

CHI RHO
CHIROPRACTIC

DETOX IN A TOXIC WORLD

A Guide for Body, Home and Life

UPDATED APRIL 2026 BY DR. TERRY HARMON & DR. EMMA SPRAGUE

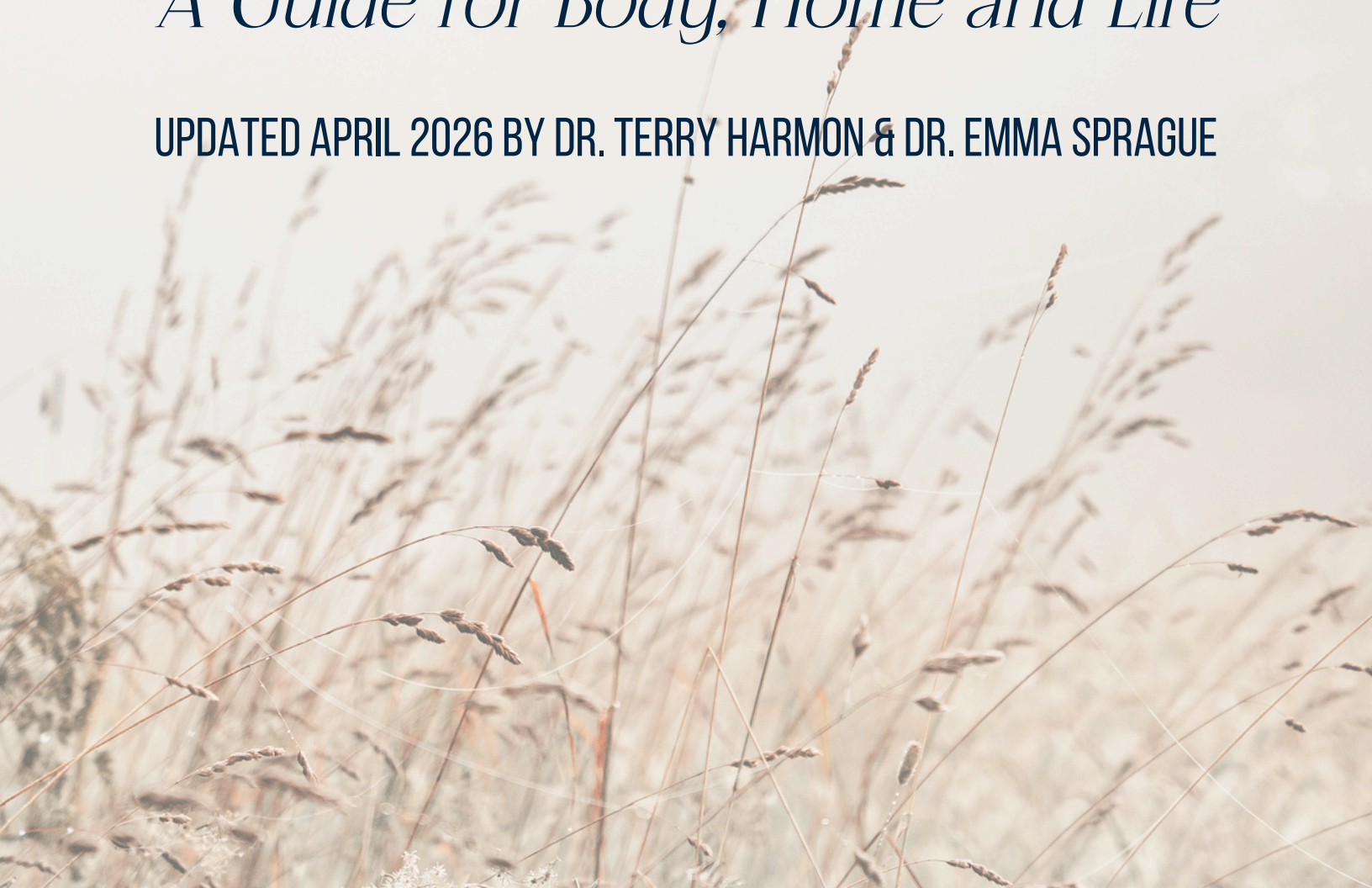


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WHERE TO START

Toxic burden didn't accumulate overnight, and reducing it is best approached the same way: gradually, consistently, and across multiple fronts at once. If you read this guide and feel overwhelmed, that's normal. Here is how to begin.

THIS WEEK

Pick three items and act on them this week:

1. Filter your drinking water (Berkey, RO, or Frizzlife)
2. Switch your laundry detergent to Branch Basics, Truly Free, or Molly's Suds
3. Stop carrying your phone in a pocket against your body

THIS MONTH

Layer in a few more changes:

- Replace conventional cleaning products with Pure Haven or Branch Basics
- Switch to a non-toxic deodorant
- Replace nonstick cookware with cast iron or stainless steel
- Replace plastic food storage with glass

THIS QUARTER

Address the bigger structural items:

- Test your home for mold and radon
- Replace personal care products with Crunchi or Pure Haven
- Filter shower water (DermaShower)
- Reduce or eliminate fragrance from your home (candles, plug-ins, perfume)
- Begin a clean nutrition baseline

WHEN YOU'RE READY FOR PROFESSIONAL GUIDANCE

Functional medicine testing reveals what's actually present in your body and what your specific detox pathways need. The Toxin Zoomer, Genetic SNP Testing, Organic Acid Testing, and Comprehensive Bloodwork are the four panels we use most often. Becoming a Chi Rho client gives you access to these plus a personalized protocol built around your results.

[\[Click here to learn more about becoming a Chi Rho client\]](#).

A MESSAGE FROM DR. TERRY HARMON

I'll never forget the moment I came across the Environmental Working Group (EWG) study revealing that the average newborn is born with over 200 toxins in their body. I was already aware of the troubling health trends in our society, but realizing that newborns, just entering the world, carry nervous system-disrupting and cancer-causing toxins fueled our commitment at Chi Rho to educate and provide solutions. You can explore that study [here](#).

At Chi Rho, our mission is to help as many people as possible achieve optimal health and vitality, especially children. We believe that everyone deserves to live life to the fullest, free from chronic disease, and ultimately pass away in good health rather than suffering from long-term illness. This is entirely possible when we break away from the harmful norms of the standard American lifestyle promoted by popular culture.

We have developed a healthcare system that consistently delivers remarkable results, particularly in the realm of detoxification. It is crucial to understand where we encounter toxic exposures and how to eliminate them from our bodies effectively. Fortunately, advancements in toxicity testing, detox-supporting supplements, and research on lifestyle modifications offer promising solutions to combat exposure and enhance the detoxification process.

The prevalence of pesticides, heavy metals, mold toxins, and “forever chemicals” such as plastics is taking a devastating toll on millions of Americans, limiting their potential for optimal health. The Missing Americans study by Brown University underscores this concern, showing that Americans under 65 are dying at twice the rate of their peers in other industrialized nations, a trend that has been worsening for four decades. This alarming reality highlights the importance of taking a proactive and informed approach to personal health.

The notion that America leads the world in healthcare is, unfortunately, a misconception. While the U.S. spends more on healthcare per person than any other country, the results do not justify the investment. A paradigm shift is necessary to reverse these distressing trends, and it begins with awareness.

We live in an increasingly toxic world, from glyphosate in our food to heavy metals in our water. While we may not always control our exposures, we can educate ourselves on where toxins accumulate in our bodies and adopt effective detoxification strategies. There are many detox methods available, but not all are scientifically sound. For example, the liver serves as the body's primary detoxification organ, but when overwhelmed by excessive toxins, the body strategically stores them in fat cells to minimize immediate harm. This is why some people experience detox symptoms when losing weight, toxins stored in fat are reintroduced into circulation.

By understanding these processes and implementing a well-researched approach to detoxification, we can take charge of our health, reduce our toxic burden, and restore balance to our bodies.

At Chi Rho, we have foundational frameworks that guide everything we do and teach, including detoxification. The one we'll explore here is C.A.M.P., which stands for:



Courage

Achieving outstanding health and healing requires courage because it often means going against the conventional norms. The brain has a specific region known as the nucleus reuniens, which is responsible for courage. When we live courageously, this area strengthens and grows. However, when we live in fear or hesitation, it atrophies.



Autonomic Nervous System

The autonomic nervous system is the central regulator of all bodily functions. The healthier your ANS, the healthier you will be overall. Strengthening this system is crucial for achieving long-term wellness.



Mitochondria

Mitochondria are the powerhouses of our cells, and their health dictates our immune function, metabolism, hormones, and neurotransmitters. Interestingly, mitochondria and the autonomic nervous system are interconnected. If you want more energy, the key is to optimize your mitochondria. One of our main goals at Chi Rho is to help people understand how to build and sustain healthier mitochondria.



Purpose(s)

Each person has a unique purpose they were created to fulfill. Our overall health is intrinsically linked to how we align with and pursue these purposes. Living in accordance with our purpose not only enhances well-being but also fuels vitality and longevity.

At Chi Rho, we follow what we call the Four-Legged Stool Approach to health. Like a stool, lasting wellness rests on four legs working together:

The Four-Legged Stool Approach

1. Chiropractic adjustments in rhythm with precise measurements.
 2. A customized body and home care program tailored to individual needs.
 3. Ongoing education that fosters both learning and unlearning for optimal health.
 4. Vitalistic functional medicine testing to uncover root causes and guide personalized care.
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Physiology of Detoxification

Toxins are pervasive in our environment. While the types and amounts of toxins may have evolved, the human body's need for a mechanism to eliminate them has remained constant. As you will see throughout this guide, we are arguably living in the most toxic era in history, creating more synthetic pollutants that infiltrate our food, water, air, homes, and lifestyles. While it is neither realistic nor entirely possible to eliminate 100% of toxins from our surroundings, we can enhance our body's resilience and capacity for detoxification by first understanding the biological processes involved. This guide will teach you how to identify and avoid potential exposures, an essential first step in detoxification. Let's explore how your body naturally protects you from environmental toxins.

Skin: Your First Line of Defense

As the body's largest organ, the skin acts as a protective barrier, much like armor, preventing harmful substances from entering. This defense system not only blocks toxins but also shields against potentially immune-disrupting invaders such as bacteria, yeast, and viruses, making skin health a top priority. The skin is particularly protective against waterborne toxins found in sources such as shower water, swimming pools, and lakes. However, its protective effects can be compromised by oils and substances in soaps, lotions, makeup, and detergents.

Another crucial function of the skin in detoxification is sweating. While this occurs naturally, activities such as exercise and sauna use can enhance toxin elimination through sweat. A small study comparing sweat induced by exercise and a steam sauna found that vigorous exercise was slightly more effective at removing heavy metals. Additionally, research has shown that sauna use, especially infrared saunas, can effectively eliminate heavy metals, plastics, parabens, and other environmental toxins. The key takeaway is that both exercise and sauna use play important roles in a healthy detoxification regimen.

Liver: The Powerhouse of Detoxification

The liver serves as an intermediary between our environment and digestive system. Toxins ingested through food, water, or air eventually reach the liver, where three phases of detoxification take place to facilitate their elimination.

Phase 1: Transformation

The goal of Phase 1 is to neutralize and convert harmful fat-soluble ("lipophilic") toxins into more manageable water-soluble ("hydrophilic") compounds that the body can more easily excrete. The primary enzyme involved in this phase is cytochrome P450. However, this process generates free radicals, which must be swiftly processed in Phase 2 to prevent liver cell damage or toxin reabsorption. Essential nutrients for Phase 1 detoxification include B vitamins, glutathione, and amino acids.

Phase 2: Conjugation

During this phase, the byproducts of Phase 1 are further processed for safe elimination. This is an energy-intensive process that requires a nutrient-rich diet and a well-structured detoxification protocol. Nutrients and compounds supporting Phase 2 include B vitamins, glutathione, amino acids, omega-3s, mitochondrial support, milk thistle, N-acetyl cysteine (NAC), antioxidants, and, in some cases, bile salts such as TUDCA.

Phase 3: Elimination

In this final phase, toxins are excreted via bile into the intestines for elimination. Bile, produced in the liver and stored in the gallbladder, binds toxins and transports them into the digestive tract. Bile also aids in fat digestion. However, bile production and flow can become sluggish in some individuals, leading to symptoms such as itching, abdominal pain, irregular bowel movements, fat malabsorption, and even weight loss. Without proper bile flow, toxins are reabsorbed back into the body and accumulate over time, which is why bile flow support is one of the most underappreciated levers in any serious detox protocol. TUDCA, covered on Page 32, is the bile salt we use most often to support this phase.



Endotoxins and LPS

One of the most under-discussed sources of internal toxicity is endotoxin, also called LPS (lipopolysaccharide). LPS is a component of the outer cell wall of gram-negative bacteria. When these bacteria die or proliferate in an unhealthy gut, LPS leaks across a compromised gut barrier into the bloodstream, a phenomenon researchers call metabolic endotoxemia.

Why It Matters

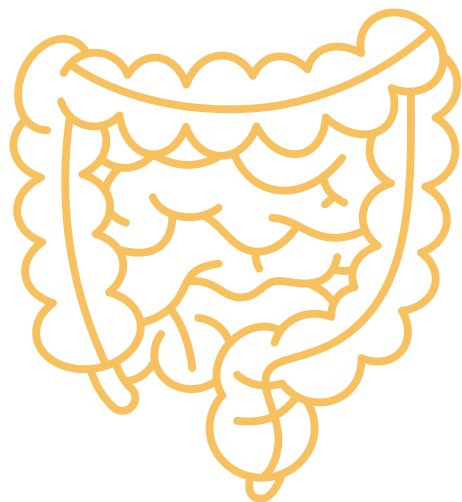
The systemic inflammation that follows is enormous. Elevated LPS has been linked to chronic fatigue, brain fog, depression, autoimmune conditions, insulin resistance, cardiovascular disease, and obesity. Many patients who feel inflamed despite eating clean and avoiding obvious toxins are actually dealing with LPS leaking from gut dysbiosis.

Testing and Detoxification Connection

The Gut Zoomer test screens for LPS-producing bacterial overgrowth and identifies whether endotoxin is contributing to your toxic load. If LPS is elevated, gut barrier repair becomes an essential part of detoxification. Without it, toxins meant to be eliminated through bile keep getting reabsorbed.

Supporting Gut Barrier Integrity

Gut barrier support is foundational to any serious detox protocol. Targeted nutrients such as L-glutamine, zinc carnosine, deglycyrrhizinated licorice (DGL), and aloe vera support intestinal lining repair. Eliminating gluten, processed seed oils, and added sugars removes the most common drivers of intestinal permeability. TUDCA, covered later in this guide, also supports gut barrier health through its bile acid signaling effects.



Methylation: A Critical Detoxification Process

Methylation has gained increasing attention in functional medicine, though it has always been a fundamental biochemical process. This pathway provides methyl groups essential for gene regulation, protein function, lipid metabolism, and detoxification. Impaired methylation can contribute to various health issues, including psychiatric disorders, cardiovascular disease, accelerated aging, and genetic mutations.

A key player in methylation is the MTHFR gene, which regulates this cycle. Mutations in this gene can reduce its efficiency by up to 70%, potentially leading to health risks. One critical function of the MTHFR gene is converting folic acid into its active form, methylfolate. This is particularly important for pregnant women, as synthetic folic acid in cheap prenatal supplements can be harmful to those with MTHFR mutations. Additionally, the methylation cycle helps regulate homocysteine levels, with elevated homocysteine being a significant risk factor for heart disease.



Supporting Methylation:

For individuals with MTHFR mutations, it is essential to supplement with methylated B vitamins, SAM-e, or trimethylglycine (TMG). You can explore high-quality methylated supplements, including **B-Supreme, multivitamins, and Prenatal Complete**, at www.shopchirho.com.

Kidneys: Filtering Toxins from the Blood

While detoxification often focuses on the liver and gut, the kidneys play a crucial role as well. Toxins that are not bound to bile for intestinal elimination are filtered by the kidneys and excreted through urine. The kidneys primarily process water-soluble toxins, making adequate **hydration with clean water essential** for kidney function.

Additionally, the kidneys help filter toxins from the blood, including those from infections or gut imbalances (dysbiosis). Certain toxins, such as **mycotoxins, including ochratoxin**, aflatoxin, roridin E, and gliotoxin, are particularly harmful to kidney health. Later in this guide, you will learn about their sources and strategies for elimination.

Gut/Intestinal Detoxification: The Final Frontier

Under optimal conditions, the gut serves as the final stage of toxin elimination. The bile-toxin mixture travels through the small intestine, where a healthy intestinal barrier ensures proper movement into the large intestine. Along the way, gut bacteria assist in breaking down toxins while also extracting beneficial nutrients.

The efficiency of this process depends on gut motility, governed by the **migrating motor complex (MMC)**. If motility is too fast (e.g., diarrhea), nutrient absorption is reduced. If too slow (e.g., constipation), toxins may be reabsorbed into the body or ferment into harmful gases.

Another key consideration is **intestinal permeability ("leaky gut")**, where larger gaps between intestinal cells allow toxins to re-enter the bloodstream. This increases the body's toxic burden and can contribute to chronic inflammation and disease. The Vibrant Gut Zoomer test is the definitive way to assess intestinal permeability issues not only for adults but also for children.

