

# Toxins That Derail Brain Health

Many of the day to day chemical compounds we are exposed to lead to brain damage. For example, there is a type of Alzheimer's disease termed "Inhalational Alzheimer's." This type of dementia is a direct result of inhaling toxins such as mold spores, off-gassing building materials, cleaning chemicals, and more. On the following pages is a list of the most damaging environmental toxins to avoid for optimal brain health. Keep in mind, these are the best known ones and there are thousands of chemicals that have not yet been studied or understood. In 1976 there were tens of thousands of chemicals grandfathered into the "safe to use" category when our first standards were developed. That means that the chemicals introduced before 1976 were never actually tested and were assumed to be safe. While some of them have since gone through testing, there are still thousands that our government agencies are assuming are safe, without any evidence as such. You may believe that there is rigorous testing and safety standards that are protecting you from the toxins found in consumer products today, but the truth is, there are still not any robust laws that require chemicals to be tested for safety before they come to market. Only about 20% of the 82,000+ chemicals used in commerce have been tested at all. As a result, the problem of toxicity in our society is reaching pandemic proportions!

If you are planning to be a parent and raise children someday (or already are), pay close attention to this section. These toxins will get passed directly to the growing fetus when a woman is pregnant, which will affect the brain development of the child. These toxins are highly linked to neurodevelopmental disorders such as autism and ADHD. As these chemicals can cause permanent alterations in brain development, a mother's health before and during pregnancy has an impact on her child's entire life.

If you are a middle aged adult, it is time to start focusing on mitigating toxin exposures. Detoxifying and avoiding neurotoxins (brain toxins) help prevent neurodegenerative diseases like Alzheimer's, Parkinson's, and MS. If you or a loved one is already suffering from these diseases, detoxification is the path to restoring your brain. Yes, these diseases can be reversed! However, it is much more difficult to reverse and halt these diseases than it is to prevent them in the first place.

## **Symptoms of Brain Toxicity:**

- Poor memory
- Poor attention/concentration
- Problems with balance and coordination
- Erratic moods and behavior
- Confusing and misusing words
- Headaches and migraines
- Dizziness/vertigo
- Cravings/addictive personality
- Fast mental decline (from an acute, recent toxin exposure)

On the following pages I start by listing out the worst toxins so you can be aware of the issues. In the second half of the document I discuss ways to avoid and start removing these toxins from the body.

# Brain Damaging Toxins to be Avoided

## Indoor Molds

Get your home and work air tested for mycotoxins (mold toxins). Regular inhalation of these mold spores is at the root of many brain disorders and chronic health issues. Not nearly enough people are talking about this. Clues that you may be in a moldy environment can be any brain symptom, including: brain fog, poor memory, depression, fatigue, anxiety, and more. You may also experience sneezing, coughing, watery eyes, or itchy skin when being exposed to mycotoxins.

## Fluoride

Often added to dental products and municipal water sources, fluoride will calcify your pineal gland in your brain and disrupt your circadian rhythm. This can be a cause of “unsolvable” sleep problems/disorders. It also inhibits brain growth. Topical fluoride is generally not an issue (like in toothpaste), but we can easily become over-exposed from municipal drinking water.

## Automobile Exhaust

Toluene (found in gasoline), carbon dioxide, carbon monoxide, and particulate matter are inhaled anytime we drive; especially if windows are open or if you are venting air from outside (from the car exhaust around you). It’s especially a problem when sitting in traffic, so make sure to roll up the windows and circulate air through the interior cabin filter of your vehicle when in traffic.

## Ethanol

Good old alcohol. Yes, in any form, all of it damages the brain. Alcohol is shown to shrink brain size, increases dementia risk, decreases blood flow to the brain, impair decision making, turn people aggressive, lead to higher rates of incarceration and low socio-economic status, and increase rates of nerve pain, bowel diseases, liver diseases, and cancer. There are many reasons to not drink alcohol.<sup>44</sup> That being said, red wine is packed with resveratrol, which is a great brain antioxidant. This is the only alcoholic beverage that can be used with a minimal brain impact. Of course, grapes are often contaminated with many pesticides and glyphosate (especially if from California). Choose **biodynamic** wines (better than organic) whenever possible, if you choose to indulge on the occasion.

## Polychlorinated Biphenyls (PCBs)

This chemical class was banned in 1979 for causing cancer and disrupting immune, hormone, reproductive, and nervous systems of the body. They were used in old plastics and rubber products, which still end up in our water supply as they breakdown in landfills. As a result (although they were banned) they persist in our environment, especially in drinking water.

