

Healing from Botox Poisoning

Resources, Education & Tips for
Your Healing Journey

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READ THIS FIRST

This book is a practical guide created specifically for people affected by Botox poisoning, also known as iatrogenic botulism, offering basic education about the condition, curated resources, and everyday tips to support recovery and adaptation. The terms “Botox poisoning” and “botulism” are used interchangeably throughout this book to refer to the same illness that can occur when botulinum toxin injections spread systemically throughout the body and nervous system.

IMPORTANT: This book is not a source of medical advice, diagnosis, treatment, or evaluation, and it should never replace guidance from qualified healthcare professionals. It is imperative that anyone who suspects they are suffering from Botox

poisoning (iatrogenic botulism) is under the direct care and supervision of a trusted medical professional at all times.

Everyone's experience with Botox poisoning and healing is unique, and healing does not follow a single timeline or path. This guide is not meant to create fear or anxiety about recovery, but rather to empower you with knowledge and resources, so that you can better understand your illness and advocate for yourself with confidence.

You don't need to read this book cover to cover or in one sitting; it is designed to be flexible. Simply jump to the sections that feel most relevant to your current needs, skip parts that don't apply, and return to different chapters as your recovery progresses. If you

only read one chapter, I recommend

Chapter 3 - Whole Body Healing.

When experiencing adverse effects related to Botox and other botulinum toxin injections, taking organized and proactive steps is important.

- Adverse events can be reported to regulatory agencies such as FDA's Medwatch (US), Yellow Card Scheme (UK), EudraVigilance (EU) or other appropriate national reporting systems to help improve safety monitoring and awareness.
- Preserve your complete medical records, including treatment dates, product information for the toxin you received, symptom timelines, and test results, as these can be valuable for continuity of care.

- Seek second opinions from qualified healthcare professionals if necessary for additional perspectives

GO TO THE ER / CALL EMERGENCY SERVICES IMMEDIATELY if any of the following occur at any point in your recovery journey:

- Progressive breathing weakness
- Aspiration or choking
- Worsening paralysis
- Serious arrhythmias and/or other cardiac concerns

Please have a trusted and supportive loved one read any sections that are unclear or difficult to understand.

Do not hesitate to reach out to Megan with any questions: metoxpretty@gmail.com

MEDICAL DISCLAIMER

Hi, I'm Megan. I'm not a doctor, an epidemiologist, a microbiologist, or researcher. **I'm not a botulism expert.**

I'm a woman who developed botulism symptoms (known as "Botox poisoning") after receiving botulinum toxin injections (Xeomin brand) for the first time in 2024 (12 units to the crow's feet).

I also happen to be a medical speech-language pathologist and writer, two skillsets that have likely contributed to my insatiable need to learn everything I can about the illness I lived through, and communicate what I've learned with you all!

The information in this book was gleaned from the medical literature, my own experience living with botulism symptoms,

and anecdotal data from the 6,000+ group members in my “Botox Side Effects and Botox Poisoning Support” Facebook support group.

Most importantly, this information is not medical advice. Anyone who is suffering from Botox poisoning should be under the careful supervision of a trusted healthcare provider at all times during their illness.

Please, never begin or discontinue any supplements or medications without first consulting with a trusted healthcare provider.

1. UNDERSTANDING BOTOX POISONING

IN THIS CHAPTER:

- What is Botox poisoning?
- Botox poisoning symptoms
- Healing from Botox poisoning
- Long-term outcomes

WHAT IS BOTOX POISONING?

Botox poisoning, also known as “iatrogenic botulism”, is a nervous system illness caused by botulinum toxin, which is produced by the bacterium *Clostridium botulinum*. This toxin is the most potent neurotoxin on Earth. It attacks the nervous system by blocking neurotransmitter and neuromodulator communication between

nerve cells and/or between nerve and muscle cells. Neurotransmitters and neuromodulators are the chemical messages our nervous system “runs on” in order to function properly. Neurotransmitters that can be disrupted by botulinum toxin include acetylcholine, glutamate (and, as a result, GABA), dopamine, serotonin, and norepinephrine (and likely more in the central nervous system).

The illness that can occur after Botox and other botulinum toxin injections is a form of poisoning rather than a bacterial or viral infection; therefore, treatments such as antibiotics or antivirals are not effective.

Disruption of the nervous system by botulinum toxin can cause a wide range of symptoms, depending on where the toxin “lands” in the body after injection. Symptoms

occur along a spectrum and can vary greatly in severity, from mild and temporary to severe and life-threatening.

Botulinum toxin can disrupt both the peripheral nervous system (PNS) and the central nervous system (CNS). Botox poisoning can also trigger secondary medical conditions in the body involving the immune, endocrine, and vascular systems.

Below is a (mostly) complete list of possible symptoms after Botox poisoning, as documented in the Botox product insert and Dr. Hristova's research on iatrogenic botulism victims.