Beta-Glucuronidase: A Key Enzyme in Detoxification

One enzyme particularly relevant to detoxification is **beta-glucuronidase**, produced by gut bacteria. It regulates estrogen clearance by deconjugating estrogen metabolites for excretion. However, elevated beta-glucuronidase levels can indicate impaired estrogen metabolism, increasing the risk of hormone-related cancers (e.g., breast, ovarian, or prostate cancer), PCOS, mood swings, and reduced libido.

Beta-glucuronidase levels can be assessed through a Gut Zoomer stool test, which provides valuable insights into both gut health and hormone balance. Bacteria in the gut produce beta-glucuronidase, an enzyme that uncouples estrogens and toxins the liver has already packaged for elimination, allowing them to recirculate. Higher levels are associated with hormonal imbalance, chronic inflammation, and increased risk of estrogen-driven cancers.



TOXINS IN

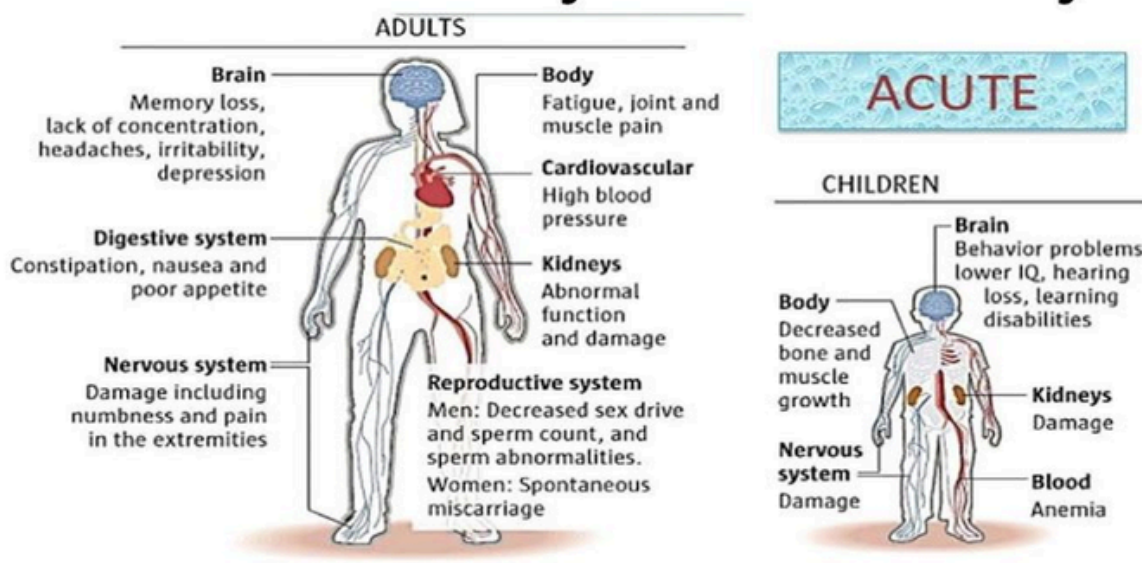
HEAVY METALS

Heavy metals are highly toxic to the body and include substances such as mercury, cadmium, arsenic, chromium, thallium, copper, aluminum, lead, barium, platinum, gadolinium, and even uranium. Excessive levels of these metals can severely damage three critical systems in the body: the autonomic nervous system, the mitochondria, and the gastrointestinal tract, which includes the liver, gallbladder, and pancreas.

Heavy metal toxicity has been linked to a wide range of chronic diseases and health conditions, often masquerading as other illnesses, leading to frequent misdiagnoses. Over the years, we have worked with numerous individuals suffering from persistent and mysterious health challenges, only to discover that heavy metal toxicity was a significant contributing factor.

There are two primary ways heavy metals enter the body: they can be passed down from mother to child or acquired through environmental exposure. Recognizing and addressing heavy metal toxicity is a crucial step in reclaiming optimal health and preventing long-term damage to essential bodily functions.

Signs And Symptoms Of Heavy Metal Toxicity In Your Body



TOXINS IN

LEAD

Lead remains one of the most common and most damaging heavy metal exposures, especially for children. It's still found in homes built before 1978 (in old paint and dust), in pre-1986 plumbing, in some imported pottery, candies, and cosmetics, and in soil near old industrial sites and busy roads. Lead damages the developing nervous system, drops IQ, drives ADHD-like symptoms, and contributes to cardiovascular and kidney problems in adults. There is no safe blood lead level. If you live in an older home, have your water and dust tested, especially if children are in the household. The Toxin Zoomer detects lead, and we screen for it regularly in patients with cognitive, developmental, or unexplained chronic symptoms.

ARSENIC

Arsenic exposure is more common than most people realize. The biggest dietary sources are rice and rice-based products, conventional chicken and pork (some feed historically contained arsenic), and well water in regions with naturally occurring arsenic in the bedrock. Pressure-treated wood, certain pesticides, and contaminated groundwater are other routes. Long-term exposure raises the risk of cardiovascular disease, diabetes, several cancers, and skin changes.

If you rely on well water, test it. If rice is a staple in your household, vary your grains and rinse rice thoroughly before cooking, which reduces arsenic content significantly.

TOXINS IN

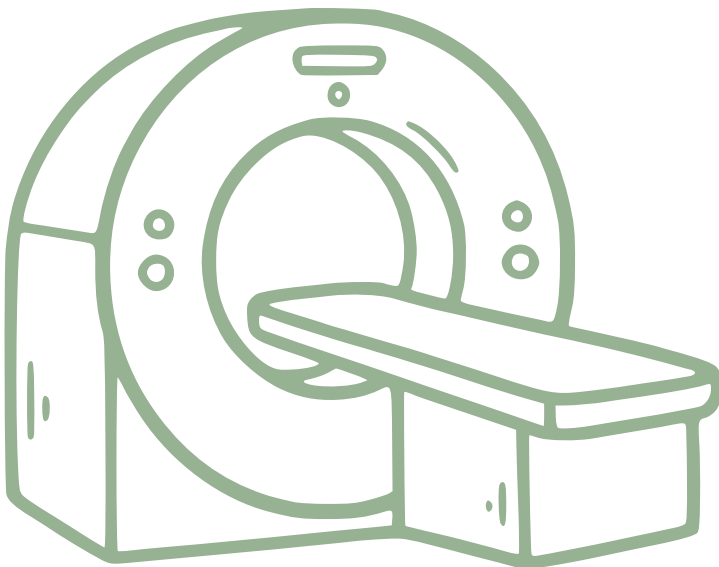
CADMIUM

Cadmium accumulates over a lifetime and is one of the heaviest contributors to kidney damage and bone loss in long-term exposures. The biggest sources are cigarette smoke (active and secondhand), shellfish, organ meats, certain leafy greens grown in contaminated soil, and older batteries and pigments. Smokers and former smokers carry significantly higher cadmium loads. Since cadmium has a half-life of 10 to 30 years in the body, even past exposures still matter today.

GADOLINIUM

Gadolinium is a rare-earth metal used as a contrast agent in MRI scans, and it's an exposure most patients don't realize they've had. Once injected, gadolinium-based contrast agents (GBCAs) can deposit in the brain, bones, kidneys, and skin, even in people with normal kidney function. Symptoms of retained gadolinium include bone and joint pain, brain fog, headaches, skin thickening, fatigue, and cognitive issues, a cluster sometimes referred to as Gadolinium Deposition Disease (GDD). Patients with kidney impairment face an additional risk of Nephrogenic Systemic Fibrosis (NSF), a serious condition.

If you're scheduled for an MRI, ask whether the scan can be done without contrast. If contrast is necessary, ask for a macrocyclic agent rather than a linear one. Macrocyclic agents are more chemically stable and less likely to release free gadolinium into tissue. Gadolinium shows up on the Toxin Zoomer and dedicated heavy metal testing, so if you've had multiple contrast MRIs and ongoing symptoms without a clear cause, it's worth checking.

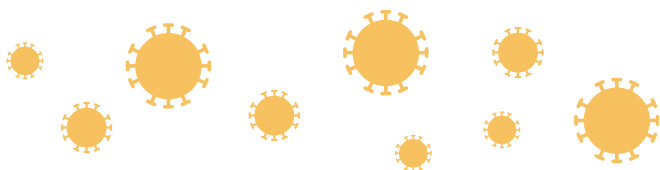


Mercury is highly toxic and widespread in our environment. For instance, many vaccines contain thimerosal, a form of mercury, and amalgam dental fillings also contain mercury. Over time, these fillings release gases that contribute to mercury toxicity in the brain. Additionally, many oceanic fish contain mercury. While most dentists now avoid using amalgam fillings, it's wise to confirm that your dentist does not use amalgam before undergoing any procedure. If you currently have amalgam fillings and wish to have them removed, work with a skilled biological dentist who can safely extract them.

For those in Western Kentucky, our top pick locally is Dr. Laura Hancock, a natural dentist in Morganfield, who is well-regarded and takes care of many of our staff members at Chi Rho. She also has specialized training in orofacial health and can identify issues like tongue ties. Another excellent option is Dr. Valerie Warren in Owensboro, Kentucky, who is trained in safe amalgam removal. If you are not local to our clinic, we suggest visiting The International Academy of Oral Medicine and Toxicology (IAOMT) to find a qualified dentist near you. This step is crucial for your health, as mercury from amalgam fillings releases toxins into your brain and body, impairing your body's detoxification processes. Additionally, consider the impact of root canals on your health. Root canals are toxic and can be harmful. To better understand the risks, watch the documentary *The Root Cause*, which outlines the dangers associated with root canals.

Aluminum is another metal commonly found in our environment, though it becomes problematic with chronic exposure. Common sources of aluminum include conventional deodorants, the food supply (both from soil and air), and vaccines. We suggest exploring non-toxic deodorants and ensuring all your personal care products are free from harmful chemicals. The presence of aluminum in vaccines is a controversial topic, but we encourage you to research vaccine ingredients and make an informed decision based on full awareness.

Copper, too, can be a concern, particularly for women using copper intrauterine devices (IUDs) for birth control. It's important to understand that your body works to maintain a balance between zinc and copper, and modern lifestyles tend to lean towards excess copper. For those interested in birth control options beyond the pill and IUD, Dr. Jolene Brighten has written an insightful [article](#) on the topic that's worth exploring.



Radon & Uranium Exposure

Radon is an odorless, radioactive gas and the second leading cause of lung cancer. It is commonly found in basements, crawl spaces, and homes built on certain soil types. Exposure to radon is particularly concerning because it converts to uranium in the body, contributing to toxicity and increasing the risk of chronic health conditions, including cancer.

One of the simplest ways to protect yourself and your family from radon exposure is to **test your home regularly**. Our pick is the **Ecoblu Radon Monitor**, a reliable and easy-to-use device that provides **continuous radon level readings**. This monitor allows you to track fluctuations over time and take action if radon levels become dangerous.

Additional Home Safety Measures:

- If high radon levels are detected, **consider installing a radon mitigation system** to reduce exposure.
- Regularly **ventilate your home** and use **air purifiers** to help minimize indoor pollutants.
- Since radon exposure contributes to uranium toxicity, **detoxification support** may be necessary for individuals with chronic health conditions linked to heavy metals.



By taking **proactive steps** like radon testing with the **Ecoblu monitor**, you can significantly reduce toxic exposure in your home environment and support long-term health.

Steps for Heavy Metal Detoxification

1. **Evaluate potential sources** of exposure, including dental work, vaccines, cookware, and personal care products.
2. **Consider safe removal** of amalgam fillings by a biological dentist.
3. **Reduce exposure** to aluminum and other metals by switching to **non-toxic alternatives**.
4. **Test your home** for radon, air quality, and carbon monoxide.
5. **Support detoxification** through **mineral-rich water (high in silica)**, **proper supplementation**, and **professional guidance**.

By taking **small, intentional steps**, you can **reduce toxic exposure and support your body's natural detoxification processes** for long-term health and wellness.

Heavy Metals in Baby Food

One of the most important and underdiscussed exposure stories in pediatric health is the [2021 Congressional report titled Baby Foods Are Tainted With Dangerous Levels of Arsenic, Lead, Cadmium, and Mercury](#). The investigation found that the major commercial baby food brands, including Gerber, Beech-Nut, HappyBaby, and Earth's Best Organic, sell products with heavy metal levels far exceeding what the FDA allows in bottled drinking water. Rice cereal, root vegetable purees, and rice puffs were among the worst offenders.

Why It Matters

The implications are serious because infants and toddlers are uniquely vulnerable to heavy metals. They absorb a much higher percentage of what they consume, and their developing brains and nervous systems are easily damaged by lead, arsenic, and cadmium. There is no safe level of these metals in a developing child.

Safer Options:

Make your own purees from organic produce. A basic food processor or blender is all you need. Choose brands that publish their own third-party heavy metal testing, such as Once Upon a Farm and Serenity Kids. Avoid rice-based infant cereals and rice puffs in favor of oat, quinoa, or other lower-arsenic grains.



By making intentional choices about what your baby eats, you can dramatically reduce their early heavy metal exposure and protect their developing brain and body during the most vulnerable window of life.

What to Look for on Labels

Products marked with third-party heavy metal testing certifications. Brands that publicly publish their testing data. Organic certifications, while not a guarantee against heavy metals (since metals come from soil and water), still help reduce pesticide exposure. Avoid generic store brands of infant rice cereal entirely.

If your child has already eaten contaminated baby foods regularly, the [Toxin Zoomer](#) test can identify their current heavy metal burden and inform a gentle, age-appropriate detox plan. Early intervention matters most.

GLYPHOSATE

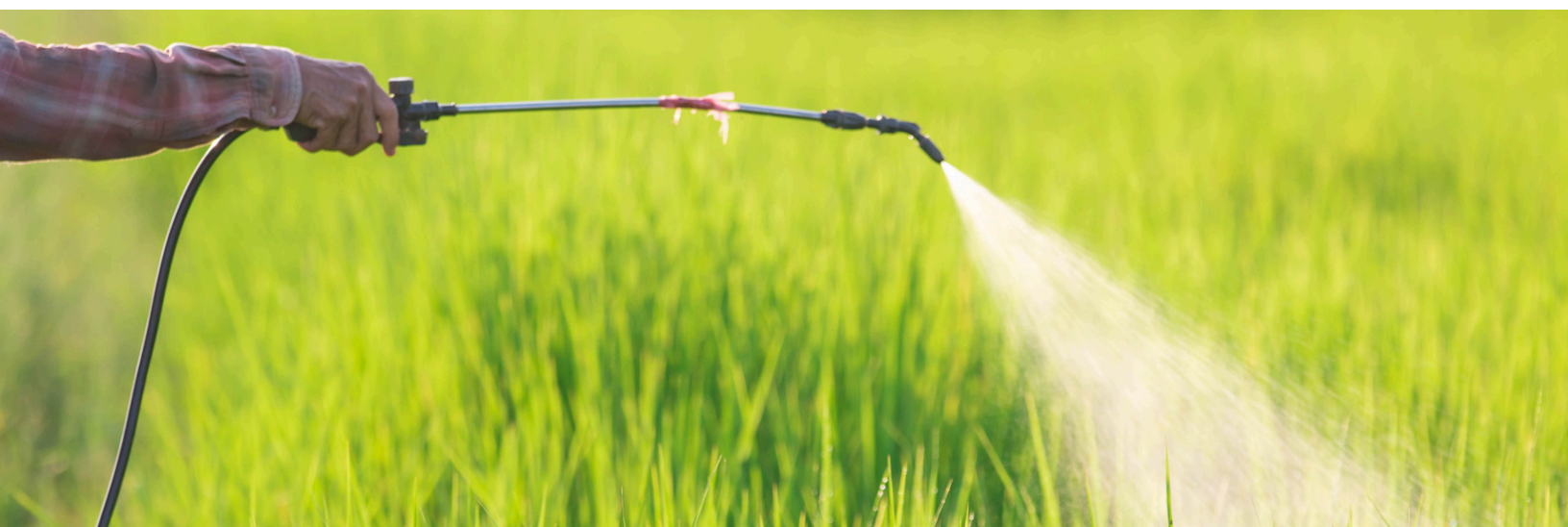
Glyphosate, the active ingredient in Roundup®, is classified as a Group 2A carcinogen by the World Health Organization's International Agency for Research on Cancer (IARC). It is commonly found in agricultural areas and in foods, particularly conventionally grown produce. While it's difficult to control environmental exposure to glyphosate, individuals can minimize their risk by following the Environmental Working Group's Clean 15 and Dirty Dozen guidelines, purchasing organic produce, and avoiding genetically modified foods (GMOs). GMOs and bioengineered crops can harm gut health, disrupt mitochondria, and compromise the autonomic nervous system. Additionally, genetically modified produce is often labeled with a PLU number starting with "8," while organic produce is marked with a "9." It's important to stay informed about potential new food coatings, such as Apeel, and to opt for non-GMO and organic options whenever possible.

Glyphosate is not the only pesticide people are exposed to, however. A recent study has revealed that exposure to multiple pesticides significantly increases the risk of cancer.

"Exposure to multiple pesticides significantly raises the risk of childhood cancers. A 10% increase in pesticide mixtures was associated with a notable rise in certain pediatric cancers, including brain and other central nervous system (CNS) cancers, leukemia, and overall pediatric cancer rates."