## Organophosphate/Organochlorine Pesticides

Pesticides such as Chlorpyrifos, which is classified as “very highly toxic” to birds and fish, and “moderately toxic” to mammals, is used widely on non-organic foods, house plants/nurseries, wood products, golf courses, and more. Eating organic will reduce some exposure, but again, we tend to get exposure from our water sources or from the air if you live nearby places using them.

## **\*\*Glyphosate Based Herbicides\*\***

Herbicides, especially Round Up, have been of recent interest in the battle against neurological disease. According to Dietrich Klinghardt, MD, this chemical will bind to aluminum (aluminium) and shuttle it right past the blood brain barrier where it causes severe brain damage. Glyphosate is also implicated in creating manganese deficiencies and contributing to Alzheimer's, depression, anxiety, Parkinson's, and prion diseases. I suspect these herbicides are likely behind the huge influx of intolerances to wheat, corn, soy, sugar, and coffee that we are observing in the last 2-3 decades. This is one of the reasons I recommended avoiding these foods in module 3. For multiple reasons, glyphosate is being implicated as one of the major causes of many of our modern diseases.

## **Diphenylamine**

This chemical is used as a spray on apples to prevent browning. It is known to disrupt and damage brain mitochondria, the cell organelles responsible for cellular metabolism, which leads to poor cognitive function and mental decline.

## **Chemicals from Smoking**

There are over 200 chemicals found in cigarettes! It goes beyond just tobacco. Marijuana is another potential brain toxin, especially since smoking it leads to decreased blood flow to the areas of the brain used for learning and memory. Vaping has been a recent response to the toxicity of smoking, however, we are learning that vaping turns out to be especially toxic due to the solvents and chemicals used to extract tobacco or marijuana compounds. Second hand exposure to any of these forms of smoking is toxic as well so make sure to avoid friends or family who insist their vaping habit is OK to be around.

## **Tetrachloroethylene (PERC)**

Exposure from dry cleaning products is the most common route of contamination. PERC causes brain cancer and is found to be neurotoxic even at small doses. If you must use dry cleaning services, opt for green dry cleaners that use non-toxic agents.

## **Polybrominated Diphenyl Ethers (PBDEs)**

Also known as flame retardants, these are found in insulation of buildings, furniture, toys, clothes, engine coolant, airplanes, and anything that might be flammable. These will interfere with thyroid function, reproduction, and cause neurological problems in high dose. Unfortunately, they are everywhere, and you may not really be able to avoid them.

## **Mercury**

Especially methylmercury, will lodge itself in the brain and destroy the brain's ability to create new nerve fibers and repair itself, leading to permanent impaired memory, learning, and behavior problems. Mercury can be found in high amounts in coal where coal burning releases it into the air and surrounding environment. It can be found in water tables and in many predatory fish (like tuna, see the seafood guide from module 3). However, the most common exposure in humans is from dental amalgam. Mercury is released from these metal dental fillings every time you chew, brush your teeth, or drink something hot. If your dentist still uses these types of fillings, absolutely find a new dentist. Ultimately, part of healing you brain will be to have these amalgams removed by a biological dentist.

## Lead

Despite our control efforts, lead still exists pervasively in the environment. It's not only lead paint! Babies will put anything in their mouth, like that little trinket on the nightstand or that toy necklace from China you had no idea was made with lead. When I have screened my own blood for toxins I have found MTBE, the old gasoline additive, somehow is getting in me. This stuff is insidious. To this day lead can still be found in glass, cosmetics, ceramics, old lead pipes, old peeling paint, aviation fuel (which leads to lead raining down from above), and batteries, to name a few. Even processing of our food can add lead to it (e.g. powdered spices like turmeric or ginger from India, or flours made from wheat, rice, corn, cassava, or potato). It is so pervasive that it is worth testing your backyard soil if you have a garden and grow your own food.

## Aluminum

Most exposure comes from inhalation, drinking water, aluminum adjuvant vaccines, food contamination, and antacid use. Avoiding aluminum cookware (used in most restaurants) can help decrease exposure, as can a water filter. This potent neurotoxin becomes much worse when combined with glyphosate, as the herbicide will help shuttle aluminum past the blood brain barrier. It has been implicated in major brain disorders such as autism, Alzheimer's, Parkinson's, and MS.

