active stages and eggs can hatch later.
- **Timing:** many practitioners start or intensify around the full moon, when some parasites are thought to be more active. The research here is limited, but many clients notice symptoms flare around that time.
- **Support drainage:** keep your bowels moving daily, use a binder if recommended, and stay hydrated.
- **Household:** pinworms spread easily, so everyone in the home may need treatment. Wash bedding and towels in hot water, and keep nails short.
- **Retest** after finishing to confirm they're gone. Parasites shed on and off, so one clean test isn't always the final word.

Biofilm Disruptors

Stubborn bacteria and yeast often hide inside biofilms: protective, slimy layers they build out of sugars, proteins, and DNA, then stick to your gut lining. Think of a biofilm as a shield. Inside it, microbes are much harder for antimicrobials and your immune system to reach, which is one reason some infections keep coming back.

Signs biofilm may be part of the picture:

- SIBO, candida, or H. pylori that returns after treatment
- Symptoms that barely budge despite a solid Remove protocol
- Organisms that keep showing up on retests

Common biofilm disruptors:

- **NAC (N-acetylcysteine):** 600 mg twice daily away from food. Also supports glutathione and the liver.
- **Enzyme blends:** break down the biofilm matrix. Some contain serrapeptase, nattokinase, or lumbrokinase, which can thin the blood, so check with your practitioner if you take blood thinners or have surgery coming up.
- **Lactoferrin:** binds the iron microbes need to build biofilms.
- **Monolaurin:** helps break down the outer layer of some bacteria and yeast.
- **Herbs with anti-biofilm activity:** berberine, oregano, and garlic do double duty as antimicrobials and biofilm disruptors.
- **Bismuth:** sometimes used with your doctor, especially for H. pylori and hydrogen sulfide SIBO.

How to use them: biofilm support is usually added for recurring or stubborn infections, not for everyone. Take biofilm disruptors on an empty stomach 30-60 minutes before your antimicrobials, so the shield is down when the herbs arrive. Many practitioners add a binder 1-2 hours later to catch what's released. Start low, since breaking up biofilms can increase die-off.

Binders

Binders grab toxins released during die-off, plus mold toxins and bile-recycled waste, and carry them out in your stool.

- **Activated charcoal:** broad binder. Take 2 hours away from food, supplements, and medications.
- **Bentonite or zeolite clay:** binds a range of toxins. Same spacing rules.
- **Modified citrus pectin:** gentler, also feeds good bacteria.
- **Chlorella:** binds some toxins and metals. It can contain iodine, so use caution with Graves'.
- **Prescription binders:** sometimes used for mold illness, through your doctor.

Binders can constipate you, so only use them when your bowels are moving well. Always separate them from thyroid medication by at least 4 hours.

Managing Die-Off

When bacteria, yeast, or parasites break down, they can release toxins faster than your body clears them. You might feel more tired, achy, bloated, foggy, or flu-like for a few days.

- Start one herb at a time at a low dose and build up over 1-2 weeks.
- Make sure you're having at least one bowel movement a day before you start.
- Drink plenty of water with electrolytes.
- Use a binder if your practitioner recommends one.
- Rest, sweat gently (a warm bath or walk), and support sleep.
- If you feel significantly worse or have a fever, pause and check in.

Remove Tips

- Most antimicrobial phases run 4-8 weeks. Then retest before deciding on another round.
- Rotate herbs in a second round, since microbes can adapt.
- Keep your gut-friendly eating going so you're not just feeding things back.

Want a protocol built for your results?

Choosing the right herbs, doses, and order is where most DIY protocols go sideways. In my Functional Medicine Care Program, I build your Remove phase around your actual test results. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Chapter 13

Replace and Reinoculate

Once the irritants are coming out, we make sure you can actually digest your food and bring the good bacteria back in.

Replace: Digestive Support

Support	What it does	Typical dose	Cautions
Digestive bitters	Wake up stomach acid, enzymes, and bile before you eat	A few drops or a spray 10-15 minutes before meals	Avoid with active ulcers
Digestive enzymes	Break down protein, fat, and carbs to ease bloating and improve absorption	One capsule with each main meal	Choose one without fillers you react to
Betaine HCl	Supports stomach acid for protein, iron, B12, and mineral absorption	One capsule (about 650 mg) with a protein meal, increased slowly under guidance	Do not use with ulcers or gastritis, or with NSAIDs or steroids like prednisone
Ox bile	Helps digest fats and absorb vitamins A, D, E, and K	125-500 mg with fatty meals	Especially helpful without a gallbladder
TUDCA	Thins and moves bile, supports the liver	250-500 mg daily	Check with your doctor if you have gallstones

The Betaine HCl Challenge

If your baking soda test or symptoms point to low stomach acid, a practitioner may walk you through a betaine HCl challenge. Only try this with guidance, and never with ulcers, gastritis, NSAIDs, or steroids.

1. Eat a meal with at least 4-6 ounces of protein.
2. Partway through the meal, take one capsule of betaine HCl (around 650 mg).
3. Notice how you feel. Warmth, burning, or heaviness means that dose is too much, so stop there. Drink water or a pinch of baking soda in water to neutralize it.
4. If you feel nothing, take two capsules at your next protein meal.

5. Keep adding one capsule per protein meal until you feel mild warmth, then drop back by one. That's your dose.
6. As your stomach heals and your acid production improves, you'll start to feel warmth at lower doses. That's your cue to taper down.

Bitters and Lifestyle Before Supplements

Before you reach for capsules, try the free tools: sit down to eat, take three slow breaths, smell and look at your food, and chew until it's mush. A few drops of bitters or a spoonful of apple cider vinegar in water 10-15 minutes before meals can be enough for many people.

Reinoculate: Probiotics

There are three main types, and the right one depends on your gut:

- **Lactobacillus and Bifidobacterium blends:** the most common and well studied. Multi-strain products support a more diverse microbiome. 10-100 billion CFU daily depending on the formula.
- **Saccharomyces boulardii:** a beneficial yeast. Helpful during antibiotics, with candida, and with loose stools.
- **Spore-based (Bacillus) probiotics:** survive stomach acid and are often better tolerated with SIBO or if regular probiotics make you bloat.

My personal favorite is Seed DS-01, a synbiotic (probiotic plus prebiotic) I recommend to most of my clients once we've cleared any overgrowth.

Probiotics Aren't the Answer to Everything

Probiotics are one of the most popular gut supplements, and they can be wonderful in the right situation. But they're not the answer to everything, and for some people they make things worse. Here's why:

- **They can fuel SIBO.** Many probiotics release bacteria in the small intestine, exactly where you don't want more. People with SIBO often feel more bloated, gassy, or foggy on probiotics. Some strains also make D-lactic acid, which has been linked to brain fog in people with SIBO.
- **They can add to an overgrowth you already have.** Some probiotics contain Streptococcus or Enterococcus strains. If your stool test shows these are already overgrown, you'd be adding more of what you don't need.
- **Some strains raise histamine.** If you have histamine symptoms, the wrong probiotic can make flushing, headaches, hives, or anxiety worse.
- **They don't fix the root cause.** A probiotic can't raise your stomach acid, clear H. pylori or parasites, restart a slow gut, or calm chronic stress. If those are driving your symptoms, a probiotic is a bandage at best.

- **They're visitors, not residents.** Most probiotics only help while you're taking them. Your food and gut environment decide which bacteria actually move in and stay.
- **They're not right for everyone.** People who are severely immunocompromised, critically ill, or have a central line should avoid them unless their doctor says otherwise.

This is exactly why I always test before starting a protocol. A stool test shows which bacteria are high, which are low, and whether there's an infection to clear first. Then we know whether a probiotic will help, which type to choose, and when to start it. Sometimes the best probiotic for you is no probiotic, at least not yet.

Choosing a Probiotic

If you have...	Consider	Why
Loose stools, recent antibiotics, candida, or Blastocystis	Saccharomyces boulardii	A beneficial yeast that isn't killed by antibiotics
SIBO or you bloat with regular probiotics	Spore-based (Bacillus) blend	Survives stomach acid and tends to bypass the small intestine
Histamine symptoms	Bifidobacterium-focused or spore-based	Some Lactobacillus strains can raise histamine
Constipation	Bifidobacterium lactis strains	Some have research for improving transit time
H. pylori	Lactobacillus reuteri and S. boulardii	Support for treatment and side effects
General maintenance after a gut protocol	A diverse, well-studied multi-strain synbiotic	Supports diversity once overgrowths are cleared
Low Akkermansia	An Akkermansia-containing probiotic, plus polyphenol foods	Supports the protective mucus layer

Probiotic Tips

- Start low, with a partial dose, and build up over 1-2 weeks.
- Give a new probiotic 4-8 weeks before deciding whether it helps.
- Some bloating in the first week is common. Bloating that keeps getting worse is a clue to check for SIBO or histamine.
- Probiotics are "visitors." They help while you take them. Your food is what grows your own long-term residents.

- Quality matters. Look for third-party testing, strains listed by their full name, and a guaranteed count through the expiration date.

> **Shop these supplements:** find the digestive support and probiotics I trust, including spore-based and S. boulardii options, in my online formulary: **shop.thyroidloveclub.com**

Reinoculate: Prebiotics and Fermented Foods

Prebiotic fiber feeds your beneficial bacteria, which then make butyrate and other short-chain fatty acids that calm inflammation.

- **Gentle option:** partially hydrolyzed guar gum (PHGG), 3-6 grams daily. Start low if you bloat easily or have SIBO.
- **Food sources:** green bananas, cooked and cooled potatoes and rice, asparagus, onions, garlic, and oats if tolerated.
- **Fermented foods:** sauerkraut, kimchi, coconut yogurt, kefir, and kombucha. Start with a forkful a day.

If fiber, fermented foods, or probiotics make you noticeably more bloated, that's a clue to test for SIBO before pushing through.

Polyphenols: Food for Your Best Bacteria

Polyphenols are the colorful compounds that give plants their deep reds, purples, and greens, plus the bitterness in tea, coffee, and dark chocolate. They are one of the most powerful and underused tools for a healthy gut. Think of them as prebiotics that come in color.

How Polyphenols Work in Your Gut

Only a small fraction of the polyphenols you eat are absorbed in your small intestine. Most of them travel down to your colon, where your gut bacteria get to work. That's where the magic happens:

- **They feed your best bacteria.** Polyphenols help beneficial species like Akkermansia, Bifidobacterium, and Lactobacillus grow.
- **They crowd out troublemakers.** Many polyphenols have gentle antimicrobial effects on opportunistic bacteria and yeast, without wiping out the good guys.
- **They protect the mucus layer.** By feeding Akkermansia, polyphenols help maintain the protective layer that keeps bacteria away from your gut lining.
- **They calm inflammation.** Polyphenols and the compounds your bacteria make from them help lower inflammation and support a tighter gut barrier.