This study underscores the dangers of multiple toxins interacting in the body, further highlighting the need for awareness of pesticide exposure.

For more information on this, you can read the full study here: [The Guardian article](#).



THE SCALE OF GLYPHOSATE EXPOSURE

More than 280 million pounds of glyphosate are sprayed on US crops every year, and over 9 billion pounds globally. It is the most widely used herbicide in the history of agriculture. Studies show 80% or more of Americans tested have detectable glyphosate in their urine. This is not a problem affecting only farm workers; it's an exposure affecting essentially everyone eating a conventional diet.

PRE-HARVEST DESICCATION

One of the most important things to understand about glyphosate is how it ends up in non-GMO foods. Conventional wheat, oats, barley, and legumes are routinely sprayed with glyphosate just before harvest as a desiccant to dry the crop and speed up harvesting. This means foods that aren't even GMO, like conventional oatmeal, are often heavily contaminated. Choose organic oats and wheat products to avoid this exposure entirely.

BAYER SETTLEMENTS AND THE CANCER LINK

Bayer (which acquired Monsanto in 2018) has paid out over \$11 billion in settlements to plaintiffs claiming Roundup caused their non-Hodgkin lymphoma. The IARC's Group 2A classification reflects strong epidemiological evidence linking glyphosate to NHL specifically. Despite the EPA's continued position that glyphosate is safe at allowed exposure levels, the settlements speak to a growing body of evidence suggesting otherwise.

MECHANISMS OF HARM

Glyphosate causes harm through several pathways. It generates oxidative stress, damaging cells and DNA. It chelates essential minerals (iron, zinc, manganese, magnesium), making them less bioavailable and contributing to nutrient deficiencies. And it disrupts the gut microbiome by inhibiting the shikimate pathway in beneficial gut bacteria, contributing to dysbiosis, leaky gut, and the systemic inflammation we covered in the Endotoxins section.

The Toxin Zoomer detects glyphosate at clinically meaningful levels and is one of the panels we run regularly in our practice, especially for patients with autoimmune conditions, gut symptoms, or chronic inflammation.

HOW TO REDUCE GLYPHOSATE EXPOSURE

The most impactful changes you can make are dietary. Buy organic whenever possible, especially for grains (wheat, oats, barley), legumes, and the EWG Dirty Dozen produce. Filter your tap water, since glyphosate has been detected in many municipal water supplies. Choose grass-fed and grass-finished animal products, as conventional livestock are fed glyphosate-sprayed grains, which concentrates exposure. Wash and peel non-organic produce when organic isn't available.

OTHER COMMON PESTICIDES

Glyphosate gets the most attention, but it is far from the only pesticide of concern. Several others are worth knowing about and avoiding where possible.

ATRAZINE

The second most-used herbicide in the US, banned in the European Union since 2004. Atrazine is a known endocrine disruptor that has been shown to feminize male amphibians at extremely low doses. It contaminates drinking water across much of the agricultural Midwest and is linked to birth defects, hormonal disruption, and certain cancers.

2,4-D

A component of Agent Orange, still widely used today on lawns, parks, and conventional crops. Linked to non-Hodgkin lymphoma, soft tissue sarcoma, and endocrine disruption. If your neighbors spray their lawns, your exposure goes up too.

The cumulative effect of these pesticides is what matters most. Studies on individual chemicals miss the synergistic effects of being exposed to dozens of pesticide residues simultaneously, which is the reality for most Americans eating a conventional diet.

ORGANOPHOSPHATES

A class of insecticides (chlorpyrifos, malathion, parathion) developed from World War II nerve agents. They damage the developing nervous system, lower IQ in children with prenatal exposure, and contribute to ADHD and autism risk. Chlorpyrifos was banned for residential use in 2001 but is still used on agricultural crops.

PYRETHROIDS

Found in most household bug sprays, mosquito treatments, and lice shampoos. Marketed as safer than organophosphates but linked to neurological symptoms, hormonal disruption, and ADHD with chronic exposure. The synthetic pyrethroids (permethrin, cypermethrin) are particularly problematic for children and pregnant women.

Another key recommendation is to switch from conventionally raised meats to grass-fed and grass-finished options. Conventional meats often come from animals fed genetically modified grains and soy, which are typically sprayed with toxic pesticides. Additionally, many of these animals are receiving mRNA vaccines and are being gene-edited. A great alternative is to find a local farmer who raises animals on a grass-based diet. However, we understand that this may not always be feasible. For a convenient alternative, US Wellness Meats offers high-quality, non-toxic meats and organ meats shipped directly to your door. When possible, choose bone-in and skin-on cuts of meat, as they are richer in nutrients and flavor.

To further support your nutrition choices, we encourage you to check out our [CAMP nutrition guide](#), which can help you confidently make food choices that reduce your exposure to toxins. Another great option is visiting local farmers' markets, where you can talk directly with farmers and find clean, locally grown produce. For those who want even more control, cultivating your own home garden is an excellent way to ensure the quality of your food. We suggest adding one more plant to your garden each year, progressively reducing your reliance on outside sources for food.

EMF'S

Non-native electromagnetic fields (EMFs) are harmful to human health, and exposure is climbing rapidly with the rise of 5G and the growing use of technology in our daily lives. EMFs contribute to the production of Reactive Oxygen Species (ROS), which penetrate cells and bypass their defense mechanisms, potentially damaging DNA within the nucleus. Additionally, EMFs interfere with voltage-gated calcium channels in cells, causing an influx of calcium that can lead to oxidative stress. This disruption has been linked to a variety of chronic diseases. Sources of EMFs include cell phones, Wi-Fi routers, electric wiring, and more. However, in the interest of offering solutions rather than focusing solely on the problem, we will also cover strategies to mitigate the effects of non-native EMFs later in the guide.



MOLD

Mold is highly toxic to human health and is rapidly becoming one of the most pressing challenges to our well-being. It's much more than the green mold on a loaf of bread or the unsettling black patches on a basement or bathroom wall. Often, mold is hidden from view, lurking behind walls in newly built homes or under crawl spaces that are mistakenly assumed to be up to code. Modern building practices, increased electrical signaling (EMFs), and a general lack of awareness about how mold functions have all contributed to the growing prevalence of mold-related health issues. Approximately 25% of people have genetics that make them particularly sensitive to mold and unable to detoxify it effectively. The remaining 75% still experience the negative effects of mold exposure, leading to a cumulative toxic burden. We encourage you to explore our [comprehensive resource on mold](#) for more information.

The combination of mold and non-native electromagnetic fields is especially harmful. With the advent of cell phone towers and Wi-Fi routers in our environments, both adults and children are experiencing greater struggles with their health, leading to a rise in chronic diseases.

DEUTERIUM

Deuterium is an isotope of hydrogen, but it's twice as large as regular hydrogen. When deuterium accumulates in the body, it disrupts mitochondrial function and negatively impacts metabolic health. The goal is to lower deuterium levels to below 130 and maintain them there through lifestyle changes. We provide detailed lifestyle recommendations later in this guide to help you achieve and sustain optimal deuterium levels.

PHARMACEUTICAL TOXINS

Pharmaceuticals contribute to the body's overall toxic burden. A study from the Mayo Clinic revealed that 70% of Americans use at least one prescription drug. Many medications, including antibiotics, hormonal birth control, antivirals, psychiatric medications, and common over-the-counter drugs like Tylenol, place real demands on the liver and deplete nutrients the body needs to function. We're not suggesting you stop any prescribed medication; we're suggesting awareness, and where possible, a root-cause approach to address underlying health issues. We cover specific medication categories in detail later in this guide. We've also created a comprehensive guide on optimizing your immune system, which you can access here for further insight.

AFLATOXINS (B1, B2, G1, G2, M1)

Produced primarily by *Aspergillus* species, aflatoxins are among the most potent natural carcinogens known. The IARC classifies them as Group 1 carcinogens (definitely carcinogenic to humans). Found commonly in peanuts, corn, tree nuts, and grains stored in warm, humid conditions. Aflatoxin B1 is especially toxic to the liver.

OCHRATOXIN A

Produced by *Aspergillus* and *Penicillium* species. Targets the kidneys and immune system, and is linked to nephropathy and immunosuppression. Common in coffee, wine, dried fruits, and water-damaged buildings.

TRICHOTHECENES

Produced by *Stachybotrys* (the infamous black mold) and *Fusarium* species. Highly neurotoxic, they cause headaches, brain fog, vertigo, and respiratory symptoms. Often found in chronically water-damaged buildings.

GLIOTOXIN

Produced by *Aspergillus fumigatus*. A potent immunosuppressant that contributes to chronic infections, allergies, and the inability to fight off other illnesses. Patients with chronic gliotoxin exposure often present with persistent unexplained infections and immune dysfunction.

ZEARALENONE

Produced by *Fusarium* species. An estrogen-mimicking mycotoxin that disrupts hormonal balance, contributes to reproductive issues, breast development changes, and may play a role in hormone-sensitive cancers. Found in contaminated grains.

THE MYCOTOXINS INSIDE MOLD

Mold itself is the visible problem, but the real damage comes from mycotoxins, the toxic compounds that mold produces as part of its biological warfare against competing organisms. When you breathe, eat, or touch mold-contaminated environments, you're absorbing these mycotoxins. Different mold species produce different mycotoxins, and each one wreaks havoc in distinct ways. Knowing which ones are at play helps inform both testing and treatment.

OTHER MYCOTOXINS OF CONCERN

Fumonisin (linked to neural tube defects), sterigmatocystin (a precursor to aflatoxin, similarly carcinogenic), citrinin (kidney toxic), patulin (often found in moldy apples), mycophenolic acid (immunosuppressive), enniatins (mitochondrial toxins), and chaetoglobosin (cytotoxic). Most patients with mold illness have multiple mycotoxins on board, not just one. The [Mycotoxin panel](#) run alongside the [Toxin Zoomer](#) is the testing we use most often to identify which specific mycotoxins are present and at what levels, which guides the binding and detoxification strategy.



CREATING A NON-TOXIC HOME

In addition to monitoring what we eat and drink, it's essential to create a non-toxic home environment, including indoor air quality, cleaning products, and even your mattress. Many everyday products contain toxic chemicals that many people aren't aware of. For example, one study linked frequent exposure to cleaning products with asthma in children. Start by comparing your cleaning products to a list of ingredients to avoid and switch to safer alternatives at a pace that works for you. Pure Haven and Branch Basics are our go-to brands for non-toxic, effective cleaning solutions. You can also use the EWG Cleaning Guide: EWG's Guide to Healthy Cleaning. Consider switching from dryer sheets to wool dryer balls with essential oils for fragrance.

Common areas like basements, bedrooms, kitchens, and bathrooms may harbor toxins. Basements often have mold from water damage, which can lead to allergies and other symptoms. Endocrine-disrupting chemicals (EDCs) are common in furniture and mattresses. In the kitchen, look out for toxic chemicals in cleaning products such as retinyl palmitate, sodium lauryl sulfate (SLS), and polyethylene glycol. Many beauty products in the bathroom also contain harmful ingredients like formaldehyde and mineral oil.

EDCs mimic hormones and disrupt the endocrine system, potentially causing issues like gynecomastia in men or weight gain in women. BPA (Bisphenol A) is a well-known EDC found in plastics, but avoiding plastics altogether is the better path. Glass and stainless-steel bottles are safer alternatives. Prenatal exposure to phthalates in plastics has even been linked to cognitive impairments in children.

EDCs are also present in non-stick cookware, furniture materials, and fabrics. We recommend cast iron or stainless-steel cookware, with options like Xtrema Cookware and Caraway. For food storage, avoid plastic containers and use glass instead.

Furniture, fabrics, and textiles, including linens, bedding, and clothing, can all contain harmful chemicals. Flame retardants, in particular, are common in furniture and fabrics and can disrupt thyroid function. While these are being phased out, it's important to check if your furniture or fabrics contain them, especially if they're older. For non-toxic mattresses, furniture, and bedding, Avocado Green Mattress is a brand we trust. When it comes to fabrics, we suggest opting for organic options across the board and being cautious of synthetic materials, which can carry hidden toxins. For clothing, brands like Pact, Subset, and NADs offer organic, sustainable choices to consider.

Paint can also contribute to indoor toxins, with volatile organic compounds (VOCs) being one of the main culprits. Look for low or no-VOC paints with a GREENGUARD certification, ensuring they are free of over 10,000 chemicals and emit minimal VOCs. Recommended brands include ECOS paints, Real Milk Paint, Farrow & Ball, and Bioshield. To dive deeper into paint ingredients, check out this [article](#) by building biologist Amanda Klecker.

Carpet can also be a source of toxicity, but wool or seagrass carpets are non-toxic alternatives. Building biologist Corrine Segura provides a helpful guide for choosing carpet brands based on material.

To improve indoor air quality, replace artificially scented products with essential oils and consider investing in indoor plants. A more significant but valuable investment is an air purifier, such as the Medifyair, which can filter out airborne toxins, especially mold-related ones. Indoor air quality is critical, as the EPA reports that indoor air can be 2 to 10 times more toxic than outdoor air. Addressing indoor air quality is essential for health, detoxification, and reducing exposure to toxins.



Water in our homes can be a significant source of toxins. Tap water often contains heavy metals like lead and copper, environmental chemicals such as glyphosate (the active ingredient in Roundup®), PFAS "forever chemicals," pharmaceutical residues (including hormones, antidepressants, and pain relievers that pass through people and into wastewater systems), chlorine and chloramine (used as disinfectants but harmful to the gut microbiome), and fluoride. Filter your water as thoroughly as you can to protect your family. Both Berkey filters and tankless reverse osmosis systems are excellent and cost-effective options for drinking water. Another alternative to consider is Frizzlife. Deuterium-depleted and hydrogen-rich waters offer added benefits worth exploring, but ensuring your water source is free from toxins should be your first priority. Having a personal water filtration system is ideal because it eliminates the need for bottled water in plastic bottles. If you're concerned about specific contaminants or unsure which filter to use, consider testing your city or well water with a test kit. We've seen patients struggle with their health due to toxic drinking water, so it's crucial to know what's in yours. You can look up the water reports for your area using the EWG Tap Water Database.

Shower water can also be a significant source of toxins, as our skin is highly absorbent. The DermaShower filter is our pick, which attaches to your showerhead. One benefit of this shower filter is that it's portable and can be taken while traveling.

Mold elimination is another key aspect of maintaining a healthy home environment. While mold is a common issue, especially in the humid Midwest and Southern United States, it often goes unnoticed. Mold can also be found in certain foods, such as peanuts and coffee. We recommend drinking organic mold-free coffee, like ChiRho's Organic Coffee or Purity, and avoiding peanuts altogether, as they can harbor mold. While peanut butter is a favorite for many, it's best to avoid it as it has the potential to grow mold.



MICROPLASTICS, PFAS & HIDDEN PLASTICS

MICROPLASTICS AND NANOPLASTICS

Microplastics and nanoplastics are now found virtually everywhere, in our oceans, our soil, our drinking water, our food, and even in human blood, lungs, placentas, and breast milk. A landmark [2024 study published in the New England Journal of Medicine](#) found microplastics and nanoplastics embedded in arterial plaque, and patients with these particles in their plaque had a 4.5 times higher risk of heart attack, stroke, or death over the following three years compared to those without.

COMMON SOURCES

The biggest exposures come from plastic water bottles (especially when heated or left in cars), single-use food containers and takeout packaging, plastic cutting boards (which shed microplastics with every cut), synthetic clothing fibers shed during washing, tea bags (most commercial tea bags are made with plastic that releases billions of particles when steeped in hot water), and processed foods packaged in plastic.

REDUCTION STRATEGIES

Use glass or stainless steel water bottles. Switch to wooden or glass cutting boards. Choose loose-leaf tea or brands that explicitly use plastic-free bags (like Numi or Pukka). Avoid heating any food in plastic. Replace plastic food storage with glass or stainless steel. Filter your water (most home filters now reduce microplastic load).

NONSTICK COOKWARE AND PFAS

Teflon and other nonstick coatings rely on PFAS (per- and polyfluoroalkyl substances), the so-called "forever chemicals" that don't break down in the environment or the body. PFAS exposure is linked to thyroid disease, kidney and testicular cancers, immune dysfunction, decreased vaccine response in children, and developmental issues. The documentaries *The Devil We Know* and *Dark Waters* cover how DuPont knowingly contaminated communities for decades. The Toxin Zoomer detects PFAS at clinically meaningful levels.



PFAS BEYOND COOKWARE

PFAS IN CLOTHING, GEAR, AND EVERYDAY PRODUCTS

PFAS aren't just in cookware. They're used to make products water-resistant, stain-resistant, or grease-resistant, which means they're hiding in waterproof jackets, hiking gear, yoga pants, sports bras, and athleisure wear from major brands including Patagonia, Lululemon, and REI. They're also in fast-food wrappers, microwave popcorn bags, pizza boxes, dental floss (look for PFAS-free brands like Cocofloss or RADIUS), and stain-treated furniture and carpets.

HOW TO REDUCE PFAS EXPOSURE

Replace nonstick cookware with cast iron, stainless steel, ceramic (Xtrema or Caraway), or carbon steel. Choose untreated cotton, wool, or linen for clothing where possible. Avoid stain-treated furniture and carpets, which off-gas PFAS over time. Skip the microwave popcorn and fast food wrappers. Filter drinking water with a system rated for PFAS reduction (reverse osmosis is the most effective).