## Arsenic

Arsenic can still be found in pyrotechnics (e.g. fireworks), ground water (especially near old orchards and farms that used arsenic based pesticides), and in foods grown in contaminated conditions (such as rice). Arsenic is a lesser known cause of anxiety and restlessness, cancer, impaired cognitive function, diabetes, and is a risk for Alzheimer's disease.

## Food Additives

Bromates, nitrites, nitrates, tartrazine dye, monosodium glutamate (MSG), food dyes, aspartame, saccharin, sucralose, and more are included in this group. There is more complete list of food additives to avoid on the shopping guide for printing out in module 3. Each one listed has research behind it showing increased risks of many diseases.

**The above list is by no means exhaustive.** What's listed are simply the best known and researched health damaging toxins we know at this time. The CDC has run experiments testing chemicals in Americans' urine and has found well over 200 chemicals (on average) in every American! Those are just the ones they are looking for, but there are still many more that might be significantly damaging the health of our bodies and brains.

## **Foundational Solutions for Detoxifying the Brain**

If you would like to be tested for your own toxin exposures, that is possible. You will have to become a patient of a doctor who can order these tests. They are not the cheapest, but if you want to know what is in you before spending money on detox treatments, it may be worth it. I believe that there is so much exposure in our world that everyone needs to be working on detoxification and avoidance of toxic exposures. The testing is most useful for motivating people to start working on their toxin load. Whether or not you decide to test, I encourage you to start implementing the below strategies today.

### **Avoid Exposures as Much as You Can**

Avoiding these toxins is essential and not particularly difficult with some awareness. In addition to avoidance, we must acknowledge that you have likely already been exposed to toxins, many of which have gotten stuck and continue to damage your brain (heavy metals are notorious for getting stuck in the brain). You certainly want to continue to avoid things on the list above so get familiar and always be on the lookout for these contaminants. Do your best but realize you will likely still get exposures and still need to actively stimulate detox mechanisms in the body with the strategies in this guide.

### **Get Your Sleep in Order (as discussed in Module 2)**

### **Follow the Dietary Guidelines Given (in Module 3)**

This diet guideline was designed with the toxic nature of our world in mind. Many of the healthy foods are geared towards enhancing your innate detoxification systems. I also encourage you to eat organically, non-GMO (genetically modified organisms), non-processed foods, that are not stored in plastic packaging as much as possible. Our most problematic crops are wheat, corn, soy, sugar, and coffee. Also, the animals that consume these foods will transfer toxins through their meat/fat and eggs, which is why it is so essential to eat pastured animal products that do not get fed these crops that are contaminated with herbicides and pesticides.

### **Drink Enough Filtered Water Daily: 64oz daily for a 150lb adult (do more or less depending on your size)**

You need enough water in your diet in order to have great, daily bowel movements and be able to handle the necessary high fiber diet that I recommend. Without enough water a high fiber diet can be constipating, which increases toxins in our bodies. Water is also essential for keeping your kidneys filtering toxins from your blood. Your kidneys are one of your most powerful detox organs (we call these organs emunctories). Furthermore, water is essential for your brain to function! If you are getting tired, foggy brained, depressed, unfocused, or have other issues associated with poor brain function, try drinking a couple glasses of water and see how much changes. You could just be dehydrated.

### **Get a Drinking Water Filter**

One of the major ways we get exposed to many of these toxins is through our drinking water. It is amazing that we have established water sources that do not give us gastrointestinal illness anymore. Poor water used to kill many, many people. I love that we have much safer water these days, however, industrial toxins in our water and even chlorine have become a major concern. I highly recommend

getting a high quality water filter that can eliminate these brain toxins. Unfortunately, many of the common filters on the market are simply not sufficient. The filtration systems that reduce the most toxins use reverse osmosis, however, this process wastes way too much water and strips your water of any of the healthy minerals it contains. Consuming too much of this kind of water can end up damaging your health (you have to add minerals back into it to prevent this). I have found that the best filter on the market right now is the Berkey water system with the added fluoride filters. I have no affiliation with this company, but have found they are reasonably priced and will remove the necessary toxins.

### **Get a Shower Filter**

Unfortunately, a drinking water filter is not enough. Much of tap water is used for showers and bathing. When water is heated it will vaporize and release more toxins (especially chlorine byproducts), which are then inhaled and go straight to the brain while you are cleaning yourself. For that reason it's important to have a shower filter. There are many inexpensive ones that will at least take out these chlorine byproducts that damage your blood vessels and brain.