- **Your bacteria unlock them.** Your microbiome turns polyphenols into new, active compounds. For example, ellagitannins from pomegranate, berries, and walnuts can become urolithin A, and lignans from flax become enterolactone, which supports healthy estrogen balance. Not everyone makes these compounds, and a healthier, more diverse microbiome tends to make more of them.

It's a two-way street: polyphenols help build a healthier microbiome, and a healthier microbiome gets more benefit from polyphenols.

The Best Polyphenol Foods

Food	Key polyphenols	Gut highlights
Pomegranate (seeds or 100% juice)	Ellagitannins, punicalagins	One of the strongest boosters of Akkermansia. Converted to urolithin A
Berries (blueberries, blackberries, raspberries, strawberries)	Anthocyanins, ellagitannins	Feed Bifidobacterium and support the gut lining. Frozen counts
Cranberries (unsweetened)	Proanthocyanidins	Support Akkermansia and help keep harmful bacteria from sticking to tissues
Extra virgin olive oil	Hydroxytyrosol, oleocanthal	Anti-inflammatory and feeds beneficial bacteria. Choose a fresh, peppery oil
Green tea and matcha	Catechins (EGCG)	Feeds Akkermansia and Bifidobacterium. Watch caffeine with Graves'
Dark chocolate and cacao (70% or higher)	Flavanols	Feeds Bifidobacterium and Lactobacillus
Red onions, capers, apples (with peel)	Quercetin	Calms mast cells and histamine
Herbs and spices (cloves, oregano, rosemary, thyme, turmeric, cinnamon)	Many	Gram for gram, some of the richest polyphenol sources on the planet
Walnuts, pecans, and hazelnuts	Ellagitannins	Support butyrate producers. Converted to urolithin A
Ground flaxseed	Lignans	Converted to enterolactone for estrogen balance
Artichokes and dark leafy greens	Many, plus fiber	Feed bacteria twice: polyphenols and prebiotic fiber

Food	Key polyphenols	Gut highlights
Purple and red vegetables (red cabbage, beets, purple carrots, radicchio)	Anthocyanins, betalains	Antioxidant and anti-inflammatory
Coffee	Chlorogenic acids	Feeds beneficial bacteria. Keep it 30-60 minutes away from levothyroxine

Eat the Rainbow, Literally

Each color brings a different family of polyphenols, and each feeds different bacteria. Aim for at least 3 colors at every meal.

Color	Foods	What it brings
Red	Pomegranate, strawberries, raspberries, red cabbage, beets	Ellagitannins and anthocyanins
Orange and yellow	Turmeric, carrots, sweet potato, citrus	Curcumin, carotenoids, and citrus flavonoids
Green	Green tea, olive oil, herbs, leafy greens, artichoke	Catechins, hydroxytyrosol, and many more
Blue and purple	Blueberries, blackberries, purple carrots, plums	Anthocyanins
Brown and tan	Cacao, coffee, walnuts, flax, cinnamon, cloves	Flavanols, lignans, and chlorogenic acids
White	Garlic, onions, cauliflower, mushrooms	Organosulfur compounds and quercetin

Easy Ways to Add More

- Add a handful of frozen berries to your breakfast or smoothie.
- Sprinkle pomegranate seeds on salads, yogurt, or roasted veggies.
- Use extra virgin olive oil generously on cooked and raw foods.
- Cook with fresh herbs and spices every day. A pinch of cinnamon, cloves, or rosemary counts.
- Swap one coffee for green tea or matcha (if caffeine is okay for you).
- Have 1-2 squares of 70%+ dark chocolate after dinner.
- Keep walnuts and pumpkin seeds on hand for snacks.
- Mix 1-2 tablespoons of ground flax into smoothies, oats, or chia pudding.

A Polyphenol-Rich Day

Meal	Example
Breakfast	Smoothie with blueberries, ground flax, collagen, cinnamon, and a handful of spinach
Lunch	Big salad with arugula, red cabbage, pomegranate seeds, walnuts, salmon, and an olive oil and lemon dressing
Snack	Green tea and 1-2 squares of dark chocolate
Dinner	Chicken roasted with rosemary, thyme, and garlic, plus roasted beets and purple carrots drizzled with olive oil

Polyphenol Supplements: Use With Care

Food comes first, because whole foods bring fiber and a mix of compounds your bacteria love. Concentrated supplements can be helpful in the right situations, but they are much stronger than food:

- **Pomegranate or cranberry extract:** sometimes used to support Akkermansia and the mucus layer.
- **Quercetin:** helpful for histamine and mast cell reactions, and being studied for TED (Chapter 14).
- **Curcumin:** anti-inflammatory support. Check with your practitioner if you take blood thinners or have gallstones.
- **Resveratrol:** antioxidant support. Can interact with blood thinners.
- **Green tea extract:** high doses have been linked to liver injury, and the caffeine can worsen palpitations with Graves'. Enjoy the tea instead.

Very high doses of some concentrated flavonoids may affect thyroid function, so stick with food amounts or use supplements with guidance.

A Few Gentle Notes

- **Histamine sensitive?** Some polyphenol foods like strawberries, citrus, spinach, and fermented teas are higher in histamine or can trigger it. Lean on blueberries, apples, pears, herbs, and olive oil while you calm things down.
- **SIBO or bloating?** Start slow, since some polyphenol-rich foods are also high in FODMAPs. Berries, kiwi, citrus, herbs, olive oil, and green tea are usually well tolerated.
- **On thyroid medication?** Keep coffee, tea, and supplements away from your levothyroxine dose (see the timing chart in Chapter 6).

Polyphenol Checklist

- [ ] I eat at least 3 colors at most meals
- [ ] I have berries or pomegranate most days
- [ ] I use extra virgin olive oil daily
- [ ] I cook with herbs and spices every day
- [ ] I enjoy green tea, coffee, or dark chocolate in amounts that work for my body
- [ ] I'm working toward 30 different plants a week

Chapter 14

Repair

Repair gives your gut lining the building blocks to heal and seal. This is where many people notice the biggest shift in energy, skin, and food reactions.

Nutrient	What it does	Typical dose	Notes
L-glutamine	Main fuel for the cells lining your gut. Helps rebuild and tighten the barrier	5-15 grams daily as a powder, in divided doses	Start at the low end
Butyrate	Fuels colon cells, tightens the barrier, and helps create calming regulatory T cells	300-600 mg daily as tributyrin or sodium/ calcium butyrate	One of my favorites for autoimmunity
Colostrum	Immunoglobulins and growth factors that support the lining and bind harmful bacteria and toxins	1-2 grams daily on an empty stomach	Contains dairy proteins
Zinc carnosine	Sticks to the stomach and gut lining to support repair and protect against H. pylori damage	75 mg twice daily	Provides about 32 mg zinc total, so count it toward your daily zinc
DGL (licorice)	Coats and soothes the stomach, helps with reflux	380-760 mg chewed before meals	The blood pressure-raising compound is removed
Slippery elm or marshmallow root	Coat and soothe an irritated lining	500-1,000 mg, or 1 tablespoon of powder in water	Separate from medications by 2 hours
Aloe vera (inner leaf)	Soothes inflammation	1-2 ounces of juice daily	Choose a decolorized, inner-leaf product
Collagen or bone broth	Glycine, proline, and glutamine for rebuilding the lining	10-20 grams collagen or 1-2 cups broth daily	Easy to add to coffee, tea, or soups
Quercetin	Calms mast cells and histamine reactions in the gut. Also being studied for TED	500-1,000 mg daily, often with vitamin C or bromelain	Check interactions if on multiple medications

Combination Formulas

Many gut repair powders combine glutamine, zinc carnosine, DGL, aloe, and soothing herbs in one scoop. This makes the Repair step simpler and often more affordable than buying each one separately. My two favorite glutamine blends are Glutashield and GI Revive. I loooove Glutashield. My clients are on it and love it, and it's usually the first repair product I reach for. Find both in my online formulary.

> **Shop these supplements:** Glutashield, GI Revive, and the other repair nutrients in this chapter are in my online formulary: **shop.thyroidloveclub.com**

Protect the Mucus Layer

On top of your gut lining sits a protective layer of mucus that keeps bacteria at a safe distance. When it thins, bacteria get too close to the lining and inflammation rises. You can support it with:

- **Polyphenol foods** that feed Akkermansia, the bacteria that maintains the mucus layer
- **Fiber**, since bacteria eat the mucus layer when they're starved of fiber
- **Avoiding emulsifiers** found in many processed foods (like polysorbate 80 and carboxymethylcellulose)
- **Okra, chia, flax, and aloe**, which add soothing mucilage

A Simple Daily Repair Routine

This is one example of how repair can fit into a normal day. Your practitioner will adjust it to you.

Time	What
Morning, empty stomach	L-glutamine in water, or colostrum
Breakfast	Collagen in coffee or a smoothie, plus protein and veggies
Before lunch	DGL chewable if you have reflux
Lunch and dinner	Zinc carnosine with meals, butyrate with your largest meal
Afternoon snack or tea	Bone broth or a cup of marshmallow root tea (away from medications)
Evening	A second dose of glutamine if you're on a higher dose

Start with one or two of these, not all at once. Glutamine, collagen, and zinc carnosine are my most common starting trio.

Is Glutamine Right for Everyone?

Glutamine is safe for most people, but a few should be cautious: anyone with liver disease, a history of seizures, or a strong reaction to MSG. If glutamine makes you feel wired or anxious, lower the dose or try a combination formula instead.

Don't Forget Your Nutrient Foundations

Your gut lining also depends on vitamin D, vitamin A, zinc, and omega-3s. If your nutrient labs from Chapter 9 came back low, those belong in your repair phase too. With zinc, if you take more than 25 mg daily long term, pair it with 1-2 mg of copper.

Chapter 15

Rebalance

Rebalance is what keeps your results. Supplements open the door, but your daily habits decide whether the gut stays healthy once you stop them.

Daily Gut Habits

- **Eat slowly and chew thoroughly.** Digestion starts in your mouth.
- **Eat sitting down, in a calm state.** Take three deep breaths before your first bite to switch into "rest and digest."
- **Walk 10-15 minutes after meals.** It helps motility and keeps blood sugar steady.
- **Leave 3-4 hours between meals** when you can. This lets your gut's natural "cleaning wave" (the migrating motor complex) sweep through. Constant snacking keeps it from doing its job.
- **Support your vagus nerve** with deep breathing, humming, gargling, or cold water on your face.
- **Prioritize 7-9 hours of sleep.** Your microbiome follows a daily rhythm too.
- **Aim for 30 different plant foods per week** to grow microbiome diversity. Herbs, spices, nuts, and seeds all count.
- **Limit alcohol, NSAIDs, and unnecessary antibiotics**, which all damage the gut lining and microbiome.