RECEIPT PAPER

Most paper receipts are coated with BPA or BPS, endocrine-disrupting chemicals that absorb directly through your skin within seconds of contact. Cashiers and frequent receipt-handlers carry significantly elevated levels in their blood. The exposure increases when receipts come into contact with hand sanitizer, lotion, or sweat, all of which enhance skin absorption. Decline paper receipts whenever possible. Ask for emailed receipts. If you must take one, fold it ink-side in and avoid handling it more than necessary.

LAUNDRY PRODUCTS

Conventional laundry detergents, fabric softeners, and dryer sheets contain undisclosed fragrance chemicals, optical brighteners, and surfactants that stay on your clothes and absorb into your skin all day. Switch to plant-based, fragrance-free brands. Branch Basics, Truly Free, Molly's Suds, Dropps, and Charlie's Soap are all options we trust. Skip dryer sheets entirely; wool dryer balls with a few drops of essential oil work better and last for years.



CANDLES, AIR FRESHENERS & PLUG-INS

WHY CONVENTIONAL CANDLES ARE A PROBLEM

Most candles sold in stores are made from paraffin wax, a petroleum byproduct that releases benzene, toluene, and formaldehyde when burned. These are known carcinogens and respiratory irritants. Add to that the synthetic fragrances used in scented candles, which can contain dozens of unlisted chemicals (including phthalates), and a single lit candle becomes a meaningful indoor air pollutant. Studies have measured indoor air quality in homes that regularly burn paraffin candles and found pollutant levels comparable to a smoker's home.

THE FRAGRANCE LOOPHOLE

Under current US regulations, companies can list "fragrance" or "parfum" on a product label without disclosing what's actually in it. This loophole hides hundreds of potentially harmful chemicals, including phthalates (endocrine disruptors), synthetic musks (which accumulate in body fat and breast milk), and known allergens. Anything labeled "fragrance" without specifying the source should be assumed problematic.

AIR FRESHENERS AND PLUG-INS

Aerosol air fresheners, plug-in fresheners, and gel fresheners continuously release VOCs (volatile organic compounds) and synthetic fragrance chemicals into your home, 24 hours a day in the case of plug-ins. Children, pets, and people with respiratory conditions are most affected. Remove them entirely. If you want a pleasant-smelling home, use a diffuser with high-quality essential oils, simmer cinnamon sticks and citrus peels on the stove, or open windows.

SAFER CANDLE ALTERNATIVES

Choose candles made from 100% beeswax, soy wax, or coconut wax with cotton or wood wicks (avoid metal-core wicks, which can contain lead). Look for candles scented only with essential oils, not synthetic fragrances. Brands we trust include Fontana Candle Company, Big Dipper Wax Works, and Pure Plant Home. Better yet, save candles for occasional use and let your home smell like fresh air, food cooking, and the essential oils you actually choose to diffuse.

LIFESTYLE

Home and lifestyle are interconnected, but several lifestyle-related exposures extend beyond the home, including personal care products, light, sleep, non-native EMFs, deuterium, pharmaceuticals, and pesticides.

COSMETICS AND BODY PRODUCTS

We've already discussed deodorants in relation to aluminum, but other personal care products such as makeup, skincare, toothpaste, and perfumes can also contain toxins that are quickly absorbed through the skin. Crunchi and Pure Haven offer excellent, effective alternatives for cosmetics and skincare.

Toothpaste often contains fluoride, which is harmful to both the brain and the gut microbiome. Fluoride has been shown to calcify the pineal gland, which plays a crucial role in regulating our sleep-wake cycle and melatonin production. Dentalcidin toothpaste is our go-to, which is non-toxic, fluoride-free, and supportive of the oral microbiome. Additionally, we suggest using lo Mouth Rinse before brushing your teeth to further support oral health.

Perfumes and colognes typically contain artificial fragrances, which are highly toxic. Skip them in favor of essential oil-based products. There are plenty of DIY recipes on Pinterest for making your own essential oil roller bottles, which can be used as a safe and effective alternative.

Bug Sprays

Bug sprays often contain harmful chemicals, including DEET, which poses risks to both your health and the environment. For safer options, we like the dōTERRA bug-resistant blend and Badger Anti-Bug Shake and Spray.

Sunscreen

Many individuals, especially parents, worry about using effective sunscreen to protect their skin and their children's. However, some sunscreens can be more harmful than beneficial. Crunchi and Pure Haven both offer safer sunscreen options. That said, we encourage you to rethink your approach to sun exposure. Research continues to show the numerous benefits of moderate sun exposure. While it's important to avoid sunburn, exposing your eyes and skin to sunlight, without sunscreen or sunglasses, for just five minutes can benefit your sleep, mitochondria, and heart rate variability.

COSMETICS & PERSONAL CARE, CONTINUED

TWO CLASSES OF CHEMICALS TO KNOW: PHTHALATES AND PARABENS

Phthalates are plasticizers used to make products soft, flexible, and to help fragrances last longer. They show up in cosmetics, perfumes, lotions, nail polish, shampoo, and anything labeled with "fragrance." They are known endocrine disruptors linked to lower testosterone, reduced fertility, and developmental issues in children of exposed mothers. Parabens (methylparaben, propylparaben, butylparaben) are preservatives that mimic estrogen in the body. They have been detected in breast cancer tumor tissue and are linked to hormonal disruption. Both phthalates and parabens absorb through the skin within minutes of application.

HOW TO AVOID THEM

Read labels and avoid anything that lists "fragrance," "parfum," or any -paraben ingredient. Use the EWG Skin Deep database to check products you already own. Brands like Crunchi, Pure Haven, Beautycounter, Primally Pure, and 100% Pure formulate without phthalates and parabens. As a general rule: the fewer ingredients, the better.

TRICLOSAN

Triclosan is an antibacterial chemical that was banned from hand soap by the FDA in 2016 after evidence linked it to thyroid disruption, antibiotic resistance, and disruption of the gut microbiome. Despite the ban in soap, triclosan is still permitted in toothpaste, mouthwash, deodorants, and certain cosmetics. Check labels and avoid it. The FDA's own ban for soap was a tacit acknowledgment that this chemical doesn't belong on skin or in the human body at all.

HAND SANITIZERS

The pandemic normalized constant hand sanitizer use, but most conventional sanitizers contain triclosan or benzalkonium chloride, plus synthetic fragrance and the same drying alcohols that wreck the skin barrier. Frequent use disrupts the skin microbiome, which plays a defensive role against pathogens. Wash your hands with plain soap and water when possible. Reserve sanitizer for situations where soap isn't an option, and choose simple ethanol-based formulas (Dr. Bronner's organic hand sanitizer is a clean option) without fragrance.

DEODORANTS WORTH A SECOND LOOK

Conventional antiperspirants contain aluminum compounds (linked to breast cancer in some studies, though debated) plus parabens and synthetic fragrance.

Antiperspirants block sweat, which is one of your body's natural detox routes. Switch to aluminum-free deodorants. Brands we trust include Primally Pure, Native (their unscented and sensitive lines), and Schmidt's. The first few weeks of switching can include an adjustment period as your underarm microbiome rebalances; this is normal.

TOOTHPASTE AND ORAL CARE

Most commercial toothpastes contain fluoride, sodium lauryl sulfate (SLS), artificial colors, and triclosan. Fluoride is a controversial topic; what is not controversial is that excess fluoride calcifies the pineal gland and disrupts the gut microbiome.

Choose fluoride-free toothpaste like Dentalcidin, RiseWell, or Boka. For mouthwash, Lo Mouth Rinse and Lumineux are both clean options that don't disrupt the oral microbiome the way conventional antibacterial mouthwashes do.

HAIR DYE

Conventional hair dyes contain a cocktail of chemicals worth knowing about. The most concerning are p-phenylenediamine (PPD), ammonia, resorcinol, and hydrogen peroxide. PPD has been linked to non-Hodgkin lymphoma and bladder cancer in long-term users, particularly hairdressers and people who dye their hair monthly or more. The chemicals absorb through the scalp directly into the bloodstream.

Permanent dyes are the most concerning, with semi-permanent and henna-based options carrying lower risk.

SAFER HAIR DYE OPTIONS

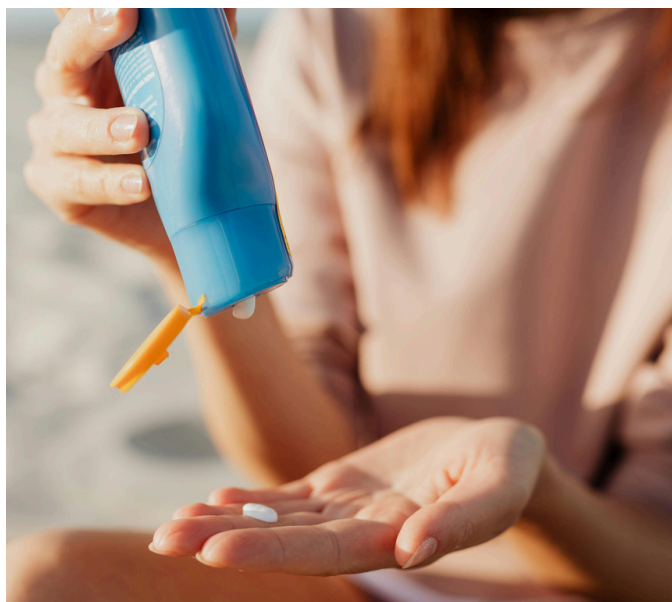
If you color your hair, consider extending the time between dye sessions and choosing demi-permanent or semi-permanent options when possible. Brands like Hairprint, Naturtint, and Madison Reed offer formulations without the worst offenders. Pure henna is the safest natural option for warm tones. For grays, embracing them is also worth considering, especially as you start paying closer attention to your overall toxic burden.

SUNSCREEN, REFRAMED

The sunscreen conversation has become more nuanced in recent years. Many conventional chemical sunscreens contain oxybenzone, octinoxate, octocrylene, and homosalate, all of which are absorbed into the bloodstream within hours of application and detected at meaningful levels for days afterward. Oxybenzone is a known endocrine disruptor linked to lower testosterone in adolescent boys and shorter pregnancies in exposed women. These chemicals are also bleaching coral reefs (Hawaii has banned oxybenzone and octinoxate for this reason).

MINERAL SUNSCREEN ALTERNATIVES

Mineral (also called physical) sunscreens use zinc oxide or titanium dioxide to physically block UV rays rather than absorbing into the skin. They are the safer choice. Brands we trust include Crunchi, Pure Haven, Badger, Thinksport, and Babo Botanicals. Look for non-nano formulations to avoid particles small enough to enter the bloodstream. Reapply more often than chemical sunscreens, since mineral options sit on top of the skin and wash off more easily.

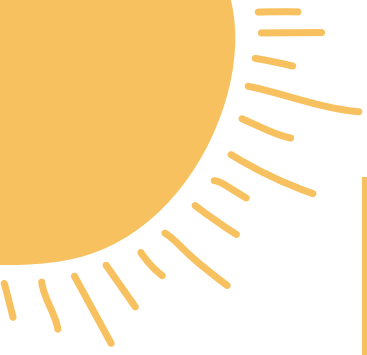


RETHINKING SUN EXPOSURE

We encourage rethinking the assumption that all sun is dangerous. Moderate sun exposure (without sunburn) supports vitamin D production, mitochondrial function, circadian rhythm regulation, and serotonin production. The goal is sensible exposure, not avoidance. Get morning sun on your eyes and skin without sunscreen for short periods. Build up tolerance gradually. Avoid the midday sun in summer and use mineral sunscreen, hats, and clothing for extended outdoor time. Sunburn is the enemy, not the sun itself.

INTERNAL INFLAMMATION AND SUN TOLERANCE

Here's an underappreciated point: the more inflamed you are internally, the more easily you sunburn and the more skin damage you accumulate. Improving your nutrition (especially the omega-3 to omega-6 ratio), reducing seed oils, supplementing with vitamin C, fish oil, and glutathione, and addressing your overall toxic burden meaningfully changes how your skin tolerates sun. People with low inflammation can spend hours in the sun without burning. People who are highly inflamed burn in 15 minutes.



An important consideration for sun exposure tolerance is the level of internal inflammation in your body. The more internal inflammation you have, the more likely you are to get sunburned and develop skin-related health issues. To fully reap the sun's benefits, it's essential to focus on improving your nutrition, undergo functional medicine testing to identify and address deficiencies, and test your omega-3 to omega-6 fatty acid ratio. If you're omega-6 dominant (greater than a four-to-one ratio of omega-6 to omega-3), your risk of sunburn and skin cancer increases significantly. Supporting your skin and overall health with supplements like Vitamin C, Camu Camu, fish oil, and glutathione can make a big difference. Remember to be mindful of when you may be developing a sunburn, even while working on these internal factors.

LIGHT, RADIATION, AND EMFS

Sun exposure brings us to our next focus: light. Light can act as either a toxin or a nutrient, depending on how we use it. Our sleep-wake cycles, and therefore our daily energy, are heavily influenced by light. Artificial light, especially since the introduction of the light bulb, sends signals to our brain that misalign with the natural day-night rhythm. This disrupts our internal clock, causing our bodies to produce hormones at the wrong times, ultimately affecting our energy and sleep patterns.

While artificial light is not as harmful as substances like aluminum (as the body doesn't store it), it still triggers physiological responses that can be less than ideal. One simple solution is to get outside and expose your eyes and skin to natural sunlight at various points throughout the day. If this isn't always possible, invest in a good pair of blue light-blocking glasses, especially if you need to use screens after dark. Blu Blox glasses are our pick, they effectively block both blue and green light spectrums.

It's important to note that blue light itself is not inherently bad; it's simply blue light at the wrong time of day that's problematic. Exposure to blue light in the evening tricks the brain into thinking it's daytime, halting melatonin production and increasing cortisol levels, which disrupts circadian rhythms.

Non-Native Electromagnetic Fields (EMFs)

Non-native EMFs are another type of environmental exposure that, like light, does not get stored in the body but still poses risks. Although most people cannot see or feel EMFs (except for electrosensitive individuals), these fields can cause DNA damage, mitochondrial dysfunction, and activate the sympathetic nervous system. A TriField EMF Meter is the tool we point patients to for measuring home EMF levels, so you can identify and address any excessive exposure.



By understanding the impact of light and EMFs on your health, you can take steps to minimize their negative effects on your body's natural rhythms and overall well-being.

Mitigating EMF Exposure

The adverse effects of non-native EMFs can be mitigated in several ways. One simple step is putting your cell phone in airplane mode when not in use and turning off your Wi-Fi router at night. Use a programmed timer so that your Wi-Fi automatically turns off at a designated time each night, particularly while you're sleeping. While hardwiring your home for internet access is the most effective long-term solution, starting with a timer is a more manageable first step.

Another recommendation is to eliminate your microwave oven, which is a significant source of EMF radiation. Additionally, microwaves can reduce the nutrient content of food. A steam convection oven is an excellent alternative, and while it may seem inconvenient, it only takes a few extra minutes to heat food.

Dirty Electricity

One specific form of non-native EMFs is dirty electricity, which can be addressed by using a STETZERIZER® monitor to assess your environment. If levels of dirty electricity are high, you can use plug-in filters to reduce exposure.

Cell Phone Habits Worth Changing Now

Most EMF exposure for the average person doesn't come from cell towers or Wi-Fi routers, it comes from the device sitting six inches from your face for hours every day. The good news is that meaningful exposure reduction doesn't require giving up your phone. It just requires changing how you use it. Below are five specific habits worth changing immediately.

1. Stop Carrying Your Phone in a Pocket or Bra

Studies have linked phones carried in pants pockets to lower sperm count and reduced motility in men, and phones tucked in bras have been associated with increased breast tissue inflammation and unusual breast cancer presentations in young women. Carry your phone in a bag or hold it in your hand. If you must use a pocket, put the phone in airplane mode first.

2. Don't Sleep With Your Phone Next to Your Head

Many people use their phone as an alarm and keep it on the nightstand inches from their head. Even on airplane mode, this is closer than necessary. Put it across the room (the walk to turn off the alarm helps you wake up anyway). Better yet, use a battery-powered analog alarm clock and keep the phone out of the bedroom entirely.

3. Use Speakerphone or Wired Headphones for Calls

Holding the phone to your head during calls is the single highest exposure scenario. Use speakerphone whenever possible. If you need privacy, use wired (not Bluetooth) headphones. Bluetooth earbuds emit their own EMF, sitting inches from your brain for hours.



4. Avoid Using Your Phone When the Signal Is Weak

When your phone struggles to find signal, it ramps up its radiation output to maintain the connection. The result: significantly higher EMF exposure when using your phone in areas with poor reception, such as elevators, basements, rural areas, or while driving through dead zones. If you have to use it in low-signal areas, keep calls short.

5. Keep Tablets and Laptops Off Children's Laps

Kids placing tablets and laptops directly on their laps creates concentrated EMF exposure to developing reproductive organs. Use a table, a lap desk, or any solid barrier between the device and the child's body. The same principle applies to adults: keep laptops on a desk, not on your lap, especially for long sessions. Small habit changes like these add up to a meaningful reduction in cumulative EMF exposure over a lifetime.