### **Improve Lymphatic Flow from the Brain**

As discussed in Chapter, the lymphatic system of the brain is most active when sleeping at night. Once toxins move through this system they enter the lymphatic system of your neck. They then flow downward to the heart, return to the blood circulation, and ultimately end up at the liver and kidneys where they will be eliminated. If the lymphatic chains are congested or blocked in any way, you will continue to have very poor brain detoxification processes (just like clogged pipes can't drain). There are a number of natural medicines and drainage procedures that can be used to improve this lymphatic movement. I highly recommend working with a doctor who understands this physiology and the techniques to get your lymph flowing. Especially consider getting assessed if you have a history of chronic sore throats and infected tonsils as a kid or had to have your tonsils and adenoids surgically removed. One of my favorite supplements to aid in this process is called "**Lymphatic Detox**" by the company **Cell Core Biosciences**. I have included the information necessary to order this supplement at the end of this document.

### **Improve Blood Flow to the Brain**

Movement and exercise is our best tool for increasing blood flow to the brain! It's free and simple, just get your blood pumping, and get a sweat going. Research is quite clear that increases in physical activity improve brain health. Also, using your mind to learn and concentrate (like learning new skills or playing chess) will increase blood flow to the brain. There are also certain supplements that are known to enhance blood circulation to the brain; however, I do not recommend starting these without the supervision of a doctor. Some of these herbs can thin blood and interact with medications, so always check in with your doc. For those who are interested, two of the primary supplements to help with this function are the herb ginkgo biloba and the enzyme nattokinase. You can find both of these in an incredible detox product I discuss at the end (Clearway Cofactors).

## **Have a Bowel Movement at Minimum Once a Day (2-3 per day is ideal)**

The main powerhouse of detoxification in the body is the liver. Once the liver has processed toxins they are made water soluble and can be eliminated safely. The majority of toxin elimination is then done through either the kidneys or the stool. The liver will dump many toxins into the intestinal tract by secreting bile salts. This bile is used to absorb fats in the diet and is released every time you eat a meal (with fat in it). One of the easiest strategies to remove toxins from the body is to increase the amount of bile that is being excreted (and thus amount of toxins excreted). Consider digestive bitters for aiding in digestion. Bitters increase bile secretion, making them a helpful detoxification agent. However, just secreting more bile is not enough. That bile also needs to be bound to something else so that it is not resorbed (called entero-hepatic-recirculation) in the colon. **This can be done simply by ensuring you get enough fiber in your diet.** Fiber will attach to bile salts and force you to excrete them with your bowel movements. If there is not enough fiber in the diet, the bile salts will instead get resorbed/recycled and the toxins will end up right back inside of you. By consuming a minimum of 30 grams of fiber (ideally over 50g) daily you block resorption and effectively eliminate more toxins from the body. More fiber in the diet will also help you have more bowel movements, especially if consuming enough water to keep that fiber moving through your intestines.

## For More Advanced Support

### Support the Liver

I discussed the role the liver plays in detoxification in the paragraph above and how bitter tonics can help excrete more bile and thus more toxic compounds. Bitters do this by stimulating gallbladder contraction. However, some people have had their gallbladders removed or have thick, sludge like bile that is practically stagnant, blocking their livers from effectively functioning. In these cases, it is essential to thin out the bile with certain dietary supplements. My two favorite supplements for this are **taurine** and **phosphatidylcholine**. Both of these also have added brain benefits that go beyond aiding in this detox process. Taurine is an amino acid that is excellent at calming down the brain and has proven useful in seizure disorders and anxiety disorders. Phosphatidylcholine also helps build the neurotransmitter acetylcholine, which is essential for memory and the very important methylation processes in the body. Methylation biochemistry is essential for proper detox biochemistry to happen as well as biochemical processes that regulate brain neurotransmitters to help us keep a balanced mood, focus, drive, memory, etc.

One of my favorite formulas for helping open up the liver and kidneys for improved detoxification is from the company **DaVinci Labs**. Their product named, "**Detox Benefits**" is perfectly formulated to gently stimulate these processes. When you go to their website you will see all of the ingredients and an explanation as to what each one does and why it is in the formula.

**Caution:** liver detox supplements can change how drugs are metabolized in your liver and should not be tried without doctor supervision. However, if you are not on medications and feel you are ready to give liver and kidney detox a try, you can purchase from my [medicinary](#) (see end of document for link).