Build a Gut-Friendly Plate

- **Protein:** a palm-sized portion at every meal, like wild fish, pasture-raised eggs, grass-fed meat, or poultry.
- **Non-starchy veggies:** half your plate, cooked if raw veggies bloat you.
- **Healthy fats:** olive oil, avocado, coconut, or ghee if tolerated.
- **Gut-loving extras:** bone broth, a forkful of fermented veggies, and fresh herbs.
- **Slow carbs as tolerated:** sweet potato, squash, or cooked and cooled rice.

Chapter 16 goes deep on eating for your gut, including elimination and reintroduction, SIBO, candida, and histamine. My Thyroid Happy Diet guide also has an AIP-inspired shopping list and recipes.

Stress Is a Gut Issue

Chronic stress raises cortisol, loosens tight junctions, lowers stomach acid, and lowers secretory IgA. You can take every supplement in this guide and still feel stuck if your nervous system never gets a break. Even five minutes a day of breathwork, a walk outside, or journaling counts.

Your Nervous System Toolkit

Your gut can only "rest and digest" when your body feels safe. Pick two or three of these and do them daily:

- **Physiological sigh:** two short inhales through your nose, then a long, slow exhale through your mouth. Repeat 3-5 times.
- **Box breathing:** in for 4, hold for 4, out for 4, hold for 4.
- **Humming, singing, or gargling:** all stimulate the vagus nerve, which runs right through your throat.
- **Cold water on your face** for 15-30 seconds.
- **A 10-minute walk outside**, ideally in morning light.
- **Legs up the wall** for 5-10 minutes before bed.
- **Journaling or a brain dump** before bed so your mind can rest.
- **Saying no.** Boundaries are a gut health practice too.

> **Community is medicine too.** Feeling seen and supported calms your nervous system in a way no supplement can. Connecting with others who understand was one of the biggest turning points in my own healing. You're always welcome at our free monthly Thyroid Love Club support group: **support.thyroidloveclub.com**

Movement for a Healthy Gut

- **Walking after meals:** even 10 minutes improves motility and blood sugar.
- **Strength training 2-3 times a week:** builds muscle that helps you handle blood sugar and supports bones, which matters with Graves'.
- **Gentle yoga and twists:** can help with gas and constipation.
- **Don't overdo it:** intense exercise without enough recovery raises cortisol and gut permeability. If you're hyperthyroid, keep exercise gentle until your heart rate and levels are stable, and follow your doctor's guidance.

Sleep and Your Microbiome

Your gut bacteria have their own daily rhythm, and they follow yours. Poor or irregular sleep reduces diversity and raises inflammation.

- Go to bed and wake up at about the same time every day.
- Get morning light within an hour of waking.
- Stop eating 2-3 hours before bed so your gut can do its overnight cleanup.
- Keep your room cool, dark, and quiet.
- If you wake at 2-4am, look at blood sugar and stress. A small protein and fat snack before bed may help.

Blood Sugar Balance

Blood sugar swings feed dysbiosis, weaken the gut lining, and stress your thyroid.

- Build every meal around protein, fiber, and healthy fat.
- Eat a protein-forward breakfast within an hour or two of waking.
- Pair carbs with protein, and eat veggies and protein first.
- Walk after meals.
- If you've worn a continuous glucose monitor, notice which meals spike you. It's one of the most eye-opening tools I use with clients.

Your Environment

- **Filter your water.** Chlorine and other chemicals can affect the microbiome.
- **Check for mold** if you've had water damage, a musty smell, or symptoms that improve when you travel.
- **Swap plastics for glass and stainless steel**, especially for hot foods.
- **Spend time outside, in dirt and nature.** Gardening, hiking, and pets all expose you to a wider variety of microbes.

Chapter 16

Eating for Your Gut

There is no one perfect gut diet. The right way to eat depends on what's going on in your gut right now, and it should change as you heal. The goal is always the widest, most varied diet your body can comfortably handle.

My Core Principles

- **Protein at every meal**, since your gut lining and thyroid both need it. Aim for about half your body weight (in pounds) in grams of protein each day. For example, if you weigh 140 pounds, aim for about 70 grams.
- **Color and variety**, working toward 30 different plants a week.
- **Cooked before raw** when your gut is inflamed or bloated.
- **Remove temporarily, reintroduce intentionally.** Restriction is a tool, not a lifestyle.
- **With Graves' or Hashimoto's, watch iodine, but don't cut it out.** Concentrated sources like kelp, seaweed snacks, sea moss, and iodine supplements can flare both Graves' and Hashimoto's, so skip those. But your thyroid still needs some iodine to work, and fish and seafood are healthy, nourishing foods worth keeping in your diet.
- **Never under-eat.** Under-eating stresses your thyroid and slows your gut.

My Favorite Foundation: The Mediterranean Diet

If I had to pick one way of eating to build a healthy gut for life, it would be the Mediterranean diet. It's one of the most studied eating patterns in the world, and research links it to a more diverse microbiome, more short-chain fatty acids like butyrate, lower inflammation, and better heart, brain, and metabolic health. It's also delicious, flexible, and easy to keep up, which matters more than any perfect plan.

The Mediterranean pillars:

- **Extra virgin olive oil** as your main fat, used generously
- **Vegetables at every meal**, in every color
- **Fish and seafood** two to three times a week, especially salmon, sardines, and mackerel for omega-3s
- **Fruit**, especially berries, citrus, and pomegranate
- **Nuts and seeds**, like walnuts, almonds, pumpkin seeds, and flax

- **Legumes**, like lentils and chickpeas, if you tolerate them
- **Herbs and spices** like oregano, rosemary, thyme, garlic, and basil
- **Poultry, eggs, and some fermented dairy** in moderation, if tolerated
- **Red meat and sweets** occasionally, not daily
- **Meals shared slowly**, with people you love

How I adapt it for the gut and thyroid:

- **Make it gluten-free.** Swap wheat bread and pasta for quinoa, rice, potatoes, sweet potatoes, or gluten-free grains.
- **Go easy on legumes during SIBO or a flare,** then bring them back slowly. They're great fuel for good bacteria once your gut is calmer.
- **Keep the fish.** It's a wonderful source of protein, omega-3s, selenium, and a moderate amount of iodine. Just skip concentrated seaweed and kelp.
- **Adjust for your phase.** During an elimination diet, AIP, or a SIBO protocol, use the Mediterranean pattern as your guide while following the specific food swaps in this chapter.
- **Hit your protein target**, about half your body weight in grams, by building each meal around fish, eggs, poultry, or meat.

A Mediterranean gut-friendly plate: half colorful vegetables drizzled with olive oil, a palm or more of fish or other protein, a small portion of whole-food carbs like quinoa or sweet potato, and a sprinkle of herbs, nuts, or seeds.

The Elimination and Reintroduction Approach

An elimination diet is still the gold standard for finding your food triggers.

Step 1: Remove for 30 days (up to 60–90 days with autoimmunity). The most common triggers:

- Gluten
- Dairy
- Corn
- Soy
- Eggs (if suspected)
- Refined sugar and alcohol
- Any food that lit up on your sensitivity testing

A stricter version, the Autoimmune Protocol (AIP), also removes grains, legumes, nightshades (tomatoes, peppers, potatoes, eggplant), nuts, and seeds. It can be very helpful for stubborn autoimmunity, but it isn't necessary for everyone.

Step 2: Reintroduce one food at a time.

1. Pick one food. Eat a small amount on day 1, in the morning.
2. If you feel fine after a few hours, have a larger portion later that day.
3. Then stop eating it and wait 3 days. Some reactions are delayed.
4. Watch for bloating, stool changes, reflux, headaches, joint pain, skin flares, fatigue, mood changes, or sleep changes.
5. No reaction: add it back. Reaction: take it out again and retry in 3-6 months.
6. Record everything in the Food Reintroduction Log.

Start with the foods you miss most and are least likely to react to, like egg yolks or seeds, before trying gluten or dairy.

Eating for SIBO

While you're treating SIBO, a temporary lower-FODMAP approach can ease bloating. Here's what that means.

What are FODMAPs? FODMAPs are a group of short-chain carbohydrates (sugars and fibers) that aren't fully absorbed in the small intestine. They pull water into the gut and get fermented by bacteria, which makes gas. The name is an acronym for Fermentable Oligosaccharides, Disaccharides, Monosaccharides, And Polyols:

Type	What it is	Common sources
Oligosaccharides	Fructans and GOS	Wheat, rye, onion, garlic, beans, lentils
Disaccharides	Lactose	Milk, soft cheeses, ice cream
Monosaccharides	Excess fructose	Apples, pears, mango, honey, agave
Polyols	Sugar alcohols like sorbitol, mannitol, and xylitol	Stone fruits, mushrooms, cauliflower, sugar-free gum and candy

FODMAPs aren't "bad" foods. In a healthy gut, they travel down to the colon and feed your beneficial bacteria. But with SIBO, bacteria in the small intestine get to them first, which is why you bloat within an hour of eating them. Lowering FODMAPs for a short time starves the overgrowth and calms symptoms while you treat the root cause.

Higher FODMAP (limit for now)	Lower FODMAP (choose instead)
Garlic and onion	Garlic-infused oil, green tops of scallions, chives
Apples, pears, mango, watermelon	Berries, kiwi, citrus, pineapple, unripe banana
Beans and lentils	Small portions of canned, rinsed lentils if tolerated
Wheat and rye	Rice, quinoa, oats, sourdough spelt if tolerated
Cauliflower, mushrooms, asparagus	Zucchini, carrots, spinach, bell pepper, green beans
Honey, agave, sugar alcohols	Maple syrup in small amounts

Use low FODMAP for 2-6 weeks during treatment, then reintroduce. Staying on it long term starves your good bacteria too.

Other SIBO eating tips:

- **Space your meals 3-4 hours apart** and avoid grazing, so your gut's cleaning wave can sweep through.
- **Choose cooked vegetables over raw** while symptoms are active. They're easier to break down.
- **Keep portions moderate.** Even low-FODMAP foods can cause bloating in large amounts.
- **Prioritize protein and healthy fats**, which feed the overgrowth less than carbs.
- **Sip ginger or peppermint tea** after meals for gas and motility (skip peppermint if you have reflux).
- **Other approaches your practitioner may suggest:** the SIBO Specific Food Guide, a bi-phasic diet, or an elemental diet, a liquid formula used for 2-3 weeks under supervision that starves the bacteria while still feeding you.