EMF Protection Devices

For further EMF protection, consider using products like those from Synergy Science, which offers effective EMF-mitigating technology. Although they may be more expensive, they are valuable for individuals with heightened sensitivity. The Harmoni Pendant is a more affordable wearable option, providing protection on the go. Belly Armor also offers EMF protection specifically for pregnant women and babies.

For personal technology, DefenderShield provides excellent EMF protection for cell phones, laptops, and headphones. If you must regularly use these devices but want to reduce your exposure, DefenderShield is a great solution.

Two newer recommendations are EMF Rocks and Harmoni Pendant, products Dr. Harmon personally uses and recommends. He also keeps an EMF Rocks device under his bed to reduce EMF exposure during sleep.

Where to Start

If you're unsure where to begin, start with Stetzer or Greenwave filters, which can be plugged into outlets near your and your children's beds. These filters can greatly improve sleep quality by reducing EMF exposure. For those with significant EMF sensitivities or who want further protection, consider exploring more advanced technologies, such as Qi technology from Synergy Science.

By taking small, manageable steps to reduce EMF exposure, you can create a healthier living environment and support your overall well-being.

Electrohypersensitivity and EMF Exposure

Electrohypersensitivity (EHS) describes a condition where individuals experience a range of symptoms when exposed to non-native electromagnetic fields (EMFs). Common symptoms include headaches, nausea, dizziness, ringing in the ears, digestive issues, heart palpitations, mood changes, fatigue, poor concentration, brain fog, impaired learning, sleep disturbances, and loss of appetite. This condition is often underrecognized by conventional and even many alternative practitioners, but awareness is growing as EMF exposure continues to increase.

EHS is frequently linked with mold toxicity and heavy metal exposure, as metals can act as conductors of electricity, amplifying the effects of EMFs. This combination of environmental stressors contributes to sympathetic dominance in the autonomic nervous system, which is the body's response to stress.

The Mold-EMF Connection

Research suggests that EMFs may not only have direct effects on the body but could also stimulate mold spores to release more mycotoxins. Dr. Dietrich Klinghardt, a well-known researcher at the Sophia Institute of Health, discovered that when mold cultures were exposed to radio frequencies from a nearby cell tower, they released over six hundred times more mycotoxins. The overlap of symptoms between mold toxicity and EMF sensitivity makes the two conditions especially challenging to diagnose and treat.

Detoxification and EMF Exposure

High levels of EMF exposure can significantly hinder your body's ability to detoxify. Detox practices such as supplements, cleanses, and air purifiers may not be as effective if EMFs are present in your environment. This is particularly concerning for children, who have been born into an environment with escalating EMF exposure. With 54% of U.S. children living with at least one chronic disease, reducing toxin exposure and supporting detoxification are crucial for health, especially for young ones.

Recommended Books

For deeper learning on EMFs, the following books are worth your time:

- EMFD* by Dr. Joseph Mercola
- The Non-Tinfoil Guide to EMFs by Nicolas Pineault
- The Invisible Rainbow by Arthur Firstenberg
- EMF Practical Guide by Lloyd Burrell
- The Body Electric by Dr. Robert Becker and Gary Selden

Grounding for EMF Stress Relief

Grounding, or earthing, is a simple yet powerful practice for counteracting the stress caused by non-native EMFs. Grounding involves physically connecting your body with the earth, which can be done by walking barefoot, touching the earth with your hands, or sitting on the ground. If you're unable to engage with the earth directly, grounding mats can be used to achieve similar benefits. We use and trust the earthing mats and sheets from earthing.com, which also offers a documentary that delves into the science and benefits of grounding.

By reducing EMF exposure and incorporating grounding practices, you can support your body in managing stress and improving overall health.

MEDICATIONS

Prescription and over-the-counter drugs can be toxic due to their ingredients but also because they contribute to the overall demand they put on the liver. Common drugs that could pose an issue are hormonal birth control, statin drugs, and psychiatric medications. Please don't abruptly stop taking any medication you are currently prescribed, but it is important to be aware that they contribute to the burden on your liver. Over-the-counter medications can also increase toxicity, and Tylenol® and Ibuprofen® are two common culprits. If you struggle with chronic pain, consider seeing a chiropractor, but at a minimum, be aware of the stress they place on your liver and avoid the regular use of these medications.

Prescription medications can be life-saving and are sometimes necessary. At the same time, every medication adds to the liver's workload and contributes to the body's total toxic load. A widely-cited 2016 BMJ analysis estimated that medical errors and adverse drug events together rank among the leading causes of death in the U.S. (See: Makary & Daniel, BMJ 2016. Note that this estimate has been debated.) The takeaway isn't to dismiss conventional medicine but to be informed: understand what you're taking, why, and whether root-cause approaches might reduce the need over time. For broader reading on the impact of prescription medications, *A Mind of Your Own* by Dr. Kelly Brogan is an excellent place to start. Below, we look at the categories of medications that come up most often in our practice.



NUTRIENT DEPLETION

Hormonal birth control depletes specific nutrients with every dose: folate, B6, B12, magnesium, zinc, selenium, and vitamin C. These deficiencies don't show up immediately but contribute to fatigue, mood changes, hair loss, low libido, and elevated homocysteine. Women who become pregnant shortly after stopping the pill are starting from a depleted baseline, which matters significantly for fetal development. If you've been on hormonal birth control for any length of time, replenishing these nutrients before trying to conceive is essential.



HORMONAL BIRTH CONTROL

Hormonal birth control deserves its own conversation because it's one of the most prescribed medications in the world, often started in adolescence and continued for decades, and the long-term metabolic and detox impact is rarely discussed with patients. We're not telling anyone what to do with their reproductive health, but we believe women deserve full information.

MOOD, MICROBIOME, AND CARDIOVASCULAR RISK

A 2016 JAMA Psychiatry study following over a million Danish women found significantly higher rates of depression and antidepressant prescriptions in women using hormonal contraception, with adolescents at the highest risk. Hormonal birth control also disrupts the gut microbiome, increases beta-glucuronidase activity (which interferes with estrogen detoxification), and is associated with elevated cardiovascular risk including blood clots and stroke. The IARC classifies combined hormonal contraceptives as Group 1 carcinogens, with documented increased risk for breast and cervical cancers.

SYMPTOM MASKING

A major issue with hormonal birth control is that it's often prescribed to mask symptoms (acne, painful periods, irregular cycles, PCOS) rather than address root causes. Heavy or painful periods often signal nutrient deficiencies, blood sugar dysregulation, or thyroid dysfunction. Acne often signals gut, liver, or hormonal imbalances. Birth control suppresses ovulation, which means the underlying issue is hidden but not resolved, often returning more severely when the pill is discontinued. Working with a functional medicine practitioner to address root causes can transform reproductive and overall health.

ACETAMINOPHEN (TYLENOL)

Depletes glutathione, the body's master antioxidant, which is exactly the molecule needed for detox. Acetaminophen overdose is the leading cause of acute liver failure in the United States. Even at therapeutic doses, regular use depletes glutathione reserves and impairs detoxification capacity. Use sparingly, support with NAC if used regularly.

NSAIDS (IBUPROFEN, NAPROXEN, ASPIRIN)

Damage the gut lining, contributing to leaky gut, increase cardiovascular risk with regular use, and impair kidney function over time. Address underlying inflammation rather than masking it long-term.

COMMON MEDICATIONS AND THEIR HIDDEN COSTS

No medication is metabolically free. Each one places a load on the liver, depletes specific nutrients, or disrupts a body system. Below are the medications that come up most often in our practice, with what to know about each.

ANTIBIOTICS

Devastate the gut microbiome with each course, often taking months or years to recover. Each round increases the risk of recurrent infections, autoimmunity, and metabolic dysfunction. Reserve for genuine bacterial infections (most upper respiratory infections are viral and don't need them). After any course of antibiotics, support gut recovery with high-quality probiotics, prebiotics, and fermented foods.

PPIS (OMEPRAZOLE, ESOMEPRAZOLE)

Proton pump inhibitors are commonly prescribed for reflux but suppress stomach acid that you actually need to absorb minerals (especially magnesium, calcium, B12, and iron) and to kill incoming pathogens. Long-term use is associated with osteoporosis, dementia, kidney disease, and small intestinal bacterial overgrowth (SIBO). Most reflux is caused by too little stomach acid, not too much.

STATINS

Deplete CoQ10, which is essential for mitochondrial energy production. This is why statin users so commonly report muscle pain, weakness, and fatigue. The cholesterol hypothesis driving statin prescriptions is being increasingly questioned in the literature. If you're on a statin, supplement with CoQ10 (200mg+ daily) at minimum.

SSRIS AND STEROIDS

SSRIs alter gut microbiome composition (over 90% of serotonin is made in the gut), can cause sexual dysfunction that persists after discontinuation, and have notoriously difficult withdrawal profiles. Long-term steroid use suppresses adrenal function, causes bone loss, weight gain, and immune dysregulation. Both should be carefully tapered, never stopped abruptly, and ideally with functional medicine support to address root causes.

DOCUMENTED RISKS

Gastroparesis (delayed stomach emptying) and severe nausea/vomiting affect a significant percentage of users. Pancreatitis cases have been reported. Thyroid C-cell tumors have been observed in animal studies, leading to a black box warning. Sarcopenia (muscle loss) is significant, with up to 40% of weight lost on these drugs being lean muscle rather than fat. "Ozempic face" describes the gaunt, aged appearance that comes from rapid loss of facial fat. Suicidal ideation has been reported and is being investigated by the FDA. Rebound weight gain is the rule rather than the exception once the medication is discontinued.

GLP-1 DRUGS (OZEMPIC, WEGOVY, MOUNJARO, ZEPBOUND)

GLP-1 receptor agonists have become wildly popular for weight loss, but the long-term safety profile is still being established. We're seeing real concerns emerge in the clinical literature and in our patients' experiences. Beyond the marketed benefits, these medications carry meaningful risks worth knowing before starting them.

COSMETIC PROCEDURES

Elective cosmetic procedures often involve introducing foreign materials into the body that need to be detoxified or stay there permanently. The decision to undergo any of these is personal, but worth making with full information.

BREAST IMPLANTS AND FILLERS

Breast Implant Illness (BII) is now formally recognized, with the FDA adding a black box warning in 2021 acknowledging risks including BIA-ALCL (a rare lymphoma), autoimmune reactions, chronic inflammation, fatigue, brain fog, and hormonal symptoms. Many women experience dramatic improvement after explant. Dermal fillers (hyaluronic acid and others) can persist in tissue far longer than marketed (sometimes years), can migrate, and can cause low-grade chronic inflammation.

BOTOX

Botulinum toxin is the deadliest naturally occurring toxin, used in tiny amounts to paralyze facial muscles. Recent research suggests it can travel via retrograde axonal transport beyond the injection site, with documented effects on brain regions. Anyone considering Botox should weigh the cosmetic benefits against the systemic exposure to a neurotoxin every 3-4 months for decades.

PRECONCEPTION

The 90 days before conception are foundational. Both eggs and sperm undergo their final maturation during this window, and what you're exposed to (or not exposed to) directly shapes the genetic and epigenetic starting line for your child. Both parents should reduce alcohol, eliminate seed oils and processed foods, prioritize organic produce, filter water, replace personal care products with clean alternatives, and address any known toxic exposures (mold, mercury, etc.). For women, replenishing nutrients depleted by hormonal birth control is essential. We point patients to Prenatal Supreme for the prenatal phase. For sperm health specifically, men have a 90-day regeneration cycle, which means lifestyle changes made now show up in sperm quality three months later.

FAMILY CONSIDERATIONS

Detox is not just an individual decision. It's a family one. The choices you make about water, food, personal care, and household products affect everyone living under your roof, with the youngest and most vulnerable family members being the most affected. The following four life stages each carry specific considerations worth knowing.

PREGNANCY

During pregnancy, the placenta is not the protective barrier we once believed; toxins cross to the developing baby, including microplastics, PFAS, heavy metals, and pesticides. The baby's developing brain, organs, and immune system are uniquely vulnerable. Filter your drinking water without exception. Avoid all fragrance (perfume, candles, plug-ins, scented body products). Use only mineral sunscreen (zinc oxide, titanium dioxide, non-nano). Skip acetaminophen if at all possible; recent research has linked prenatal acetaminophen exposure to increased rates of ADHD and autism. Test your home for mold; pregnant women are particularly susceptible to mycotoxin illness. Choose organic produce and pasture-raised animal products as much as your budget allows.



BREASTFEEDING

While breastfeeding, your body redirects toxins out of you and into your baby through breast milk. This is one reason aggressive detox protocols are not appropriate during this stage; toxins mobilized from your tissues will end up in your milk. Focus on gentle daily detox support (filtered water, sweat through gentle exercise, regular bowel movements, fiber, sleep) rather than active chelation or strong binders. After weaning is the appropriate time for more intensive detox work. Continue avoiding the same exposures you avoided during pregnancy.

CHILDREN BEYOND BABY FOOD

Once your child is past the baby food stage, exposure considerations expand. Children's medications often contain artificial dyes, sweeteners, and unnecessary additives; ask your pharmacist for dye-free options. Most school environments expose kids to fragrance, off-gassing carpets, fluorescent lighting, and conventional cleaning products. Imported plastic toys can contain phthalates, lead paint, and flame retardants; choose natural materials when possible (wood, fabric, metal). Children's personal care products often contain the same problematic ingredients as adult versions; brands like Babo Botanicals, Pipette, and Honest Co. offer cleaner options. Backpacks, lunchboxes, and water bottles are worth choosing carefully; opt for stainless steel water bottles and PFAS-free lunch gear.

VACCINATIONS AND FAMILY DECISIONS

Family decisions around childhood vaccinations are deeply personal and should be made with full informed consent. We cover our position on vaccines in detail later in this guide. Whatever you decide, support your child's detox capacity with adequate vitamin C, glutathione precursors, methylation support, and time between doses. Genetic SNP testing can identify children who may have impaired ability to clear vaccine ingredients (especially aluminum) and inform timing decisions.



FAMILY CONSIDERATIONS, CONTINUED

Protecting children from toxic exposure is one of the highest-impact things you can do as a parent. Their developing bodies absorb more, detoxify less, and have decades of life ahead of them to be affected by what they're exposed to today.

CHILDREN'S MENTAL HEALTH AND TOXIC BURDEN

The rise in childhood anxiety, depression, ADHD, and autism is multifactorial, but toxic burden is increasingly recognized as a contributing factor. Heavy metals, glyphosate, food dyes, mold exposure, and EMF exposure all impact developing nervous systems. Reducing exposures and supporting detoxification often produces meaningful improvements in behavior, focus, sleep, and emotional regulation. The Toxin Zoomer can be done in children and is one of the panels we use to identify exposures driving these patterns.

BUILDING HABITS THAT STICK

The most important thing about implementing these changes for a family is making them sustainable. Trying to overhaul everything in a week leads to burnout and abandonment of the entire effort. Pick one category at a time. Filter your water this month. Switch personal care products next month. Replace cookware the month after. Within a year, you'll have substantially reduced your family's toxic load without making it feel like deprivation. Children who grow up with clean food, clean water, and intentional product choices tend to maintain those habits as adults.

WHEN TO SEEK HELP

If your child has unexplained chronic symptoms, developmental issues, behavioral concerns, or a family history of autoimmunity, comprehensive functional medicine testing can identify what's actually driving the picture. The earlier these issues are identified and addressed, the better the long-term outcomes. We see children regularly in our practice and have testing protocols specifically designed for pediatric patients.

WHAT'S ACTUALLY IN VACCINES

Here is what is publicly documented in the package inserts of common vaccines. We're not making any of this up; you can verify it directly with the manufacturer or the CDC.

ALUMINUM ADJUVANTS

Aluminum hydroxide, aluminum phosphate, and aluminum potassium sulfate are used to provoke a stronger immune response. The CDC's recommended childhood schedule delivers thousands of micrograms of aluminum across multiple injections in the first two years of life. Page 9 of this guide covers aluminum as a heavy metal of concern. Injected aluminum bypasses the gut's natural absorption regulation, which makes the exposure functionally different from dietary aluminum.

FORMALDEHYDE RESIDUES

Formaldehyde is used during production to inactivate viruses and bacterial toxins. It is a known carcinogen. Trace residual amounts remain in the final product.

POLYSORBATE 80

A surfactant shown in animal research to increase blood-brain barrier permeability, which raises real questions about the simultaneous presence of aluminum and other compounds in the same injection.

EGG PROTEIN, GELATIN, ANTIBIOTIC RESIDUES, MSG, SORBITOL, SUCROSE

Common ingredients but worth knowing if you have allergies or sensitivities.

MERCURY (THIMEROSAL)

Removed from most childhood vaccines in the early 2000s, but still present in some multi-dose flu vaccines.

FETAL CELL LINES

MRC-5 and WI-38, originally derived from elective abortions in the 1960s, are used in production of MMR, hepatitis A, varicella, and others. Residual fetal DNA fragments can remain in the final product.

VICP AND VAERS

The 1986 National Childhood Vaccine Injury Act removed legal liability from vaccine manufacturers and created the Vaccine Injury Compensation Program (VICP), which has paid out over \$5 billion to date in compensation to vaccine-injured patients and families. The existence of this program is a public acknowledgment that vaccine injury is real and quantifiable. The Vaccine Adverse Event Reporting System (VAERS) collects adverse event reports from providers and the public. While VAERS is widely understood to capture only a small fraction of actual events, it remains the official record.