BOTOX POISONING SYMPTOMS

- **Central nervous system (CNS):** Brain fog, disorganization, mental fatigue, phonophobia (aversion to loud noises),

photophobia (aversion to bright lights), short term memory loss, slow processing speed, word finding difficulties

- **Psychiatric symptoms:** Anxiety and/or panic attacks, depersonalization, depression, derealization, feeling hopeless, fixation on symptoms, mood swings, suicidal ideation
- **Peripheral nervous system (PNS) - Somatic Nervous System (which includes sensory neurons):** Burning sensations in the mouth/head/limbs, “buzzing” feeling in the nerves, choking sensations, itching sensations, muscle weakness/paralysis, nerve pain, nerve “zaps”, parasthesias (“pins and needles” feeling)

- **PNS - Autonomic Nervous System**

(including the cranial nerves):

Abdominal pain, appetite/weight loss, dizziness and nausea, dry eyes, dry mouth, dysphagia (difficulty swallowing), dyspnea (difficulty breathing), dysarthria (slurred speech), dysphonia (hoarse voice), constipation/gastroparesis, ear disorders (congestion, tinnitus, pain, deafness), heart palpitations/arrhythmias/ Chest pain and pressure/ cardiac arrest, insomnia, night sweats, UTIs/urinary retention, vision impairments

- **Other:** Alopecia (hair loss) and madarosis (loss of eyebrows and eyelashes), loss of libido, itchy skin, menstruation changes in women, loss

of muscle mass, changes in skin texture/moistness, swollen glands

- **Secondary Medical Conditions that have been reported after poisoning, in either Dr. Hristova's research or in the Botox Side Effects and Botox Poisoning Support Group:** Mast Cell Activation Syndrome (MCAS), histamine intolerance, Lyme, Post orthostatic tachycardia syndrome (POTS), dysautonomia, orthostatic hypotension, ME (myalgic encephalomyelitis), and reemergence of dormant viruses, including Epstein-Barre.

HEALING FROM BOTOX POISONING

The body heals gradually by repairing the nerve function that was disrupted by the toxin. This process involves the following:

Nerve terminal regeneration: Botulinum toxin does not typically cause permanent damage (although permanent damage has unfortunately been reported in some cases). Rather, it disables the nerve endings that allow neurotransmitter communication between nerves, and nerves and muscles. Recovery occurs when:

- Nerve endings begin to sprout new dendrites, and new connections (synapses) form between two nerves, and/or nerve and muscle fibers.
- This regeneration is slow and can take weeks to months to years, depending on how much toxin has spread, where the toxin spread, and the age/overall health of the victim

Muscle reconditioning: If paralysis or weakness occur, muscles may atrophy from lack of use. As nerve signals return:

- Muscles gradually regain strength.
- Physical and respiratory therapy can help restore function and endurance, however many note that aggressive therapy within the first 3-6 months post poisoning can worsen symptoms.

Central nervous system (CNS) recovery: The brain and nervous system adapt as signals return

- Coordination, speech, swallowing, and vision may improve gradually as neural pathways are relearned and refined
- CNS symptoms seem to persist the longest for many individuals with botulism.

Recovery is often **not** linear.

Improvement comes in small increments, with plateaus and fluctuations. Many report their symptoms come and go, and some experience full relapses that last for weeks or months. The healing timeline varies widely depending on many factors, including how much toxin spread, if antitoxin was given (and how quickly), overall health and age of the victim, which nerves were involved, and whether or not the body develops any secondary medical conditions post-poisoning.

Many have reported the following can cause symptoms to worsen or flare up:

- vigorous or strenuous exercise, even if this was your “norm” prior to poisoning
- stress and overexertion of any kind

- lack of adequate sleep and/or nourishment
- illnesses or other toxins, such as viruses, bacterial infections, bee stings, exposure to mold and/or fungi
- monthly cycles (women)
- high histamine foods (more on MCAS later)
- chemicals/fragrances in common household and beauty products
- certain antibiotics (including fluoroquinolones and aminoglycosides)
- vaccines (in the first year after poisoning)

The whole body is under attack in Botox poisoning, and as such, healing is not just a matter of “fixing” one or two symptoms. Because botulinum toxin is the most potent neurotoxin known to man, the

recovery process can be a lengthy and complicated one. This illness is not a skinned knee, the flu, or even a broken bone. It is a serious neurological injury, and we must respect the enormous task our bodies are faced with while healing.

Self-care is a foundational part of healing, as recovery affects the body, brain, and nervous system as a whole; these are not just isolated symptoms.

- Nourishing the body with organic, whole foods helps reduce exposure to pesticides and additives while providing the nutrients needed for nerve repair, muscle rebuilding, and immune balance.
- Prioritizing high-quality sleep is equally essential, as sleep is when the brain and nervous system repair,

inflammation is regulated, and energy is restored.

- Stress reduction and nervous system regulation play critical roles as well, since chronic stress can worsen nervous system dysregulation and delay healing; creating calm environments, recruiting support from family and friends, simplifying daily demands, and incorporating vagus nerve healing practices can help the body feel safe enough to recover.
- Emotional self-care (seeking mental health support, staying connected with loved ones, allowing space for grief, frustration, and rest) is just as important as physical care.