Eating for Candida

Yeast feeds on sugar, so food is a big part of getting candida under control. But the goal is to starve the yeast, not you. Pair these food changes with the antifungal support in Chapter 12 for the best results, usually for 4-8 weeks.

Limit for now:

- Added sugar in all forms, including honey, maple syrup, agave, and coconut sugar
- Refined flour, white bread, pastries, crackers, and cereals
- Alcohol, especially beer and wine
- Fruit juice, dried fruit, and very sweet fruits like mango, grapes, and bananas
- Sweetened drinks, flavored yogurts, and most packaged snacks

- Foods prone to mold, like peanuts, pistachios, and old nuts, plus leftovers older than 2-3 days

Enjoy:

- Plenty of non-starchy vegetables, especially leafy greens, broccoli, zucchini, asparagus, and cucumbers
- Quality protein at every meal: fish, eggs, poultry, and grass-fed meat
- Healthy fats like olive oil, avocado, coconut oil, and ghee
- Low-sugar fruits like berries, lemon, lime, and green apple, in small portions
- Moderate whole-food carbs like sweet potato, squash, quinoa, and rice. Going very low carb or zero carb can stress your thyroid and adrenals.
- Nuts and seeds that are fresh and well stored

Natural antifungal foods to add: garlic, coconut oil, oregano, thyme, cinnamon, cloves, ginger, turmeric, and apple cider vinegar.

A few tips:

- **Expect some die-off.** You may feel a little worse for a few days at the start. Go slow, drink water, and keep your bowels moving.
- **Watch fermented foods.** Some people with candida tolerate them well, and others flare. Start with a forkful and see how you feel.
- **Cravings fade.** Sugar cravings are often strongest in the first 1-2 weeks, then drop off as the yeast dies back.
- **Reintroduce gradually.** Once symptoms settle, bring back fruit and whole grains slowly rather than returning to sugar overnight.

Eating for Histamine

A lower-histamine diet is a short-term reset of 2-4 weeks while you address the root cause.

Higher histamine (limit for now)	Lower histamine (choose instead)
Leftovers, especially meat	Freshly cooked or quickly frozen meals
Aged cheese, cured meats, smoked fish	Fresh meat, poultry, and fresh-caught fish
Fermented foods, kombucha, vinegar	Fresh herbs, lemon juice
Bone broth simmered for many hours	Short-cooked meat stock
Wine, beer, and champagne	Herbal tea and water
Spinach, tomatoes, eggplant, avocado	Zucchini, carrots, cucumber, sweet potato, leafy lettuce
Citrus, strawberries, pineapple	Apples, pears, blueberries, mango

Food as Medicine: A Food-First Gut Protocol

You can support every step of the 5R with food alone, and food is the foundation of everything I do. But I want to be honest with you: a food-only protocol works much more slowly and gently than targeted supplements and herbs. Food contains far smaller amounts of active compounds than a concentrated supplement. A clove of garlic is not the same as a standardized allicin capsule, and a cup of broth is not the same as a therapeutic dose of glutamine.

That means a food-first approach often takes months instead of weeks, and it usually isn't strong enough on its own to clear confirmed infections like H. pylori, parasites, or significant SIBO. I think of it as an adjunct: something that supports and strengthens a targeted protocol, not a replacement for one.

Food as medicine works best:

- Alongside a targeted protocol, to boost and speed up your results
- After a protocol, to maintain your results long term
- For mild symptoms while you wait for test results
- When supplements aren't an option for you right now (always check with your provider, especially during pregnancy)

5R step	Food as medicine	How to use it
Remove	Garlic, onions (if tolerated), oregano, thyme, cloves, cinnamon, ginger, turmeric, coconut oil, extra virgin olive oil, pumpkin and papaya seeds, unsweetened cranberry, apple cider vinegar, green tea	Cook with fresh garlic, herbs, and spices every day. Snack on pumpkin seeds. Cut out sugar, alcohol, and your trigger foods
Replace	Bitter greens (arugula, dandelion, radicchio, endive), lemon, apple cider vinegar, ginger, fresh pineapple and papaya, beets, artichokes	Start meals with a small bitter salad or apple cider vinegar in water. Enjoy pineapple or papaya after protein meals. Eat beets and artichokes for bile flow
Reinoculate	Sauerkraut, kimchi, kefir, plain or coconut yogurt, miso, kombucha, plus prebiotic foods like green bananas, cooked and cooled potatoes and rice, asparagus, leeks, oats, and ground flax	A forkful of fermented veggies daily. Add one prebiotic food at a time and build up. Go slowly with SIBO or histamine issues
Repair	Bone broth, collagen, gelatin, cabbage, okra, chia, aloe, oysters, pumpkin seeds, liver, sweet potatoes, carrots, wild salmon, sardines, ghee, slippery elm or marshmallow root tea	1-2 cups of broth daily, collagen in coffee or smoothies, fatty fish 2-3 times a week, cabbage in soups or as sauerkraut
Rebalance	Mediterranean-style meals, protein at every meal, magnesium-rich foods (leafy greens, pumpkin seeds, cacao), chamomile or lemon balm tea	Eat slowly and sitting down, leave 3-4 hours between meals, and aim for 30 plants a week

What to expect: most people notice gentle improvements in digestion within 4-8 weeks, but deeper changes often take 3-6 months or longer. If you're not seeing progress after 8-12 weeks, or your symptoms are significant, that's your sign to test and add targeted support.

My honest take: food is medicine, but it isn't always enough medicine. The fastest, most lasting results come from combining both: test to find what's really going on, use targeted support to clear it, and let food carry you the rest of the way.

A Sample Gut-Friendly Day

Meal	Example
Wake up	Warm water with lemon, then levothyroxine on its own if you take it
Breakfast	Two eggs or a protein smoothie, sautéed greens, and berries
Lunch	Big salad or bowl with salmon, roasted sweet potato, cucumber, olive oil, and pumpkin seeds
Afternoon	Bone broth or a handful of nuts with a kiwi
Dinner	Grass-fed burger in lettuce wraps with roasted carrots and zucchini
Evening	Ginger or chamomile tea, and a 3-hour gap before bed

Gut-Loving Recipes

Simple Healing Broth (makes about 8 cups)

1. Add 2-3 pounds of chicken bones or a whole chicken carcass to a slow cooker or Instant Pot.
2. Add 1 onion, 2 carrots, 2 celery stalks, a thumb of ginger, a few garlic cloves, and 2 tablespoons of apple cider vinegar.
3. Cover with filtered water.
4. Slow cook 12-24 hours, or pressure cook 2-3 hours.
5. Strain, season with sea salt, and store in the fridge for up to 5 days or freeze.

If you're histamine sensitive, use the pressure cooker method and freeze it in portions right away.

Gut Repair Smoothie (1 serving)

- 1 cup unsweetened coconut or almond milk
- 1 scoop collagen or clean protein powder
- 1/2 cup frozen blueberries
- 1/4 unripe banana or 1/2 cup frozen zucchini
- 1 tablespoon ground flax
- 1 scoop L-glutamine powder or your glutamine blend, like Glutashield (if you're using it)
- A handful of spinach (skip if histamine sensitive)

Blend and enjoy right away.

Ginger Turmeric Rice Porridge (2 servings)

1. Simmer 1/2 cup white rice in 3 cups of broth with 1 tablespoon grated ginger and 1/2 teaspoon turmeric for 30-40 minutes, stirring often, until creamy.
2. Stir in shredded chicken and chopped greens for the last 5 minutes.
3. Finish with a pinch of black pepper, sea salt, and a drizzle of olive oil.

This is my go-to on flare days, after food poisoning, or during die-off.

Daily Digestive Tea

Steep 1 teaspoon each of fennel seed and fresh ginger, plus a few peppermint leaves, in hot water for 10 minutes. Sip after meals for gas and bloating. Skip the peppermint if you have reflux.

Gut-Friendly Grocery Basics

- **Protein:** wild salmon and sardines, pasture-raised eggs, grass-fed beef, organic chicken
- **Vegetables:** zucchini, carrots, sweet potatoes, squash, leafy greens, cucumbers, crucifers if tolerated
- **Fruit:** berries, kiwi, pomegranate, green-tipped bananas
- **Fats:** extra virgin olive oil, avocado oil, coconut oil, ghee if tolerated
- **Gut extras:** bone broth, collagen, ground flax, chia, fresh ginger, fennel, fermented veggies if tolerated
- **Pantry:** white or brown rice, quinoa, gluten-free oats, pumpkin seeds, herbal teas

Chapter 17

Your Sample 12-Week Gut Roadmap

This is how I structure gut support with my 1:1 clients, in three phases. Your timeline may be shorter or longer depending on what your testing finds.

	Phase 1: Stabilize and Investigate	Phase 2: Heal the Gut and Support the Thyroid	Phase 3: Rebuild and Reintroduce
When	Weeks 1-4	Weeks 5-10	Weeks 11-12 and beyond
Focus	Calm things down and get answers	Remove, then repair	Restore diversity and expand your diet
5R steps	Replace + Rebalance	Remove + Repair	Reinoculate + Rebalance
Food	Pull back on gluten, alcohol, sugar, and your top suspects	Stay consistent with your gut-friendly plate	Reintroduce one food every 3-4 days and track reactions
Supplements	Digestive support (bitters, enzymes, or betaine HCl as needed) and nutrient basics	Targeted antimicrobials based on testing, then gut repair nutrients	Probiotic, prebiotic fiber, and continued repair as needed
Testing	Stool test, plus SIBO, OAT, or bloodwork as your symptoms point to	Track symptoms weekly	Retest stool and thyroid antibodies
Habits	Walk after meals, 3 breaths before eating, sleep routine	Keep bowels moving daily, support die-off	Build toward 30 plants per week

Week by Week

Weeks 1–2: Foundations

- [ ] Complete the checklists in Chapter 7 and the baking soda test
- [ ] Order your first test(s) based on Chapter 9
- [ ] Fill in Week 1 of your Gut Tracker
- [ ] Start one daily habit: three breaths before meals and a walk after
- [ ] Make sure you're having a daily bowel movement (Chapter 22 if not)
- [ ] Fix your thyroid medication timing (Chapter 6)

Weeks 3–4: Calm and Prepare

- [ ] Begin your elimination diet (Chapter 16)
- [ ] Add digestive support if needed: bitters, enzymes, or betaine HCl with guidance
- [ ] Start a gentle repair nutrient like collagen or glutamine
- [ ] Review your test results and build your Remove plan with your practitioner

Weeks 5–8: Remove

- [ ] Start antimicrobials one at a time, at a low dose
- [ ] Add biofilm support or binders if recommended
- [ ] Track die-off and adjust the pace
- [ ] Keep eating the rainbow and keep the bowels moving

Weeks 9–10: Repair and Reinoculate

- [ ] Finish antimicrobials and shift into full Repair
- [ ] Introduce the probiotic that fits your gut (Chapter 13)
- [ ] Add prebiotic fiber slowly, like PHGG or green banana
- [ ] Add a nervous system practice you'll actually keep

Weeks 11-12: Rebuild and Reintroduce

- [ ] Reintroduce one food every 3-4 days using the log
- [ ] Work toward 30 plants per week
- [ ] Retest your stool and thyroid antibodies with your practitioner
- [ ] Compare your Gut Tracker scores to Week 1
- [ ] Decide on your next phase: maintenance, a second Remove round, or deeper work on a remaining root cause

What Comes After 12 Weeks

For many people, 12 weeks brings a big improvement in digestion. Antibodies, TED, and long-standing infections often take 6 months or more. After your first round, most people move into a maintenance rhythm: a solid food foundation, a probiotic and repair nutrients as needed, daily stress and sleep practices, and retesting every 6-12 months or when symptoms return.