GENETIC SNPS AND VACCINE RESPONSE

Genetic SNPs play a significant role in how individual bodies handle these ingredients. Patients with MTHFR variants, glutathione production issues, or compromised methylation often struggle to clear injected aluminum and other compounds. This is one reason we use Genetic SNP Testing through the Oxidative Stress Test before guiding decisions about vaccination, especially for children with neurological symptoms or family history of autoimmunity.

MRNA VACCINES, EXPANDED

The COVID-19 mRNA vaccines were developed and rolled out faster than any vaccine in history, with long-term safety data still emerging. We encourage independent research into the lipid nanoparticle delivery system, the biodistribution data showing the particles travel beyond the injection site, and the growing body of peer-reviewed literature documenting cardiovascular (myocarditis, pericarditis), immunological, and neurological effects. The mRNA platform is now being expanded to other infectious diseases, cancer, and even into the food supply through livestock vaccinations. This is worth following closely.

OUR POSITION, PLAINLY

We support informed consent. Patients and parents have the right to know what is in any product injected into their bodies or their children's bodies, the right to ask hard questions, and the right to decline without coercion or social penalty.

We support patients who choose to vaccinate fully, decline entirely, or follow a delayed or selective schedule.

What we cannot support is the assumption that the ingredients in vaccines are categorically different from the ingredients we work to remove in every other context.

DETOX SUPPORT IF YOU CHOOSE TO VACCINATE

If you do choose to vaccinate, support detox capacity before and after each dose with adequate vitamin C, glutathione precursors (NAC), methylation support, and time. Spacing vaccines apart rather than receiving multiple in one visit reduces the immediate aluminum and chemical load on the body, especially for children. The same principles apply to adult vaccines.

IF YOU'RE PAST THE VACCINATION WINDOW

If you or your children have already received vaccines and now wonder about residual exposure, the answer is the same as for any other toxic exposure: the body has detox capacity that can be supported. Aluminum, mercury, and other vaccine ingredients can be addressed through the same protocols we use for other heavy metal and chemical exposures. The Toxin Zoomer can identify what's still on board, and the protocols in Part 5 of this guide can help reduce the burden over time.

FURTHER READING

For ongoing research, ingredient profiles, and exemption resources, Children's Health Defense maintains a comprehensive online library, including their detailed article on vaccine ingredients. For deeper reading on vaccines, their ingredients, and history, the following are worth your time:

- Dissolving Illusions by Dr. Suzanne Humphries
- Turtles All The Way Down by anonymous
- Vaccines, Autoimmunity, and the Changing Nature of Childhood Illness by Dr. Thomas Cowan

Whatever you decide for yourself or your family, decide it informed.

ALCOHOL AND NICOTINE

When it comes to detoxification, it's essential to avoid alcohol if your liver is sluggish or if you're in the process of detoxifying. Alcohol can burden the liver and slow down detoxification efforts.

Another major toxin to consider is nicotine, found in smoking, vaping, and chewing tobacco. We strongly encourage transitioning away from all of these. If you're struggling with nicotine addiction, Lucy.co's non-toxic nicotine gum is a safer alternative that can help manage cravings while you work toward quitting.

QUITTING SUPPORT

If you're trying to quit any nicotine product, abrupt cessation is almost always harder than tapered. Lucy.co's nicotine gum (which we mentioned earlier) is a non-toxic option for managing cravings during the taper. NAC, vitamin C, and B vitamins help support the body's recovery during withdrawal. Sleep, hydration, and movement matter enormously. The first two weeks are the hardest. After that, the body's nicotine receptors begin to normalize and the cravings shift from physical to behavioral. Most people who quit successfully report a substantial improvement in energy, mood, and physical performance within a month.

VAPING

Vaping was originally marketed as a safer alternative to smoking, but the evidence has since accumulated and the picture is significantly more concerning. Vapes deliver nicotine via heated metal coils that release particles into the lungs and bloodstream. The flavoring chemicals (especially diacetyl, the buttery flavoring) have been linked to bronchiolitis obliterans, also known as "popcorn lung," a serious and often irreversible lung condition. The 2019 EVALI outbreak (E-cigarette or Vaping product use-Associated Lung Injury) hospitalized thousands and killed dozens, primarily young, otherwise healthy people.

WHAT'S ACTUALLY IN VAPES

Beyond nicotine and the heated metal particles, vape liquids contain propylene glycol, vegetable glycerin, flavoring chemicals (often the same fragrance compounds we covered in the cosmetics section), and various preservatives. The cartridges themselves are made of plastic that releases microplastics into the vapor with use. Even nicotine-free vapes deliver these harmful compounds. The lungs are not designed to filter aerosolized chemicals; what we inhale enters the bloodstream rapidly and circulates throughout the body.

LONG-TERM CONCERNS

Because vaping is relatively new, the full long-term picture is still emerging. What we already know: vaping reduces lung capacity, increases inflammation markers, raises cardiovascular risk, and is dramatically habit-forming due to the high nicotine concentrations now common in modern devices. The teen and young adult vaping epidemic has created a generation of nicotine-dependent young people, many of whom never smoked traditional cigarettes. Quitting vaping is similarly difficult to quitting smoking.

NICOTINE POUCHES

Nicotine pouches (Zyn, Velo, On!, Rogue) have exploded in popularity, particularly among young men, marketed as a clean, modern, smokeless alternative. They are not without consequence. Each pouch contains 3 to 12 mg of nicotine that absorbs through the gum tissue directly into the bloodstream. Heavy users go through full cans daily, putting their nicotine intake at levels comparable to chain-smoking. The marketing focus on tech bros and high performers obscures the real addiction profile.

DOCUMENTED EFFECTS

Nicotine pouches cause gum recession (often severe and irreversible), white lesions on gum tissue (some of which become precancerous), elevated blood pressure with chronic use, and significant cardiovascular strain. Long-term smokeless tobacco use has been linked to oral and pancreatic cancers; while pouches contain less of the carcinogens than traditional dip, they're still concerning. The dependence profile is severe; many users report being unable to go a few hours without a pouch.

WHY NICOTINE ITSELF IS WORTH AVOIDING

Setting aside delivery method, nicotine itself is a vasoconstrictor (it constricts blood vessels), raises heart rate, contributes to insulin resistance, suppresses the immune system, and impairs wound healing. The argument that "clean nicotine" is benign because it's separated from combustion products doesn't hold up under scrutiny. The molecule itself does meaningful harm with regular use.

DEUTERIUM DEPLETION

Several lifestyle practices help lower deuterium levels, as high deuterium can cause mitochondrial damage and disrupt metabolic health. Deuterium, or "heavy hydrogen," accumulates in the body and negatively impacts various systems. At Chi Rho, we test deuterium levels and recommend keeping them below 130 for optimal health.

If your deuterium levels are high, consider drinking deuterium-depleted water (such as Lite Water or HydroHealth) for a short period. Once deuterium levels are lowered, maintaining them with a healthy lifestyle is essential.

To support deuterium depletion, we suggest a nutrition plan that encourages ketosis. The "keto" diet doesn't automatically induce ketosis, so aim to eat fewer carbs (tailored to your individual needs) and using tools like the Keto Mojo device to track ketone levels.

Fasting is another effective method to deplete deuterium. Water-only fasting, dry fasting (where no water is consumed or baths taken), and intermittent fasting (restricting eating to a 4-10 hour window) are all beneficial. For those in optimal health, we suggest a three-day fast every two months. For beginners, fasting should be gradually introduced. Join us at Chi Rho for corporate fasts and explore our [Fasting E-Book](#) for more detailed guidance.



THE BIGGER PICTURE

Reducing seed oil intake is one of the most impactful single changes a family can make. Many patients report meaningful improvements in joint pain, skin health, energy, and inflammation markers within weeks of switching to traditional fats. Combined with reducing pesticide and food dye exposure (covered next), the cumulative effect on whole-body inflammation is substantial.

NUTRITION

Nutrition plays a key role in maintaining a non-toxic lifestyle. Eat organic whenever possible. At the very least, follow the Environmental Working Group's (EWG) guidelines for the [Dirty Dozen](#) and [Clean Fifteen](#). The Dirty Dozen includes the twelve foods most contaminated with pesticides, and these should always be purchased organic. The Clean Fifteen are the foods with the lowest pesticide levels and are safe to consume conventionally. You can access a complete list of nutrition recommendations in our [CAMP Nutrition Guide](#).

Even if you consider your diet "mostly healthy," it is important to be mindful of toxins. Perfection is not realistic, but eating clean 90% of the time is attainable. Many common foods are contaminated with GMOs, pesticides, trans fats, seed oils, plastics, and artificial sweeteners. We also advise caution with fake meats, farm-raised fish, and meat from animals that may have been exposed to mRNA vaccines. For more detailed guidance on eating clean, refer to our [Legacy Health Academy Nutrition Guide](#).

INDUSTRIAL SEED OILS

Industrial seed oils (canola, soybean, corn, cottonseed, sunflower, safflower, grapeseed, rice bran) deserve a category all their own. Marketed as "heart-healthy" for decades, the science has shifted significantly. These oils are extracted using high heat, pressure, and chemical solvents like hexane, leaving behind oxidized fats and residual chemicals. They are extremely high in omega-6 fatty acids, which drive inflammation when consumed in the quantities the modern American diet now provides.

WHY SEED OILS MATTER

The omega-6 to omega-3 ratio in the modern diet has shifted from roughly 1:1 (where humans evolved) to closer to 20:1 or worse. This ratio drives chronic inflammation, which underlies most modern disease, from heart disease and diabetes to autoimmune conditions and cognitive decline. Seed oils are also unstable and oxidize easily when heated, creating compounds that damage cells.



COOKING ALTERNATIVES

Replace seed oils with stable, traditional fats: extra virgin olive oil (cold uses), avocado oil (medium heat), grass-fed butter or ghee (high heat), beef tallow, duck fat, or coconut oil. When eating out, ask what oils are used and try to choose restaurants that cook with butter, olive oil, or animal fats. Dressings, mayonnaise, and salad mixes are common hidden sources of seed oils. Brands like Primal Kitchen and Chosen Foods offer clean alternatives.

READING LABELS

Ingredient lists are your best tool for avoiding seed oils. They appear in nearly all packaged and processed foods, salad dressings, baked goods, fried foods, and restaurant cooking. Even foods marketed as healthy (organic crackers, protein bars, granola) often contain seed oils. The phrase "vegetable oil" is almost always a seed oil. Time spent reading labels at the grocery store pays off in long-term health.

THE PATTERN

Seed oils, synthetic dyes, and artificial sweeteners share a common pattern: they were aggressively marketed as healthy or harmless, became widely adopted across the food supply, and only after decades of widespread use did the actual health consequences become clear. The lesson isn't paranoia; it's choosing whole, real foods as the foundation of your diet. The closer a food is to the form it grew or was raised in, the safer it generally is.

SYNTHETIC FOOD DYES

The artificial colors that brighten so many processed foods (Red 40, Yellow 5, Yellow 6, Blue 1, Blue 2, Green 3) are derived from petroleum and have been linked to hyperactivity, attention issues, and behavioral changes in children. The European Union requires warning labels on foods containing these dyes; many of the same brands sell dye-free versions in Europe and dye-laden versions in the United States.



RED DYE 3 BANNED

In January 2025, the FDA finally banned Red Dye 3 in food after decades of evidence linking it to cancer in animal studies. The dye had already been banned in cosmetics since 1990. The 35-year delay between banning it in cosmetics and banning it in food (which we eat) speaks to how slow regulatory action on food additives can be. Many of the other synthetic dyes still in use have similar concerning safety profiles.

WHERE DYES HIDE

Obvious sources include candy, frosting, sodas, and brightly colored cereals. Less obvious sources include yogurt, bread, salad dressings, pickles, sauces, vitamins, medications (especially children's), and toothpaste. Many "natural" looking foods still contain dyes; always read labels. Choose foods colored with natural sources (beet juice, turmeric, spirulina, paprika) when color is needed at all.

ARTIFICIAL SWEETENERS

Artificial sweeteners are marketed as healthy alternatives to sugar but carry their own meaningful risks. Aspartame (NutraSweet, Equal, found in diet sodas, sugar-free gum, and many "low-calorie" foods) was classified as a Group 2B possible carcinogen by the IARC in 2023. Sucralose (Splenda) has been shown in recent research to damage DNA, alter the gut microbiome, and produce harmful compounds when heated.

ERYTHRITOL AND SUGAR ALCOHOLS

Erythritol, often marketed as a clean alternative, was linked to increased risk of heart attack, stroke, and blood clots in a 2023 Cleveland Clinic study. Sugar alcohols (xylitol, sorbitol, maltitol) commonly cause digestive distress and disrupt the gut microbiome. None of the artificial or alternative sweeteners are as benign as their marketing suggests.

BETTER SWEETENER CHOICES

When sweetness is needed, the cleaner options are raw honey, pure maple syrup, dates, and small amounts of monk fruit or pure stevia leaf (not the highly processed extracts). Better still: gradually train your taste buds to need less sweetness overall. Most modern food is significantly sweeter than what humans evolved with, and reducing total sweetness intake reduces cravings and stabilizes blood sugar.



Exercise and movement are essential for depleting deuterium. Aim for a daily brisk walk of at least 30 minutes, aiming for 10,000+ steps per day and 20+ minutes of exercise. Tracking these metrics with devices like the Oura Ring or any step-tracking device is helpful. Exercise also supports detoxification.

For sauna enthusiasts, infrared saunas are excellent for deuterium depletion. Use an infrared sauna daily if you can, ideally for an hour. Start with lower temperatures and shorter durations, gradually building up. JNH Saunas offers great options, including steam saunas if you're considering one for your home. If a sauna isn't available, Epsom salt baths are the next best alternative.

Cold exposure also promotes mitochondrial function and aids in ketosis and deuterium depletion. Aim for 11 minutes or more per week of cold immersion in water under 56°F.

Quality sleep plays a critical role in deuterium depletion. Use a device like the Oura Ring to track sleep and strive for 1 ½ hours or more of deep sleep and 1 ½ hours or more of REM sleep nightly.

Sun exposure helps support mitochondria, which can enhance deuterium depletion. Aim to get morning, midday, and evening sun exposure daily, but avoid sunburn.

Red light therapy is beneficial as it resonates with hydrogen and reduces the viscosity of water in the body, optimizing mitochondrial function. Our pick: Mito Red Light for affordable and effective red light therapy. Use code "CHIRHO" for 5% off.

For supplemental support, the two we lean on are [Opti Metabolic](#) and [Mito Fusion](#).



BODY

Internal Toxins: Yeast, Parasites, and Infections

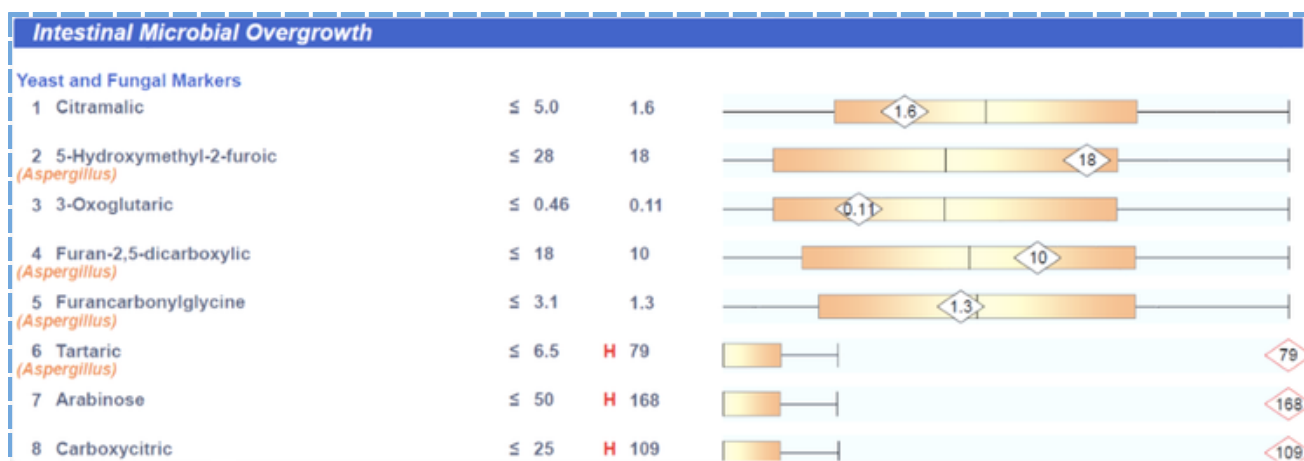
Another category of toxins that can impact our health are internal toxins, which are naturally produced in the body due to infections like yeast, parasites, and other chronic infections. Common examples we see in our office include Lyme disease and its associated co-infections, MARCoNS (multiple antibiotic-resistant coagulase-negative staphylococci), nasal infections, and oral infections linked to altered oral structures or root canals.

To assess these potential internal toxin sources, we perform a variety of functional medicine tests. Click [here](#) to begin your journey with functional medicine testing and get clarity on your health.

Parasites and Infections: A Common Cause of Toxicity

Parasites are a significant internal toxin producer we often see in practice. For many individuals, parasites can drain energy and complicate the detoxification process. To support parasite cleansing, we suggest a 5-day parasite cleanse around the full moon each month. A supplement we trust for this process is [Para Pro](#), which can assist in removing parasites from the body.