## **Work With a Doctor Proficient in Detoxification**

If your doctor(s) don't know anything about detox or immediately write it off and tell you it's nonsense, get another opinion. Unfortunately, there can be bias among medical doctors, especially when it comes to approaches that are alternative to what they know. If it sounds like maybe your doctor is being biased, get a consult with a naturopathic doctor or another kind of doctor that is passionate about improving detoxification mechanisms in the body. As you can see from the citations in this chapter, brain toxins are a real thing and are a big part of the chronic diseases we are seeing today. The right doctor can help you with ordering tests to assess your toxin levels and detoxification abilities of your individual body. When in doubt, get a test done and find out what your actual body burden of toxins is. If you are particularly concerned about heavy metals (most people should be) then you will need to get two heavy metal urine tests. The first test is to get a baseline and see what is coming out of your body naturally. The second urine test is called a provoked urine test, as it is done after taking agents that release heavy metals from where they are stored in the body. Comparing the numbers of the two tests gives you the most accurate idea as to what heavy metals are stuck in your body. There are also very comprehensive laboratory tests to assess hundreds of other toxins that are known to accumulate in the human body. You will want to work with a physician to access these.

Detoxification is a critical piece in creating a life-long, healthy brain.

# The Most Important Supplements for Brain Detox

## Fulvic Acid Extracts

These extracts come from ancient freshwater lake beds that have been composting and compressing decayed organic material (known as peat) for many years. These deposits contain many naturally occurring, plant-derived, trace element minerals and amino acids that support many processes in the body, especially detoxification. Here is a list of their functions:

- Helps deliver nutrients to the brain which supports increased energy, focus, and alertness.
- Optimizes liver function, our most important detox organ. A healthy liver functioning at peak performance protects us from many of today's diseases.
- Contains nanonized compounds small enough to cross the blood brain barrier, so they can actually bind toxins that have been trapped in the brain.
- Will bind toxins in the body and carry them out without doing damage.
- They are the best known way to detoxify glyphosate (and other herbicides and pesticides) from your body. It should be taken anytime you eat as this will protect your microbiome and health from the effects of these toxins (10 drops, 3 times per day, 30 minutes before eating is ideal).
- **These extracts are so powerful they can actually reverse part of the pathology of Alzheimer's disease by promoting the disassembly of tau proteins in the brain!**

My favorite fulvic acid product at this time is called "**BioActive Carbon Minerals**" which is produced by the company **Cell Core Biosciences**. This product is generally safe to take, however, remember to consult with a knowledgeable doctor to make sure there are no contra-indications for you. (Many doctors will likely have never heard of this, so you will want to establish a relationship with someone that understands brain detoxification.)

If you do decide to bring it into your regimen you will need to order directly from the company and will need a practitioner code to do so. Here is the link: [www.cellcorebiosciences.com](http://www.cellcorebiosciences.com)

When you create a customer account they will ask for a practitioner code, you can use mine:

**DLZJAGP3**

These extracts should be taken sublingually (under the tongue). Hold them there as long as you can to increase the absorption into the brain.

(This is also where you can pick up the product I mentioned earlier: **"Lymphatic Detox"**)

## A Comprehensive Brain Detox Formula

Another of my favorite brain detox supplements is called “**Clearway Cofactors**” from the company **Quicksilver Scientific**. This company is known for making excellent detox products. It contains an essential ingredient: Haritaki (*Terminalia Chebula*) fruit extract. This traditional Ayurvedic herb has been shown to increase acetylcholine in the brain as well as increase the action of glutathione. Glutathione is what we call, “the master antioxidant” in the body. In other words, it is the most important compound our bodies make in order to get rid of toxins. N-acetyl-cysteine (NAC) is another compound that is used by the body to create glutathione, but Haritaki actually stimulates the existing glutathione into action. In fact, the combination of these two nutrients can be extremely powerful. Both of them show great promise for helping eliminate Alzheimer’s disease. Clearway Cofactors has the haritaki but NAC must be picked up separately (it’s in the **Liver and Kidney Support** supplement from Cell Core Biosciences). Clearway Cofactors also has Bacopa monnieri and Gotu kola (which help regenerate the brain and balance its functions), nattokinase (which thins the blood and improves blood flow to the brain), R-lipoic acid (an essential compound for picking up toxins in the brain and shuttling them out), and pomegranate extract (an antioxidant that picks up damaging free-radicals). I use this product with any of my patients that have advanced neurological conditions, such as Parkinson’s, Alzheimer’s, chronic Lyme, or MS. Remember to only start new supplements under doctor supervision. If you want to know how to get it, here’s the link to my medicinary:

<https://us.fullscript.com/welcome/drschull>