Want me to walk this roadmap with you?

My Functional Medicine Care Program turns this 12-week plan into one built just for you, with testing, a custom protocol, and check-ins along the way. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

How to Know It's Working

- Less bloating and more regular, comfortable bowel movements
- More energy, especially in the afternoon
- Clearer skin and fewer food reactions
- Nutrient levels that finally start to rise
- Thyroid antibodies trending down over time
- For TED, calmer, less puffy or gritty eyes

Antibodies and eye changes often take longer to shift than digestion. Give it time, and track it all so you can see the trend.

Part Four

Beyond the Thyroid

18 Your Gut and Your Whole Body

19 Perimenopause, Menopause, and the Estrobolome

20 Low Iron, Ferritin, and Your Gut

21 Insulin Resistance, Blood Sugar, and Your Gut

22 Constipation, Diarrhea, and Your Bowels

Chapter 18

Your Gut and Your Whole Body

You don't need a thyroid diagnosis for your gut to matter. Your gut talks to your skin, brain, hormones, metabolism, and immune system every day. If you've been told your symptoms are "just stress" or "just getting older," your gut is worth a closer look.

The Gut-Brain Axis: Mood, Anxiety, and Brain Fog

Your gut and brain are wired together through the vagus nerve, your immune system, and the chemical messengers your gut bacteria make.

- **Serotonin:** most of your body's serotonin is made in the gut. It shapes motility, mood, and sleep.
- **GABA:** some gut bacteria make GABA, your calming neurotransmitter.
- **Inflammation:** LPS from a leaky gut can reach the brain and is linked to low mood, fatigue, and brain fog.
- **Stress loops:** anxiety changes how your gut moves and feels, and an upset gut sends distress signals back to your brain.

If your anxiety, low mood, or brain fog flares alongside bloating, constipation, or food reactions, that's a sign the two are connected. Gut support is never a substitute for mental health care, but it can be a powerful part of it.

The Gut-Skin Axis: Acne, Eczema, Rosacea, and Hair

Your skin often shows what's happening inside.

- **Acne:** linked to blood sugar swings, dysbiosis, and estrogen recycling.
- **Eczema:** often travels with leaky gut, food sensitivities, and histamine.
- **Rosacea:** has been linked to SIBO and H. pylori in research, and some people see their skin improve after SIBO treatment.
- **Hair thinning:** low iron, zinc, protein, and B12 absorption, plus inflammation, all affect hair (Chapter 20 covers iron).

Energy and Fatigue

You can eat well and still run on empty if you can't absorb your food. Low stomach acid, SIBO, and gut inflammation drain iron, B12, magnesium, and protein. Leaky gut adds low-grade inflammation on top. Many people who say "I'm tired all the time" have a gut piece to their fatigue.

Weight, Cravings, and Blood Sugar

- Your microbiome affects how many calories you harvest from food, how hungry you feel, and how your body handles blood sugar.
- Dysbiosis and LPS are linked to insulin resistance.
- Yeast overgrowth can drive intense sugar cravings.
- Constipation and bloating can add pounds on the scale and inches at the waist that aren't fat at all.

If weight won't budge despite doing "everything right," look at blood sugar, sleep, stress, thyroid, and the gut together. Chapter 21 goes deep on insulin resistance.

Immunity, Allergies, and Histamine

About 70% of your immune tissue lives around your gut. A healthy gut helps your immune system tell the difference between a real threat and harmless things like pollen or food. When the gut is inflamed or leaky, seasonal allergies, histamine reactions, and frequent colds often get worse.

Other Autoimmune Conditions

The same triad from Chapter 1 (genes, a leaky gut, and a trigger) applies to autoimmunity anywhere in the body. Gut changes have been studied in rheumatoid arthritis, lupus, psoriasis, multiple sclerosis, type 1 diabetes, celiac disease, and inflammatory bowel disease. Having one autoimmune condition raises the risk of another, which is one more reason to care for your gut early.

Your Joints

Joint aches that move around, morning stiffness, or pain that flares after certain foods can be signs of gut-driven inflammation. Some gut bacteria have also been linked to inflammatory arthritis. If you have swollen, hot, or persistently painful joints, see your doctor to rule out an inflammatory arthritis first.

Signs Your Gut May Be Behind "Non-Gut" Symptoms

- [ ] Brain fog, anxiety, or low mood that changes with what you eat
- [ ] Skin flares like acne, eczema, rosacea, or hives
- [ ] Fatigue that sleep doesn't fix
- [ ] Sugar cravings that feel out of your control
- [ ] Allergies or histamine reactions that are worse than they used to be
- [ ] Joint aches or headaches with no clear cause
- [ ] Low iron, B12, or vitamin D that won't rise
- [ ] More than one autoimmune condition, or a strong family history of them

If you checked three or more, start with the checklists in Chapter 7 and the testing guide in Chapter 9.

Chapter 19

Perimenopause, Menopause, and the Estrobolome

Perimenopause is not just "hot flashes later." It can start in your late 30s or 40s and last 4 to 10 years, and your gut plays a bigger role in how it feels than most women are ever told.

What's Actually Happening

- **Progesterone drops first.** Ovulation becomes less regular, so you make less progesterone, your calming, sleep-supporting hormone.
- **Estrogen swings.** It doesn't decline in a smooth line. It spikes and crashes, sometimes higher than it was in your 20s, then suddenly low.
- **Menopause** is one full year without a period, on average around age 51. After that, estrogen settles at a lower level, mostly made in fat tissue and the adrenals.

That rollercoaster explains why perimenopause can feel like PMS on steroids one month and like your battery is gone the next.

Common Perimenopause Symptoms

- [ ] Heavier, longer, closer-together, or skipped periods
- [ ] Worse PMS, breast tenderness, or mood swings
- [ ] Waking at 2-4am, or trouble falling asleep
- [ ] Anxiety, irritability, or rage that feels new
- [ ] Brain fog and word-finding trouble
- [ ] Hot flashes or night sweats
- [ ] Weight gain around the belly
- [ ] New bloating, reflux, constipation, or food reactions
- [ ] New histamine symptoms like flushing, hives, or headaches
- [ ] Joint aches, dry skin, and thinning hair

Many of these overlap with thyroid problems and low iron. That's why I always check a full thyroid panel and ferritin in perimenopause, instead of assuming it's "just hormones." Thyroid conditions also become more common in midlife women.

The Estrobolome, Up Close

Chapter 5 introduced the estrobolome, the gut bacteria that handle estrogen. In perimenopause, it matters even more. Here's the full journey of an estrogen molecule:

1. **Phase 1 in the liver:** estrogen is converted into metabolites. The 2-OH pathway is the gentler, "cleaner" one. The 4-OH and 16-OH pathways are more stimulating and can be more problematic in excess.
2. **Phase 2 in the liver:** those metabolites are neutralized and packaged for removal through methylation (which needs B vitamins and magnesium), glucuronidation, and sulfation.
3. **Into the gut:** packaged estrogen travels with bile into your intestines.
4. **The estrobolome decides:** a balanced microbiome lets it leave in your stool. Too much beta-glucuronidase unpacks it, and it's reabsorbed back into circulation.

During perimenopause, estrogen surges plus poor clearance can mean heavier periods, breast tenderness, fibroid growth, and worse PMS.

After menopause, the estrobolome still matters. It shapes how much of your remaining estrogen stays active, and how your body handles hormone therapy if you use it.

Why Your Gut Changes in Midlife

- **Estrogen helps protect the gut lining.** It supports tight junctions and the mucus layer, so as it declines, permeability can increase.
- **Microbiome diversity tends to drop** after menopause, with fewer beneficial species.
- **Bile flow and motility can change**, contributing to constipation and fat digestion issues.
- **Stomach acid and enzymes decline** with age.
- **Stress and poor sleep** stack on top, lowering stomach acid and secretory IgA.

Heavy Periods and Iron

Heavy perimenopause periods are one of the most common reasons women in their 40s become iron deficient. If you soak through a pad or tampon every 1-2 hours, pass large clots, or bleed longer than 7 days, talk to your doctor and get your ferritin checked. Chapter 20 covers iron in depth.

Bones, Muscle, and Metabolism

Estrogen protects bone and helps you handle blood sugar. As it falls:

- Bone loss speeds up, especially in the first years after menopause. Your gut has to absorb calcium, vitamin D, magnesium, and vitamin K2 well to protect your bones.
- Insulin sensitivity drops, so belly weight and cravings increase.
- Muscle becomes harder to keep. Muscle is your metabolic engine.

This matters even more with a Graves' history, since excess thyroid hormone also thins bones.

Hormone Therapy and the Gut

Hormone therapy (HRT, or MHT) can be life-changing for many women, and it's a decision to make with your doctor. A few gut and thyroid notes from a pharmacist:

- **Oral estrogen** passes through the liver first, which raises thyroid binding globulin. If you take levothyroxine, you may need a dose adjustment, so recheck thyroid labs 6-8 weeks after starting.
- **Transdermal estrogen** (patch, gel, or spray) skips that first pass through the liver and has much less effect on TBG.
- **Oral micronized progesterone** is often taken at bedtime and many women find it calming for sleep.
- **Your gut still clears the estrogen** you take, so daily bowel movements and a healthy estrobolome still matter on HRT.