In addition to parasites, other infections such as Lyme disease, yeast infections, and MARCoNS can also contribute to the internal toxin burden. In our experience, many clients have multiple internal toxins contributing to their overall health challenges. Functional medicine testing is key to identifying these issues, as it helps provide a clear path toward health restoration and enables us to create an effective detoxification plan.



SUPPORTING C.A.M.P.

We introduced the C.A.M.P. framework on Page 3 of this guide as the foundation of how we approach health at Chi Rho. C.A.M.P. stands for Courage, Autonomic Nervous System, Mitochondria, and Purpose. Detoxification doesn't happen in a vacuum. It happens inside a body whose nervous system, mitochondria, and lymphatic flow either support the work or work against it. Below are the most impactful ways to actively strengthen each pillar.

Mitochondria

Mitochondria are the energy-producing engines of every cell. Detoxification requires significant energy, and impaired mitochondrial function is one of the most common reasons people stall on detox protocols. Daily practices that support mitochondrial health: morning sunlight on bare skin and eyes, deuterium-depleted water, red light therapy (Mito Red Light is our pick), periods of ketosis or intermittent fasting, regular cold exposure, daily exercise that includes both zone 2 cardio and resistance training, and targeted nutrients. Opti Metabolic and Mito Fusion are the two we lean on most.

Autonomic Nervous System

The autonomic nervous system regulates everything we don't consciously control. Detoxification is essentially a parasympathetic process; the body cannot effectively detox while in chronic fight-or-flight. Strengthening parasympathetic tone is one of the highest-leverage things you can do. Practical practices: daily breathwork (4-7-8, box breathing, or simple long exhales), nasal-only breathing during the day, mouth tape at night to maintain nasal breathing during sleep, regular cold exposure (cold showers, plunges), time outside in nature, prayer or meditation, and trauma work when needed. EMDR, Somatic Experiencing, and Internal Family Systems are all effective modalities for resolving stored stress that keeps the nervous system stuck in survival mode.

The Mitochondria-Detox Connection

Mitochondria are damaged by the same toxins this guide addresses, heavy metals, glyphosate, mycotoxins, EMFs, and chronic infections. As you reduce toxic burden, mitochondrial function improves. As mitochondrial function improves, your capacity to detox further also improves. This is why people often describe a turning point in detox protocols where energy and resilience suddenly increase. The body's engines are coming back online.

Movement and the Lymphatic System

The lymphatic system carries cellular waste and toxins out of tissues to be processed and eliminated. Unlike the cardiovascular system, lymph has no pump. It moves only when we move. Sedentary lifestyles cause lymphatic stagnation, which contributes directly to toxic buildup, swelling, and chronic inflammation. The most effective lymphatic practices: rebounding (gentle bouncing on a mini-trampoline) for 10-20 minutes daily, walking (especially after meals), dry brushing before showers (always toward the heart), inversion postures (legs up the wall), regular massage, and breathwork that uses the diaphragm fully.

What Purpose Looks Like in Practice

For some, purpose is faith. For others, it is family or marriage. For others, it is calling, vocation, or service. For most people, it is some combination of these. Detoxification is hundreds of small daily decisions made over years. Anyone can grit their teeth through a 30-day cleanse. Almost no one can sustain a clean life for decades without something larger pulling them forward. Find your reason and tend to it. The seed of purpose, watered consistently, becomes the tree under which an entire life of health can grow.

Purpose

The "P" in C.A.M.P. is purpose, and we put it in the framework because we've seen it matter more than anything else. People who feel that their lives have meaning, who are connected to something larger than themselves, who have something or someone worth being healthy for, succeed at the work of detoxification at far higher rates than those who don't. The body responds to whether the mind has a reason to thrive.

Bringing It Together

C.A.M.P. is not a checklist; it is a framework for paying attention to the four areas where most healing actually happens. Courage to make changes the culture won't make for you. An autonomic nervous system regulated enough to rest and digest. Mitochondria strong enough to fuel the work. And a purpose worth doing the work for. The protocols, supplements, and tests in this guide are the tools. C.A.M.P. is the foundation that determines whether the tools actually work.

TOXINS OUT

When it comes to removing toxins from the body, the process can be complex, especially if the toxins have been stored over time. If your exposure to toxins happened a while ago, most likely, you will be dealing with toxins that have been stored in your body. To effectively address these stored toxins, we break down the process into three essential concepts: challenging, binding, and excreting toxins. Additionally, we promote an approach we've coined the "6 Ps" to guide individuals through the detoxification process. These six processes focus on various ways the body naturally eliminates toxins and how to support those systems for optimal detox.

We'll dive deeper into each of these concepts in future discussions, but the key idea here is that effective detoxification involves supporting your body's natural ability to eliminate toxins through multiple pathways. Testing for toxins using functional medicine is also a critical part of the process to identify what's specifically affecting you.

CHALLENGING	BINDING	EXCRETING
Vegetables and Herbs	Binding Supplements	Coffee Enema
Epsom Salt Baths	Lymphatic Support	Infrared Sauna
Fasting	Hydration	Castor Oil Packs
Oil Pulling	Liver and Bile Supporting Supplements	Bowel and Microbiome Supporting Supplements
Chelation Therapy/Supplements		Ionic Foot Baths
Cold Immersion		Breathing exercises
Nutritional IV's		Exercise
		Hyperbaric Oxygen Therapy

CHALLENGING

Challenging a toxin essentially means drawing it out from the body. Most toxins tend to accumulate and get stored in tissues, particularly if the exposure happened some time ago. For recent exposures, the body may be able to eliminate them more readily, but for older, stored toxins, it requires more effort.

There are several ways to challenge toxins, but the most gentle and non-invasive methods involve incorporating specific foods into your diet that naturally help draw out harmful substances. Some of the most effective foods for this process include:

- Chlorella
- Cilantro
- Ginger
- Turmeric
- Spirulina
- Leafy greens (like spinach, kale, and dandelion)
- Broccoli
- Beets

If you're unfamiliar with these foods and wondering how to include them in your diet, juicing is an excellent option. It's also helpful to explore Pinterest or other recipe sources to find creative ways to incorporate these foods into your meals.

It's also worth mentioning that chelation therapy, which involves using substances to bind to heavy metals and other toxins so they can be excreted, is another method of challenging toxins. However, this therapy should always be done under the supervision of a medical professional. This is a service we do not offer at Chi Rho but can be considered for those dealing with significant heavy metal toxicity.

When it comes to heavy metals, detoxification can be particularly challenging. Our supplement of choice for this is Detox Synergy, which can support the process of challenging and binding heavy metals. However, when detoxing from metals or any potent toxins, it's important to do so under the guidance of a qualified practitioner.

Additionally, Epsom salt baths can be a very effective way to support detoxification, not only for heavy metals but also for other types of toxins. To reap the most benefits, use approximately four cups of Epsom salts in a warm bath and soak for about 20-30 minutes.

Another powerful method for challenging toxins is fasting. During fasting, the body burns fat, and because toxins often reside in fat cells, they are released into the bloodstream and can be eliminated. Additionally, fasting gives the digestive organs, such as the stomach, intestines, gallbladder, and liver, a chance to rest and repair. If you'd like to dive deeper into fasting as a detox tool, be sure to check out our [Fasting Guide](#).

Oil Pulling for Oral Detox

A natural and simple way to begin the detox process is oil pulling, which specifically targets toxins in the mouth. This practice is also excellent for improving overall oral health and is a non-toxic alternative to conventional mouthwashes that contain chemicals.

To practice oil pulling:

1. Take a tablespoon of coconut oil.
2. Swish it around in your mouth for 10 to 20 minutes.
3. Spit it out and rinse your mouth with water.

Oil pulling helps pull toxins from the mouth and supports general oral hygiene, making it an excellent first step in the detox process.

Binding Toxins: Using Natural “Binders”

After drawing toxins out of the body, the next step is binding them. A binder is a substance that "grabs" onto toxins, helping to remove them from cells and tissues, making them ready for expulsion. While the body has natural binders, supplementing with additional binders can be helpful if your detox pathways are under strain.

Our pick is [Ultra Bind](#), which is a unique blend of:

- Zeolite clay
- Activated charcoal
- Shilajit
- Fulvic acid
- Humic acid



These ingredients help bind toxins, making it easier for the body to eliminate them. When combined with Detox Synergy, this powerful duo helps expel toxins such as heavy metals, mold, pesticides, and other harmful substances from the body.

Expelling Toxins: The Final Step of Detoxification

The final step in the detox process is expelling the toxins from your body. The body has natural pathways for detoxification: sweat, breath, urine, and bowel movements. To optimize this process, it's important to first support your lymphatic system, liver, and bile.

Here are some ways to help the body expel toxins effectively:

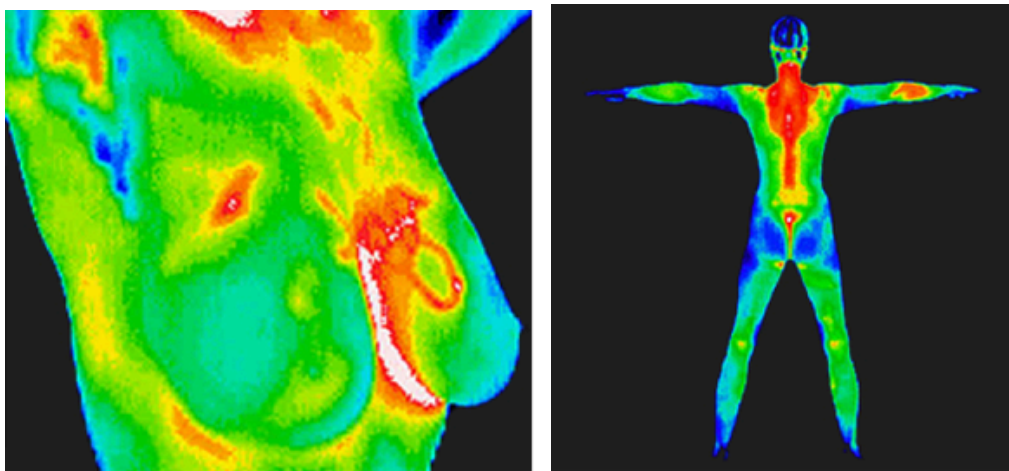
- Dry skin brushing: This helps stimulate the lymphatic system, promoting the movement of lymph fluid.
- Exercise and inversions: Moving your body and getting upside down encourages lymph movement.
- Vibration plate therapy: A great way to encourage lymphatic flow.
- Restorative sleep: The body detoxifies and rejuvenates while you sleep.

Additionally, oil pulling is an excellent method for drawing out toxins specifically from the mouth.

Thermography for Lymphatic Health

To ensure your lymphatic system is functioning properly and efficiently, Thermography testing is the tool we use. This non-invasive method helps detect lymphatic stagnation or inflammation, indicating whether your system is clogged with toxins.

We have a Thermography practitioner who visits our clinic quarterly, and we can connect you with local practitioners in your area if you're interested.



In the process of challenging, binding, and excreting toxins, the liver plays a crucial role in detoxification. As the body's primary detox organ, the liver filters and processes toxins, but it can easily become overtaxed due to the overwhelming number of toxins we encounter in our environment. Supporting liver function is essential for successful detoxification, and there are several ways to do this.

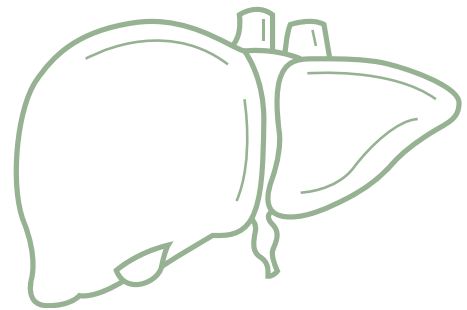


Iodine: A Critical Component for Detoxification

Iodine is a vital mineral for overall health and plays a significant role in detoxification, cancer prevention, and protection from halide toxins like chlorine, bromine, and fluoride, which are commonly found in our environment. Dr. David Brownstein's book, *Iodine: Why You Need It, Why You Can't Live Without It*, provides in-depth information on iodine and halide toxicity. Supplementing with highly absorbable iodine is essential, and we have specifically formulated our own iodine supplement to ensure optimal absorption and dosage per capsule.

Supporting the Liver:

One effective method is visceral manipulation, a hands-on therapy where a licensed therapist performs gentle physical manipulations to stimulate circulation in the abdominal area, particularly around the liver. This type of therapy can help promote detoxification by improving liver function and fluid movement.



Liver-Supporting Supplements:

Several supplements can help support liver function, especially when it is under stress due to high toxin levels:

1

Glutathione Supreme: Glutathione is a powerful antioxidant naturally produced by the liver, assisting in detoxification. Supplementing with glutathione can be helpful when the liver is not producing enough of this antioxidant on its own.

2

NAC (N-acetyl cysteine): NAC is a precursor to glutathione, and supplementing with it can help boost glutathione levels and support liver function.

3

Hepato Reset: This supplement is specifically designed to support optimal liver function and detoxification.

4

TUDCA (tauroursodeoxycholic acid): TUDCA is a water-soluble bile acid that directly supports Phase 3 detoxification by improving bile flow, which is what carries fat-soluble toxins out of the body. It is one of the supplements we rely on most in our practice, particularly for patients with sluggish bile flow, fatty liver, gallbladder issues, or no gallbladder.



Supporting Gallbladder and Bile Production:

During detoxification, it's essential to support the gallbladder and bile production, as these play an integral role in processing and eliminating toxins from the body. Here's how you can support these systems:

Stay hydrated: Hydration is essential for optimal liver and gallbladder function. A gel water recipe made with lemons or limes, Himalayan pink salt, and chia seeds can promote hydration while providing additional support for bile production. See the recipe listed below.

Essential vitamins A, D, E, and K: These vitamins are necessary for various aspects of detoxification, including bile production. It's important to ensure your body is not depleted of these essential nutrients. Consider getting baseline lab work to assess the levels of these vitamins and supplement accordingly.

PC Max: This phosphatidylcholine supplement aids in bile production and helps prevent bile stagnation, supporting liver detoxification and overall gallbladder function.

For those who have had their gallbladder removed, it's essential to support digestion through high-quality digestive enzymes. Our go-to here is Digest Support. Without the gallbladder, bile flow can be less regulated, which can affect digestion and fat absorption. Digestive enzymes help facilitate this process, ensuring the body can properly break down and absorb nutrients from food.



ChiRho Super Water Recipe

2 quarts of non-toxic water
2 tsp of chia seeds
1 tsp of IonicMag 500
The juice of one lemon
1 cup of 5 p.p. million deuterium-depleted water



The Importance of Melatonin and Its Detoxification Benefits

Melatonin, a hormone primarily known for regulating sleep, plays a far more significant role in overall health. It's been described as the most important housekeeping molecule for the brain. In addition to its sleep-enhancing properties, melatonin serves as a powerful antioxidant, anticancer, and neuroprotective agent. Most notably, melatonin aids in the detoxification of harmful substances like mercury, lead, and other neurotoxins.

Melatonin's detoxification benefits extend beyond its role in promoting healthy sleep patterns. It helps to stimulate the glial lymphatic system in the brain, which is responsible for draining metabolic waste and harmful substances from brain tissue. This is crucial for maintaining cognitive function and preventing neurodegeneration.

Melatonin's Detox Benefits:

- **Brain Detox:** Melatonin helps clear toxins like mercury and lead from the brain.
- **Antioxidant Properties:** It neutralizes free radicals, protecting brain cells from oxidative stress.
- **Supports Glial Lymphatic System:** Melatonin stimulates the brain's detox system, ensuring effective waste clearance.
- **Neuroprotective:** It protects against cognitive decline and promotes brain health.



Research on Melatonin

For those interested in understanding the science behind melatonin's incredible benefits, here are some pivotal studies and articles:

The Role of Melatonin in Brain Function and Detoxification:

- [Physiological Reviews - Melatonin](#)
- This article discusses the physiological role of melatonin in regulating sleep and its broader health benefits.

Melatonin's Antioxidant and Detoxification Properties:

- [PubMed Study - Melatonin's Role in Detoxification](#)
- A study that highlights the brain-protective antioxidant properties of melatonin.

Effects of Melatonin on Health and Aging:

- [PubMed Study on Melatonin and Aging](#)
- This research explores the effects of melatonin on aging, sleep, and detoxification.

Neuroprotective Effects of Melatonin:

- [PubMed Study on Neuroprotective Properties of Melatonin](#)
- A review of melatonin's neuroprotective benefits and its role in brain detoxification.



Legacy Pure Melatonin Supplements

At Chi Rho, we offer three premium Melatonin supplements, each tailored for different needs:

Melatonin Ultra: Designed for those who need a powerful sleep aid and detoxification support.

Melatonin Max: A higher dosage option for more significant detoxification benefits and sleep support.

Melatonin SRT (Sustained Release): A time-released formula that provides prolonged melatonin support throughout the night for steady detoxification and sleep enhancement.

Melatonin Supreme (Extended Release): A high-dose (25 mg) time-released formula that provides prolonged melatonin support throughout the night for steady detoxification and sleep enhancement.

Despite some voices in the health community that question melatonin supplementation, the science is clear on its benefits. By supporting sleep, detoxifying the brain, and protecting against oxidative stress, melatonin is undoubtedly a super supplement for overall health and well-being.