Testing That Helps in Perimenopause

Test	What it shows
DUTCH or other dried urine hormone test	Estrogen and its metabolites (2-OH, 4-OH, 16-OH), progesterone, methylation, and cortisol rhythm
Comprehensive stool test	Beta-glucuronidase, diversity, and gut inflammation
Full thyroid panel	TSH, free T4, free T3, reverse T3, and antibodies
Ferritin and iron panel	Iron loss from heavy periods
Fasting insulin, glucose, A1c, and lipids	Midlife metabolic shifts
Vitamin D, B12, magnesium	Common gaps that worsen symptoms
Bone density (DEXA)	Worth discussing with your doctor, especially with a Graves' history

FSH and estradiol bounce around too much in perimenopause to confirm or rule it out on their own. Your symptoms and cycle changes are often more telling than one blood test.

For at-home thyroid and women's hormone testing, I partner with **Raena**: raena.com/thyroidloveclub

Gut Support for Perimenopause and Beyond

- **Fiber, every day:** aim for 25-35 grams from vegetables, berries, seeds, and legumes if tolerated. Fiber binds estrogen in the gut and feeds a healthy estrobolome.
- **Ground flaxseed:** 1-2 tablespoons daily. Its lignans are converted by your gut bacteria into gentle plant compounds that support estrogen balance.
- **Cruciferous vegetables:** broccoli, cauliflower, arugula, cabbage, and Brussels sprouts support the 2-OH pathway.
- **DIM or sulforaphane:** may support healthy estrogen metabolism. Ask your practitioner, especially if you're on HRT.
- **Calcium D-glucarate:** helps keep estrogen packaged for removal.
- **Methylation support:** B vitamins (folate, B6, B12) and magnesium help your liver process estrogen.
- **Protein at every meal:** 25-30 grams per meal helps protect muscle and steady blood sugar.
- **Strength training 2-3 times a week**, plus walking after meals.
- **Magnesium glycinate at night** for sleep, mood, and regularity.
- **Limit alcohol**, which raises estrogen, disrupts sleep, worsens hot flashes, and loosens the gut lining.
- **Daily bowel movements**, always.

Perimenopause Gut Checklist

- [ ] I have a bowel movement every day
- [ ] I eat at least 25 grams of fiber a day
- [ ] I eat cruciferous vegetables most days
- [ ] I get 25-30 grams of protein at each meal
- [ ] I strength train at least twice a week
- [ ] I've had my ferritin, thyroid panel, and vitamin D checked this year
- [ ] I've talked to my doctor about my options, including whether HRT is right for me

Chapter 20

Low Iron, Ferritin, and Your Gut

Iron deficiency is the most common nutrient deficiency in the world, and women carry most of it. You can feel drained, foggy, and shed handfuls of hair for years with "normal" bloodwork, because the standard reference ranges catch iron deficiency only after it's advanced. And very often, the real story starts in the gut.

Why Your Gut Decides Your Iron

Iron is absorbed in the very first part of your small intestine. To get there, it needs:

- **Strong stomach acid**, which converts plant iron into a form your body can absorb.
- **A healthy, non-inflamed lining** in the upper small intestine.
- **Low inflammation**, because inflammation raises hepcidin, a hormone that blocks iron absorption and locks iron away in storage.

So you can eat steak every day, take an iron pill, and still be low if your gut can't absorb it.

Gut Causes of Low Iron

Gut cause	How it lowers iron
Low stomach acid	Less iron converted into an absorbable form
Acid blockers (PPIs, H2 blockers, antacids)	Same effect as low stomach acid
H. pylori	Lowers acid, inflames the stomach, and competes for iron
Celiac disease	Damages the exact part of the gut where iron is absorbed
Autoimmune gastritis	Destroys acid-making cells. Often travels with Hashimoto's
SIBO and dysbiosis	Inflammation and bacteria competing for nutrients
Parasites	Some feed on blood or iron, others inflame the lining
Inflammatory bowel disease	Inflammation plus blood loss
Bleeding in the gut	Ulcers, polyps, hemorrhoids, or more serious causes
Gastric bypass and other gut surgeries	Bypasses the main absorption site

Other Common Causes

- Heavy periods (one of the biggest reasons, especially in perimenopause)
- Pregnancy, postpartum, and breastfeeding
- Plant-based diets without careful planning
- Frequent blood donation
- Endurance exercise
- Low thyroid function, which lowers stomach acid and can cause heavier periods

Important: if you are low in iron and you are a man, postmenopausal, or don't have heavy periods, your doctor should look for a source of blood loss in the gut. Never just supplement and skip that step.

Signs Your Iron May Be Low

- [ ] Fatigue that rest doesn't fix
- [ ] Hair shedding or thinning
- [ ] Restless legs, especially at night
- [ ] Cold hands and feet
- [ ] Shortness of breath or a racing heart on stairs or during exercise
- [ ] Brittle, ridged, or spoon-shaped nails
- [ ] Craving ice, or wanting to chew on ice
- [ ] Headaches, dizziness, or brain fog
- [ ] Anxiety or low mood
- [ ] Pale skin or pale inner eyelids
- [ ] Poor exercise recovery

Iron and Your Thyroid

Iron and thyroid health are tightly linked:

- **Your thyroid needs iron to make hormone.** The enzyme that builds thyroid hormone, thyroid peroxidase (TPO), depends on iron.
- **Low iron slows T4 to T3 conversion**, so you can feel hypothyroid even on medication.
- **Hypothyroidism lowers stomach acid** and can cause heavy periods, both of which lower iron. It becomes a loop.

- **Hashimoto's travels with celiac and autoimmune gastritis**, two major causes of iron deficiency.
- **Hair loss** from low iron and from thyroid imbalance often happen together, which is why ferritin is one of the first labs I check for hair shedding.

The Labs, and What "Optimal" Looks Like

Ferritin is your iron storage. It's the most useful single marker, but it has a catch: ferritin also rises with inflammation, so it can look falsely "normal" when you're inflamed. That's why I always check it alongside a full iron panel and CRP.

Lab	What it tells you	Optimal functional range
Ferritin	Iron stores	Under 30 ng/mL is clearly low. Many women feel best at 50-100, and hair often needs 50-70 or higher
Serum iron	Iron in your blood right now	Swings day to day, so never read it alone
TIBC or transferrin	How hungry your body is for iron	High suggests deficiency
Transferrin saturation	How much of your iron transport is filled	Under 20% suggests deficiency. Over 45% needs follow-up for iron overload
CBC (hemoglobin, MCV, RDW)	Whether deficiency has reached anemia	Low MCV and high RDW often show up with iron deficiency
hs-CRP	Inflammation	If high, ferritin may be falsely reassuring
B12 and folate	Other causes of anemia and fatigue	Often low alongside iron with gut issues

You can be iron deficient without being anemic. Many women have low ferritin and a "normal" CBC, and still have every symptom on the list above.

Food First: Getting More From Your Plate

Heme iron (from animal foods) is absorbed much better than **non-heme iron** (from plants).

Heme iron sources	Non-heme iron sources
Beef, lamb, and bison	Lentils, beans, and chickpeas
Liver and other organ meats	Pumpkin seeds and hemp seeds
Oysters, clams, and mussels	Spinach, chard, and other dark greens
Sardines and dark meat poultry	Quinoa and blackstrap molasses

Boost absorption:

- Pair plant iron with vitamin C (bell peppers, citrus, kiwi, berries).
- Pair plant iron with a little meat or fish, which increases how much you absorb.
- Cook in cast iron.

Block absorption (space these 1-2 hours from iron-rich meals and supplements):

- Coffee and tea
- Calcium, dairy, and calcium supplements
- Antacids and acid blockers
- High-phytate foods like bran (soaking and sprouting grains and legumes helps)

Iron Supplements, the Pharmacist Way

- **Test first.** Iron is one supplement you should never take "just in case." Too much is harmful, and some people carry genes for iron overload (hemochromatosis).
- **Gentler forms:** iron bisglycinate is usually easier on the stomach than ferrous sulfate. Heme iron supplements are another option for sensitive stomachs.
- **Every other day can work better than every day.** Research in iron-deficient women found that taking iron on alternate days led to better absorption, because a dose raises hepcidin for about a day. Your practitioner can help you choose a dose and schedule.
- **Take it in the morning** on an empty stomach with vitamin C if you can tolerate it, or with a small meal if it upsets your stomach.
- **Separate from levothyroxine by at least 4 hours**, and from calcium, magnesium, coffee, tea, and acid blockers.
- **Constipation is common.** Magnesium at night, fiber, water, and a gentler form can help.
- **Fix the gut too.** If absorption is the problem, address low acid, H. pylori, celiac, or SIBO, or the iron won't stick.
- **Ask about IV iron** if you can't tolerate oral iron, aren't absorbing it, have ongoing heavy losses, or need to rebuild quickly.

- **Recheck in 8–12 weeks.** Ferritin rises slowly. Keep going until your stores are replenished, not just until you feel a little better.
- **Safety:** keep iron locked away from children. Accidental iron overdose is a serious poisoning risk for little ones.

> **Shop these supplements:** gentle iron options and the nutrients that help you absorb them are in my online formulary: **shop.thyroidloveclub.com**

Your Iron Action Plan

- [ ] Get ferritin, a full iron panel, CBC, and hs-CRP checked
- [ ] Look at the why: periods, diet, stomach acid, H. pylori, celiac, and blood loss
- [ ] Eat iron-rich foods paired with vitamin C most days
- [ ] Move coffee and tea away from iron-rich meals
- [ ] Choose a gentle supplement and schedule with your practitioner if you need one
- [ ] Support your gut so you can absorb it
- [ ] Retest in 8–12 weeks

Chapter 21

Insulin Resistance, Blood Sugar, and Your Gut

Insulin resistance is one of the most common root causes I find in my clients, and one of the most overlooked. It can quietly drive inflammation, hormone chaos, gut imbalances, weight gain, and fatigue for years before a standard lab ever flags it. It was a big piece of my own story, too.

What Insulin Resistance Is

When you eat, your blood sugar rises, and your pancreas releases insulin to move that sugar into your cells for energy. With insulin resistance, your cells stop responding well to insulin's signal. So your pancreas makes more and more insulin to keep your blood sugar in range.

Here's the catch: your fasting glucose and A1c can look completely "normal" for years while your insulin is quietly climbing. By the time glucose rises, insulin resistance has usually been brewing for a long time. That's why I always check fasting insulin, not just glucose.

My Story With Insulin Resistance

Years before my Graves' diagnosis, I was working long, stressful pharmacy shifts in Queens, NY, through the height of the pandemic, rewarding myself with pizza and carrot cake every Friday. My acne was out of control, and I was eventually diagnosed with PCOS when they found cysts all over my ovaries. My labs looked fine on paper, and the only option I was offered was birth control. When I learned about insulin resistance, everything clicked. Once I addressed it with food, movement, stress support, and targeted supplements, my skin cleared up in just a few weeks.

The Gut and Blood Sugar Connection

Your gut and your blood sugar affect each other in both directions:

- **Dysbiosis and leaky gut drive insulin resistance.** LPS, the bacterial toxin that leaks through a permeable gut, triggers inflammation that makes your cells less sensitive to insulin.
- **Your microbiome shapes your blood sugar response.** People with fewer butyrate producers and less Akkermansia tend to have worse insulin sensitivity.
- **High blood sugar weakens the gut lining.** Research shows high glucose can loosen the gut barrier, which lets more LPS through and keeps the cycle going.

- **Sugar feeds overgrowth.** Frequent blood sugar spikes and high-sugar diets feed yeast and opportunistic bacteria.

The Thyroid and TED Connection

- **Hypothyroidism** lowers insulin sensitivity and slows how your body handles glucose.
- **Hyperthyroidism** can also cause insulin resistance and blood sugar swings, because excess thyroid hormone pushes your liver to release more glucose.
- **TED:** diabetes is a known risk factor for more severe Thyroid Eye Disease. High insulin may also feed the same IGF-1 receptor pathway that drives TED, the receptor that Tepezza (teprotumumab) blocks. The research is still emerging, but in my practice I often see blood sugar swings and insulin resistance alongside TED flares, which is why I check them in everyone with TED.
- **Hashimoto's:** insulin resistance is more common in people with Hashimoto's, and blood sugar swings add to inflammation and antibody activity.

Hormones, Too

Insulin resistance is a major driver of PCOS, irregular cycles, acne, and excess androgens. It also tends to worsen in perimenopause, as falling estrogen makes your cells less insulin sensitive. This is why so many women notice new belly weight and cravings in their 40s (Chapter 19).

Signs of Insulin Resistance

- [ ] Weight gain around the belly, or weight that won't budge
- [ ] Strong sugar or carb cravings
- [ ] Energy crashes, shakiness, or feeling "hangry" between meals
- [ ] Sleepiness or brain fog after meals
- [ ] Waking at 2-4am
- [ ] Skin tags, or dark, velvety patches on the neck or underarms
- [ ] Acne, PCOS, or irregular cycles
- [ ] High triglycerides, low HDL, or fatty liver
- [ ] A family history of type 2 diabetes

Labs That Catch It Early

Lab	Conventional range	Optimal functional range
Fasting insulin	Up to about 20-25 µIU/mL	Under 6-8 µIU/mL
Fasting glucose	70-99 mg/dL	75-90 mg/dL
Hemoglobin A1c	Under 5.7%	Under 5.4%
HOMA-IR (calculated from fasting glucose and insulin)	Not usually reported	Under 1.5. Over 2 suggests insulin resistance
Triglyceride to HDL ratio	Not usually reported	Under 1.5-2. Over 3 suggests insulin resistance

To calculate HOMA-IR: fasting glucose (mg/dL) x fasting insulin (µIU/mL), divided by 405.

A continuous glucose monitor (CGM) is one of the most eye-opening tools I use with clients. Seeing how your blood sugar responds to your actual meals, sleep, and stress is often the moment everything clicks.

How to Improve Insulin Sensitivity

Food:

- Build every meal around protein, fiber, and healthy fat. Aim for about half your body weight in grams of protein daily.
- Eat in order: vegetables first, then protein and fat, then carbs. This simple trick can noticeably soften blood sugar spikes.
- Never eat “naked” carbs. Pair fruit, rice, or bread with protein or fat.
- Cut back on sugar, refined flour, and especially liquid sugar like juice, soda, and sweetened coffee drinks.
- Try a tablespoon of apple cider vinegar in water before carb-heavy meals.
- Lean on the Mediterranean pattern (Chapter 16), which has strong research for blood sugar.

Movement:

- Walk for 10-15 minutes after meals. Your muscles pull sugar out of your blood when they move.
- Strength train 2-3 times a week. Muscle is your biggest blood sugar sponge.

Sleep and stress:

- Even one night of poor sleep lowers insulin sensitivity the next day.

- Chronic stress raises cortisol, which raises blood sugar.

Gut support:

- Feed your butyrate producers and Akkermansia with fiber and polyphenols (Chapter 13).
- Clear dysbiosis and repair leaky gut to lower the LPS that drives insulin resistance.

Supplements I often use (with guidance):

Supplement	How it helps	Notes
Berberine	Improves insulin sensitivity and also works as a gut antimicrobial	Don't combine with metformin or diabetes medications without guidance. Many drug interactions
Myo-inositol and D-chiro-inositol (40:1 ratio)	Improves insulin signaling, especially helpful for PCOS and cycle regularity	Myo-inositol paired with selenium has also been studied in Hashimoto's
Magnesium	Low magnesium worsens insulin resistance	Glycinate for sleep, citrate for constipation
Chromium	Supports insulin's action	Usually part of a blood sugar blend
Cinnamon (Ceylon)	Helps soften blood sugar spikes	Choose Ceylon over cassia for regular use
Alpha-lipoic acid	Antioxidant that supports glucose uptake	Can lower blood sugar. Monitor if on diabetes medications
Omega-3s and vitamin D	Lower inflammation and support insulin sensitivity	Check your levels

> **Shop these supplements:** berberine, inositol, magnesium, and the other blood sugar supports above are in my online formulary: **shop.thyroidloveclub.com**

Medications: metformin and GLP-1 medications can be helpful tools for some people. See Chapter 6 for how they affect your gut, B12, and thyroid medication absorption.

Blood Sugar Checklist

- [ ] I've had my fasting insulin checked, not just glucose and A1c
- [ ] I eat protein at every meal, including breakfast
- [ ] I eat my vegetables and protein before my carbs
- [ ] I walk after meals most days
- [ ] I strength train at least twice a week
- [ ] I limit sugar and skip sugary drinks
- [ ] I prioritize 7-9 hours of sleep

Want help getting your blood sugar and gut on track?

In my Functional Medicine Care Program, we look at fasting insulin and your full metabolic picture, and we can use a CGM to see exactly how your body responds to your meals. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Chapter 22

Constipation, Diarrhea, and Your Bowels

Let's talk about poop. It's one of the most useful health signals you have, and one of the least talked about. How often you go, and what it looks like, tells you a lot about your gut, your thyroid, and your hormones.

My Story With Constipation

I've struggled with bloating and constipation my entire life. It was so normal for me that when I became hyperthyroid and suddenly went every day, I honestly thought it was a perk. Then, when methimazole swung me hypothyroid, my digestion slowed so much that I had painful bloating and constipation almost every day. Later, the parasite I picked up in Mexico flipped things in the other direction. Getting my thyroid levels in a good place, clearing my gut infections, and supporting motility, magnesium, and my nervous system is what finally got things moving. If your bowels have been unpredictable for as long as you can remember, I see you.

What Normal Looks Like

Conventional medicine considers anywhere from three bowel movements a day to three a week "normal." From a functional perspective, I like to see one to three easy, complete bowel movements every day, without straining, and without feeling like you didn't finish.

Bristol type	What it looks like	What it can mean
Type 1	Separate hard lumps, like nuts	Severe constipation
Type 2	Lumpy, sausage-shaped	Constipation
Type 3	Sausage-shaped with cracks on the surface	Normal
Type 4	Smooth, soft, like a snake	Ideal
Type 5	Soft blobs with clear edges	Trending loose, may need more fiber
Type 6	Mushy, fluffy pieces with ragged edges	Mild diarrhea
Type 7	Watery, no solid pieces	Diarrhea

Constipation

Constipation isn't just uncomfortable. When stool sits too long, your body reabsorbs more estrogen and toxins, bacteria have more time to overgrow, and bloating gets worse.

Common root causes:

Root cause	What's happening
Low free T3 or an under-replaced thyroid dose	Thyroid hormone drives gut motility. Too little and everything slows down
Methane SIBO (IMO)	Methane gas directly slows the gut
Low stomach acid or sluggish bile	Poor digestion, and bile is a natural laxative
Dehydration and low electrolytes	Not enough water in the colon to keep stool soft
Low magnesium	Magnesium relaxes the gut muscles and draws water into the bowel
Low fiber, or the wrong fiber for your gut	Too little bulk, or fiber that feeds an overgrowth
Stress and rushing	Fight-or-flight mode shuts down digestion and tightens the pelvic floor
Hormones	Progesterone after ovulation slows the gut, and perimenopause can change everything
Medications and supplements	Iron, calcium, opioids, antihistamines, some antidepressants, and GLP-1 medications
Pelvic floor dysfunction	The muscles that should relax don't, even when the urge is there

Daily habits that help:

- Start the day with a big glass of warm water, plus lemon or a pinch of sea salt.
- Take a short walk in the morning and after meals.
- Use a footstool to raise your knees, which straightens the path for stool.
- Give yourself unrushed time, and don't ignore the urge when it comes.
- Breathe slowly and let your belly relax on the toilet. Don't strain.

Foods that help: two kiwis a day (they have good research support), prunes, ground flax or chia soaked in water, cooked vegetables, extra virgin olive oil, and plenty of water with electrolytes.

Supplement support:

- **Magnesium citrate or oxide:** 200-400 mg at night, adjusted up or down until stools are soft and easy.
- **Vitamin C:** 500-1,000 mg, which draws water into the bowel.
- **Ginger or a natural prokinetic:** to help the gut contract and move things along.
- **Partially hydrolyzed guar gum (PHGG):** a gentle, well-tolerated fiber.
- **Triphala:** a traditional Ayurvedic blend of three fruits used for regularity.
- **Senna or stimulant laxatives:** short term only. They can become habit-forming and don't fix the cause.

What to test: a full thyroid panel (especially free T3), a SIBO breath test with methane, a comprehensive stool test, magnesium, and iron if you're supplementing. If you strain even with soft stools, ask about a pelvic floor physical therapist.

Diarrhea and Loose Stools

Occasional loose stools happen to everyone. Diarrhea that lasts more than four weeks, or keeps coming back, is your gut asking for attention. Chronic diarrhea means you're losing water, electrolytes, and nutrients faster than you can absorb them.