Detoxification Through Sweat, Urine, and Bowels

Once the lymphatic system and gallbladder have processed toxins, the body must expel these toxins through sweat, urine, or bowel movements. To support and enhance this elimination process, there are various methods you can incorporate into your detox routine.

Sweat Detoxification

Sweating is an effective way to release stored toxins from the body. Using a sauna is one of the best ways to facilitate sweating and detoxification. Regular sauna use can help promote deep sweating, which helps clear toxins from your skin and tissues.

Sauna Recommendations:

- **Find a high-quality sauna in your area, or invest in one for your home.**
- JNH Saunas is a brand we trust for its benefits in detoxifying through sweat.
- **Other Sweat-Boosting Activities:** Regular exercise and hot yoga are also excellent ways to promote sweating and toxin elimination. Both help stimulate sweat glands while providing cardiovascular and muscle-strengthening benefits.



Ionic Foot Baths

Ionic Foot Baths are another great tool for drawing out toxins, especially for those who prefer a non-invasive detox method. These foot baths work by creating a flow of ions that attract and draw out toxins through the soles of the feet.

- For Children and Non-Invasive Detox: Ionic foot baths are a great option for children or those who may not want more invasive detox methods.
- We recommend the Ionic Foot Bath from A Major Difference, as it stands out in terms of effectiveness compared to other foot baths on the market.

Hydration for Detoxification

Staying properly hydrated is essential to support the body's natural detoxification process, particularly when expelling toxins through urine and sweat.

Hydration Formula:

- Aim to drink half of your body weight in ounces of water each day.
- To enhance your hydration, try adding lemons or limes, Himalayan pink salt or Celtic salt, and chia seeds to your water for added minerals and hydration support.

Deuterium-Depleted Water:

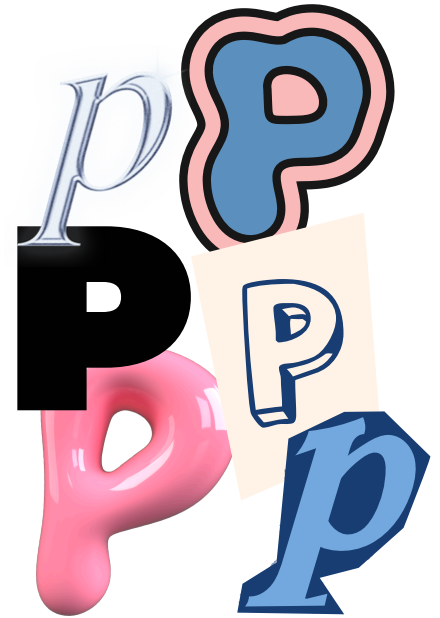
- For optimal detoxification, we also recommend hydrogen-rich and deuterium-depleted water. These special waters are known to support mitochondrial health, boost energy production, and aid in the detoxification process.

By incorporating these methods, sauna use, ionic foot baths, and proper hydration, into your daily routine, you can enhance your body's ability to expel toxins and improve overall health and vitality.



THE 6 Ps OF DETOX

Detoxifying the body involves multiple processes that work together to help expel toxins effectively. We refer to these processes as the 6 Ps of Detox. Below, we'll break down the critical elements that support each step in your detoxification journey.



1. and 2. Pooping and Peeing

A crucial part of detoxification is supporting the bowels and urinary system to eliminate waste. Ideally, you should aim for 2–3 bowel movements per day to support efficient detoxification.

Castor Oil Packs: These are an excellent way to encourage bowel movements and liver support. Castor oil packs work by increasing circulation and reducing inflammation. They can be placed on the abdomen, with specific targeting of the liver or bowels based on individual needs.

Queen of the Thrones is a great resource for learning about and buying castor oil packs.

Coffee Enemas: Coffee enemas can help promote detoxification, supporting the liver and colon. They work by stimulating bile production and facilitating the elimination of toxins. Use organic, mycotoxin-free coffee for best results.

Ben Greenfield's Coffee Enema Guide is a great resource for getting started with this practice.

Gut Support: A healthy gut microbiome is crucial for proper elimination. Supporting the gut includes avoiding inflammatory foods and taking gut-soothing supplements such as GI-Vive, GI-Butyrate, ION Biome, and GI Build Protein Powder.

3. Perspiring (Sweating)

Sweating helps expel toxins through the skin. In addition to sauna use, any form of sweating, including high-intensity exercise or Epsom salt baths, can be beneficial.

Saunas: Saunas are a great way to promote sweating. If you don't have access to one, alternatives like hot yoga, outdoor heat, and exercise can also help.

Regular Sweating: Aim to sweat every day to maintain a consistent detoxification process. This helps "habit" your body's detox system and encourage toxin elimination through the skin.

4. Panting (Breathing)

Breathing exercises and breathwork play a vital role in detoxification. Panting or controlled breathing techniques allow you to release stored toxins and calm the nervous system.

Wim Hof Method: This breathwork method is excellent for boosting the body's natural detoxification mechanisms. The Wim Hof method encourages deep, rhythmic breathing and oxygenates the body, aiding in the release of toxins.

Patrick McKeown's Oxygen Advantage: This is another powerful resource for learning controlled breathing techniques to enhance detoxification and overall respiratory health.

5. Parasympathetic (Rest and Sleep)

Rest, specifically through sleep, is critical for detoxification. The body cleanses itself during the night, particularly the brain. Ensuring adequate sleep allows the body to rest, repair, and remove toxins.

Oura Ring: The Oura Ring helps you track your sleep quality by measuring key metrics like REM sleep, deep sleep, sleep timing, and waking frequency. It's an excellent tool for improving your sleep hygiene.

Parasympathetic Nervous System: This is the "rest and digest" state, essential for detoxification. Stress can impede detox, so focusing on strategies that activate the parasympathetic system is vital. Techniques like meditation, gratitude journaling, spending time in nature, and chiropractic adjustments can help your body enter a parasympathetic state.

6. Protocol

A detox protocol involves specific steps to detoxify the body, such as supporting the oral and nasal microbiomes. These areas are often overlooked but play significant roles in overall health.

Oral and Nasal Health: Following a detox protocol that supports oral health, like oil pulling, and maintaining a healthy nasal microbiome can have profound impacts on the body's detoxification ability.

Testing: Regular genetic testing for specific SNPs (such as MTHFR) that affect detoxification processes can help you understand your body's needs. These SNPs might require additional support for effective detoxification.



ORAL PROTOCOL

1. Aggressively gargle for 30 seconds using the lo Mouth Rinse one to two times daily (do this before brushing your teeth). We use loRinse RTU in our practice. [Click here](#) to shop lo Mouth Rinse.

Note: Gargling is another way to activate the vagus nerve! So gargle, sing, and hum to activate the detoxification portion of your nervous system!



2. Brush your teeth with a non-toxic oral microbiome-supporting toothpaste upon arising and before bed. Happy Tooth is our pick. [Click here](#) to shop [toothpaste](#).

Note: Always choose a soft bristle toothbrush.



3. Use a medical grade stainless steel tongue scraper after brushing your teeth. We use this specific stainless steel tongue scraper [Click here](#) to shop tongue scraper.

Note: Brushing your tongue and scraping your tongue, in many cases, will elicit a gag reflex (which helps activate the Vagus nerve).



4. Next, brush your gums, tongue, and teeth with an ozonated toothpaste. Pur O3 mouth paste is our pick. [Click here](#) to shop PurO3.



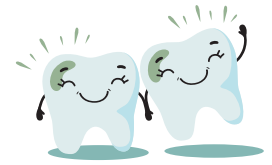
5. Use your tongue scraper again.

6. Repopulate your oral microbial fauna with a probiotic. Our oral probiotic of choice is Oral Opti Biome. [Click here](#) to shop Oral Opti Biome





DENTAL PROCEDURAL PROTOCOL



In addition to oral recommended products, we also have a specific oral protocol for pre and post-dental procedures.

Leading up to your oral procedure (start three days before):

- Opti-C30 – 3 capsules with your evening meal
- Detox Synergy – 3 capsules on an empty stomach either between lunch and dinner or before bed
- Ultra Bind – 2 capsules on an empty stomach either between lunch and dinner or before bed
- Melatonin SRT – 2 tablets at approximately 8:00 pm
- Daily Mag – 1 scoop in water at approximately 8:00 p.m. when you take your Melatonin SRT.

After the procedure:

- Opti C – 3 capsules with your evening meal for one week following the procedure
- Detox Synergy – 2 capsules twice daily on an empty stomach (one of the dosages can be before bed). Continue this until the bottle is gone.
- Ultra Bind – 2 capsules on an empty stomach twice daily (one of the dosages can be before bed). Continue this until the bottle is gone.
- Melatonin SRT – 2 tablets at approximately 8:00 pm
- Daily Mag – 2 scoops in water at approximately 8:00 p.m. for the first week after the procedure. Then, you can reduce it back to 1 scoop until the canister is gone.
- Follow all advice given to you by your oral care practitioner.

We use IoRinse RTU before and after all oral care. It is friendly to the oral microbiome and unfriendly to bacteria that don't belong in the mouth!

*** Children under 80 pounds will do ½ the dosage.

***Everyone's vitamin C bowel tolerance will be different. Opti C is very friendly to the bowels and highly effective at protecting against oxidation, supporting the healing process, and helping detoxify.

NASAL PROTOCOL

1. IO Mist: 2 sprays each nostril upon arising and two sprays before sleep.

[Click here to shop IO Mist.](#)

2. Wait 5 minutes after using the ION Mist Spray, then use three pumps of ION Sinus.



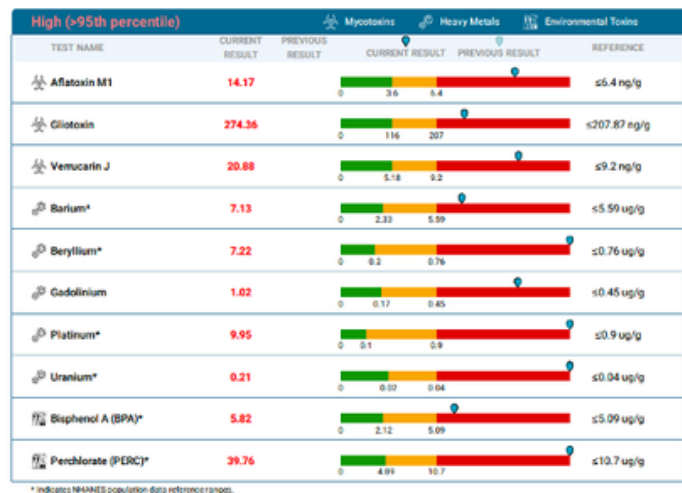
TESTING PROTOCOL:

Detoxifying stored toxins can be a complex process, and working with a healthcare provider can make it more effective. At Chi Rho we are here to support you on this journey. We offer functional medicine testing to identify specific toxins affecting your health and develop a personalized detoxification plan tailored to your needs.

Our testing services include:

- Mycotoxin testing for mold exposure
- Heavy metal testing
- Genomic testing to assess SNPs (single nucleotide polymorphisms)
- Deuterium testing
- Comprehensive bloodwork
- Micronutrient testing
- Organic Acid Testing
- Stool testing for gastrointestinal health
- Environmental toxicity testing to assess exposure to various environmental toxins

By identifying the root causes of toxicity, we help you create a clear and effective path toward better health.



The Toxin Zoomer (example results shown above) is an incredibly valuable and easy-to-administer urine test that provides clear insights into toxin exposure. This test can help you and your loved ones gain a better understanding of your toxic load and determine the necessary steps for detoxification.

When it comes to children, we are witnessing an alarming trend: massive toxin overload contributing to severe disruptions in brain function, nervous system health, and hormone regulation. The book Countdown offers a sobering look at the impact of toxins on children’s health, highlighting the urgent need for awareness and action.

MARCoNS Testing

Multiple Antibiotic-Resistant Coagulase-Negative Staphylococci (MARCoNS) is a type of antibiotic-resistant bacteria often found in individuals with chronic inflammatory conditions, particularly those exposed to mold or other environmental toxins. MARCoNS colonizes the nasal passages, producing biofilms that can trap toxins and weaken the immune system. Testing for MARCoNS is crucial for identifying hidden infections that may be hindering detoxification. If present, targeted treatment is necessary to clear the bacteria and restore a healthy microbiome, allowing for more effective toxin removal.

Micronutrient Testing

Micronutrient deficiencies can significantly impact the body’s ability to detoxify efficiently. Essential vitamins and minerals such as zinc, magnesium, vitamin C, B vitamins, and glutathione precursors play critical roles in liver function, antioxidant defense, and cellular repair. Micronutrient testing provides a comprehensive view of nutrient levels, helping to identify deficiencies that may be impairing detox pathways. By addressing these deficiencies through diet and supplementation, individuals can enhance their body's natural detoxification processes.

ABNORMAL				
	CELLULAR	SERUM	COMMON FOOD RESOURCES	SUGGESTED SUPPLEMENTATION
Vitamin C		↑	Red bell pepper, orange juice, grapefruit juice, kiwi, oranges, strawberries	
Vitamin K1	↓		Swiss chard, collards, parsley, broccoli, turnip greens	
AA/EPA	↑			

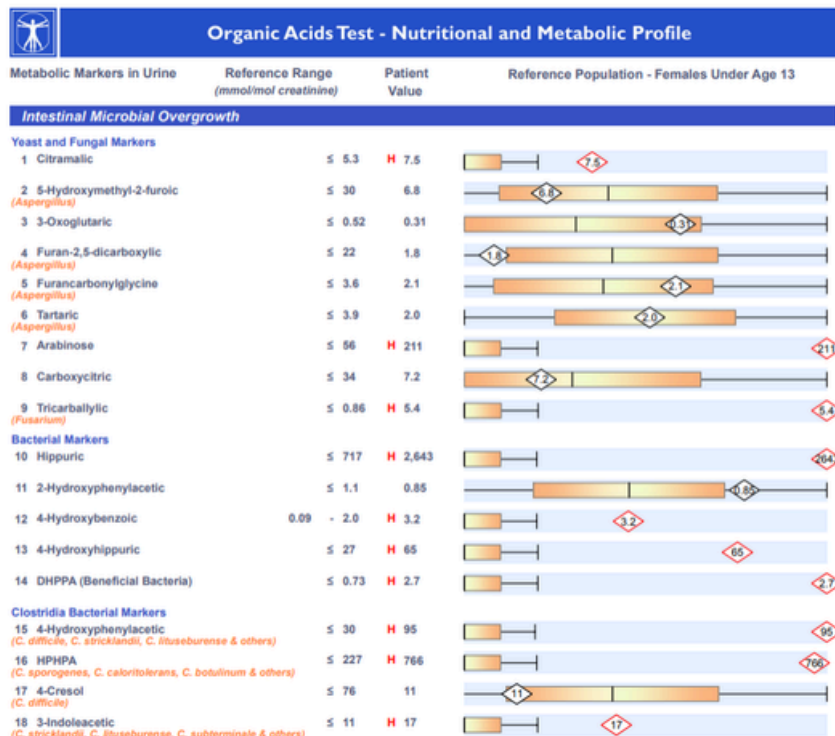
Gut Stool Testing

A healthy gut is essential for proper detoxification, as the gastrointestinal tract is one of the primary pathways for eliminating toxins. Stool testing provides insights into gut health by identifying imbalances in beneficial and harmful bacteria, yeast overgrowth, parasites, and inflammation. Poor gut health can lead to toxin recirculation rather than elimination, increasing the body's toxic burden. Addressing gut dysbiosis through targeted probiotics, dietary changes, and gut-healing supplements can improve detoxification efficiency and overall health.

Organic Acid Testing (OAT)

Organic Acid Testing (OAT) is a powerful tool for assessing metabolic health and identifying issues related to detoxification. This test measures byproducts of metabolism in urine, revealing imbalances in energy production, gut dysbiosis, neurotransmitter function, and oxidative stress. High levels of specific organic acids can indicate toxin exposure, mitochondrial dysfunction, or impaired detox pathways. OAT results can guide personalized detox protocols by identifying areas where additional support is needed, such as liver function, antioxidant status, or gut microbiome balance.

Each of these tests plays a vital role in understanding how toxins affect the body and provides actionable insights for optimizing detoxification strategies.





CONCLUSION

A final word from Dr. Terry Harmon

If you've made it to this page, I want you to know something: the work you're about to do matters. Every patient I've walked through this process has had the same quiet realization at some point: my body is more capable than I was told. Detoxification isn't a trend or a one-time cleanse. It's the natural function your body was designed to perform, and your job is to stop overwhelming it and start supporting it.

The strategies in this guide work. I've watched them transform health for thousands of people, including children whose recoveries I never would have predicted earlier in my career. But none of it works in isolation, and none of it works overnight. Pick one area to start. Make it a habit. Then add another. Small, consistent changes compound into a different life.

If you want help mapping the path that's right for your body, your home, and your family, my team and I would love to walk it with you. We offer comprehensive functional medicine testing and personalized detox protocols designed around your unique exposures, genetics, and goals. [Click here](#) to learn more about becoming a Chi Rho client.

You were made for vitality. Let's go get it.

— Dr. Terry Harmon

Updated and expanded April 2026 by Dr. Emma Sprague.