Common root causes:

Root cause	What's happening
Hyperthyroidism (Graves')	Excess thyroid hormone speeds up the whole gut
Infections	Parasites (like Giardia and Blastocystis), bacterial infections, C. difficile, and viruses
Hydrogen or hydrogen sulfide SIBO	Bacteria in the small intestine draw in water and irritate the lining
Bile acid diarrhea	Bile that isn't reabsorbed irritates the colon, common after gallbladder removal
Food intolerances	Lactose, fructose, gluten (and celiac disease), or a food you react to
Inflammatory bowel disease or microscopic colitis	Inflammation in the lining of the gut
Medications and supplements	Metformin, antibiotics, GLP-1s, teprotumumab, high-dose magnesium or vitamin C
Stress and anxiety	The gut-brain axis can speed things up fast
Histamine	Histamine reactions can cause urgency and cramping

Supportive care:

- **Hydrate with electrolytes,** especially sodium and potassium.
- **Eat gently:** white rice, bananas, cooked carrots and zucchini, bone broth, eggs, and simple proteins while things settle.
- **Saccharomyces boulardii:** one of the best-studied probiotics for diarrhea, including after antibiotics and while traveling.
- **Soluble fiber like PHGG or psyllium:** helps bulk and firm up loose stools. Start low.
- **L-glutamine and zinc carnosine:** support a gut lining that's been irritated.
- **Address the cause:** if it's thyroid-driven, infection-driven, or food-driven, the diarrhea won't fully settle until that's addressed.

What to test: a comprehensive stool test (including calprotectin, pathogens, and parasites), a full thyroid panel, celiac screening, a SIBO breath test, and an iron and nutrient panel.

Alternating Between Both

Swinging between constipation and diarrhea is common, and it's often labeled IBS. In my experience, it usually points to SIBO, dysbiosis, food reactions, or a nervous system stuck in stress mode. It can also happen when thyroid levels are moving up and down. Testing helps you find the pattern instead of chasing each symptom.

When to See a Doctor Right Away

- Blood in your stool, or black, tarry stools
- Fever, severe pain, or signs of dehydration (dizziness, very dark urine, not peeing)
- Diarrhea that wakes you up at night
- Unexplained weight loss
- A sudden change in bowel habits, especially over age 45
- Diarrhea after recent antibiotics, which can be a sign of C. difficile

> **Shop these supplements:** magnesium, PHGG, S. boulardii, and the other bowel supports in this chapter are in my online formulary: **shop.thyroidloveclub.com**

Your tools

Symptom Support Quick Reference

Use this chart to see which herbs and supplements I often consider for common symptoms. It's a starting point, not a prescription. The right choice depends on your root cause, your medications, and your test results, so check with your practitioner before starting anything new.

Symptom	Options I often consider	Notes
Bloating and gas	Digestive enzymes, bitters, ginger, fennel tea, enteric-coated peppermint oil	Persistent bloating after meals is a reason to test for SIBO
Reflux and heartburn	DGL, zinc carnosine, aloe, slippery elm, marshmallow root	Skip betaine HCl until the lining heals. Talk to your doctor before stopping acid blockers
Heaviness after protein, low stomach acid	Bitters, digestive enzymes, betaine HCl (with guidance)	No betaine HCl with ulcers, gastritis, NSAIDs, or steroids
Constipation	Magnesium citrate or oxide, vitamin C, ginger, PHGG, ground flax, kiwi, triphala	Check free T3 and test for methane SIBO
Diarrhea and loose stools	S. boulardii, PHGG or psyllium, L-glutamine, zinc carnosine	Test for infections, and check thyroid levels
Greasy stools, no gallbladder	Ox bile, TUDCA, phosphatidylcholine	Check with your doctor if you have gallstones
Food sensitivities and leaky gut	L-glutamine (like Glutashield), zinc carnosine, colostrum, butyrate	Pair with removing triggers and clearing infections
Sugar cravings and yeast	Caprylic acid, berberine, chromium, S. boulardii	Berberine interacts with many medications
Histamine reactions	DAO enzyme, quercetin, vitamin C, vitamin B6	Address the dysbiosis behind it
Nausea	Ginger, peppermint tea, vitamin B6	Ongoing nausea needs a medical workup

Symptom	Options I often consider	Notes
Stress-driven gut symptoms	Magnesium glycinate, L-theanine, lemon balm	Avoid ashwagandha with Graves' or hyperthyroidism, since it can raise thyroid hormone
Blood sugar crashes and cravings	Berberine, myo-inositol, chromium, Ceylon cinnamon	See Chapter 21
Fatigue with low iron	Iron bisglycinate, vitamin C	Test ferritin first. Never take iron "just in case"
Die-off symptoms	Binders, water with electrolytes, rest	Slow down your protocol if symptoms are strong

Shop these supplements: everything on this chart is available in my online formulary, with professional-grade quality and practitioner pricing: **shop.thyroidloveclub.com**

Not sure which ones are right for you?

Symptoms can point in the right direction, but your root causes decide what will actually work. In my Functional Medicine Care Program, we test, find what's driving your symptoms, and build a personalized supplement plan with the right products, doses, and timing for you. Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Your questions

Frequently Asked Questions

Can healing my gut put my Graves' or Hashimoto's into remission?

Gut work can lower inflammation and support your immune system in calming down, and many people see antibodies drop and symptoms improve. Remission depends on many factors, including genetics, how long you've had the condition, and other triggers like stress, infections, and toxins. The gut is one of the most powerful places to start, but it's one piece of the whole picture.

Do I really need to test? Can't I just do a general gut protocol?

You can start with the free foundations in Rebalance and the elimination diet without testing. But antimicrobials without testing are a guess. The wrong herbs can waste months and money, and they can miss things like H. pylori or Yersinia that matter for your thyroid.

My stool test came back mostly normal, but I still feel awful. Now what?

A stool test is one snapshot. Consider SIBO testing, an organic acids test for hidden yeast, histamine, celiac screening, bile flow, mold exposure, and whether your thyroid is optimally treated. Low free T3 alone can cause many gut symptoms.

Should I go gluten-free forever?

With autoimmune thyroid disease, many people feel best staying gluten-free long term, and it's worth a strict 60-90 day trial. Some people can reintroduce gluten later without issues. Test for celiac before you remove it.

Can I take probiotics during the Remove phase?

S. boulardii and spore-based probiotics are often used during Remove. Most other probiotics are added toward the end or after. If you have SIBO or histamine issues, start with those two types.

Will these supplements interact with my thyroid medication?

Some can affect absorption, especially minerals, fiber, binders, and coating herbs. Use the timing chart in Chapter 6, and always run new supplements by your pharmacist or practitioner.

Are these herbs safe with methimazole?

Most gut herbs don't directly interact with methimazole, but both methimazole and some herbs are processed by the liver. Your doctor should monitor your liver enzymes and blood counts as usual. Avoid immune stimulants and iodine-containing products.

Is this safe during pregnancy or while trying to conceive?

Many antimicrobial herbs, including berberine, oregano, wormwood, and undecylenic acid, are not safe in pregnancy or while breastfeeding. Food, gentle digestive support, and some repair nutrients may be appropriate with your provider's okay. Ideally, do your Remove phase before trying to conceive.

How long until I feel better?

Many people notice less bloating and better energy within 2-4 weeks of the Rebalance habits and digestive support. Clearing infections usually takes 1-3 months. Antibodies and eye changes often take 6 months or more.

What if I feel worse when I start?

Mild die-off for a few days can happen. Slow down, lower the dose, keep your bowels moving, hydrate, and consider a binder. If you feel very unwell, have a fever, or symptoms last more than a week, stop and contact your practitioner.

I don't have a gallbladder. What should I do differently?

Focus on bile support with meals (ox bile or bitters), smaller fatty meals, and fat-soluble vitamin levels. You may be more prone to SIBO and loose stools after meals, so keep an eye on those.

What if my gut issues keep coming back?

Recurring problems usually mean a root cause is still active: low thyroid function, low stomach acid, slow motility, ongoing stress, mold exposure, a family member passing back H. pylori, or a medication. This is where 1:1 support can make the biggest difference, and it's exactly what my Functional Medicine Care Program is built for.

Your tools

Your Gut Tracker

Rate each symptom from 0 (none) to 10 (severe) once a week. Seeing the numbers drop is one of the most motivating parts of this work.

Symptom	Week 1	Week 4	Week 8	Week 12
Bloating				
Gas				
Constipation				
Loose stools or urgency				
Reflux or heartburn				
Energy (0 = great, 10 = exhausted)				
Brain fog				
Sugar cravings				
Skin issues				
Eye symptoms (TED)				
Anxiety or mood				
Sleep quality (0 = great, 10 = poor)				

Bowel Movement Check

	Week 1	Week 4	Week 8	Week 12
Times per day				
Bristol stool type (1-7, aim for 3-4)				

My Labs Over Time

Lab	Baseline	Retest
Thyroid antibodies (TRAb, TSI, TPO, or TgAb)		
Ferritin		
Vitamin B12		
Vitamin D		
Zinc		
Stool test key findings		

Food Reintroduction Log

Food	Date	Reaction within 72 hours?	Keep, limit, or avoid

Keep going

Your Next Steps

You don't have to do this all at once, and you don't have to do it alone.

- [ ] Fill out the checklists in Chapter 7 and circle your top pattern
- [ ] Do the baking soda test for 3 mornings
- [ ] Choose your first test using the chart in Chapter 9
- [ ] Start one Rebalance habit this week, like walking after meals
- [ ] Fill in Week 1 of your Gut Tracker

Find These Supplements

> Everything I recommend is in my online formulary, with professional-grade quality and practitioner pricing: **shop.thyroidloveclub.com**

Go Deeper With the Thyroid Clarity Kit

Your gut is one root cause. The Thyroid Clarity Kit brings all my guides together so you can look at the whole picture: possible root causes, the functional testing to find them, and the steps toward remission.

- The Graves + TED Functional Master Guide
- The Thyroid Lab Interpretation Guide
- Top Supplements for Graves and TED
- The Gut Love Guide (this one)

Join My Functional Medicine Care Program

If you want someone to order your testing, read your results with you, and build your plan step by step, my Functional Medicine Care Program pairs you with me and my team. We test, build your protocol, and track your antibodies, labs, and symptoms together.

Apply at **apply.thyroidloveclub.com** or sign up at **functionalthyroid.com**

Join the Thyroid Love Club Support Group

When I was first diagnosed, I felt completely alone. Finding a community of people with Graves', TED, and other thyroid conditions changed everything for me. Reading their stories, asking questions, and finally feeling understood did as much for my healing as any supplement. That's why I created Thyroid Love Club.

Our free monthly support group is a warm, judgment-free space for anyone navigating thyroid, autoimmune, gut, or hormone health. Whether you were just diagnosed or you've been at this for years, you belong here.

What you can expect:

- Real conversations with people who truly get what you're going through
- Time to ask questions and get practical, root-cause guidance from me
- A place to share your wins, big and small, and your hard days too
- Encouragement, tools, and inspiration to keep going
- No pressure and no cost, ever

> **Save your spot and get all the details: support.thyroidloveclub.com**

Follow along on Instagram at @thyroidloveclub or email me at hello@thyroidloveclub.com.

Questions?

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