LONG-TERM OUTCOMES

This section is provided for informational purposes only. **It is not intended to predict how long symptoms will last for any individual person.**

It is also not intended to scare you; if you are not in the right headspace, please skip this section or have a loved one read over it. Remember: every case of Botox poisoning is unique, just as every stroke or other neurological injury is unique. Differences in genetics, physiology, overall health, severity of the poisoning, and environmental factors all influence how a person recovers from botulism, and each individual follows their own healing timeline.

The information below is drawn from a small number of studies examining long-term outcomes in people with

foodborne botulism, many of whom received antitoxin treatment. While this data cannot predict individual recovery, it may help provide a general understanding of recovery patterns.

Based on this research, we can infer that prognosis is most likely to be impacted by the following (in order of importance):

- The severity of symptoms
- Whether or not a person received antitoxin in the early hours or days after poisoning
- Which nerves the toxin attacked
- Age/overall health of the patient prior to poisoning
- Whether or not secondary medical conditions develop after the initial spread of toxin

In Mann et al.'s study (references are listed in the back of the book), researchers followed 21 patients for two years after their botulism poisoning. The following list includes the rates of symptoms that persisted in patients in the “moderate botulism” group at 24 months postpoisoning:

- Generalized weakness: 58%
- Shortness of breath: 44%
- Exercise intolerance: 33%
- Blurry vision: 25%
- Constipation: 20%
- Dry eyes: 20%
- Difficulty speaking: 18%
- Dry mouth: 17%
- Limb weakness: 11%
- Double vision: 0%
- Difficulty swallowing: 0%

The following symptoms persisted in the “severe botulism” group:

- Exercise intolerance: 87%
- Generalized weakness: 83%
- Shortness of breath: 83%
- Dry mouth: 83%
- Dry eyes: 66%
- Limb weakness: 43%
- Difficulty swallowing: 42%
- Constipation: 40%
- Difficulty speaking: 33%
- Blurry vision: 16%
- Double vision: 0%

In Gottlieb et al’s research, patients were anywhere from 6 months to 6 years out from their botulism poisoning. The following symptoms were more likely to be experienced by botulism survivors than by the control group:

- Fatigue (50% vs 30% in control group)
- Weakness (45% vs 25% in control group)
- Dizziness (25% vs 15% in control group)
- Dry mouth (15% vs 9% in control group)
- Difficulty lifting things (18% vs 10% in control group)

The symptoms that these patients had initially experienced upon poisoning, but that had remediated over time included:

- Blurry vision
- Double vision
- Difficulty swallowing
- Difficulty speaking
- Limb weakness
- Constipation

CHAPTER 1 SUMMARY

- Botox poisoning is a serious nervous system illness caused by a toxin that interferes with the communication between nerve cells and nerves and muscles
- Symptoms occur on a spectrum from mild and transient, to life-threatening, and can vary widely depending on where the toxin “lands” once in the bloodstream and/or brain
- Both the peripheral nervous system (PNS) and the central nervous system (CNS) can be affected by botulinum toxin, leading to both physical and psychiatric symptoms in many botulism sufferers

- Healing happens as the body gradually regenerates nerve endings and restores neurotransmitter communication, a process that takes time and differs from person to person.
- Improvement is often slow and non-linear, with periods of progress and plateaus, and recovery can continue for months or in severe cases, years, as strength and function return. Realistic expectations about progress after Botox poisoning are important. Many people find that they turn healing corners around 12-18 months, 2-3 years, and even beyond

The next chapter will help you understand what to expect in the first six months of the illness, which are described by many as the most difficult.

2. THE INITIAL 6 MONTHS

IN THIS CHAPTER:

- What to expect in the initial 6 months
- What to consider avoiding
- Special medical considerations
- A word on alternative health

WHAT TO EXPECT IN THE INITIAL 6 MONTHS

The initial six months are considered the “acute” phase of Botox poisoning, and typically bring the most severe symptoms. For some, this acute phase can last up to 12-18 months. Many sufferers have described these initial months as “a living nightmare” or a “rollercoaster through hell that you can’t get off of”, and these phrases don’t come

close to accurately expressing what many victims live through.

In these early months, it is normal to feel like your entire body is under attack and in “fight or flight”, and you may get signals from your brain that you are dying. The body knows it has been severely poisoned.

Symptoms can vary greatly from individual to individual, but some of the more common symptoms in the first six months include:

- Flu-like symptoms, brain fog, fatigue, and lethargy
- Dizziness, nausea, and head pressure
- Anxiety attacks or “fight or flight” episodes that can persist for hours; heart palpitations can coincide with these
- Insomnia

- Coming and going of symptoms - some will experience days where they feel totally normal, only to have symptoms come back even more severe the following day, hence the “rollercoaster”
- About 50-60% of iatrogenic botulism victims begin to experience food, supplement, chemical and medication sensitivities, and/or other symptoms of secondary medical conditions that can be caused by botulism poisoning, including MCAS or POTS (more information on these in Chapter 4: Secondary Medical Conditions)

It’s important to note that the majority of deaths after botulism occur within the first 2-3 weeks after poisoning. Beyond that, death by botulism/Botox poisoning is extremely rare.

In her research on Botox poisoned patients, Dr. Hristova found that new botulism symptoms could continue to pop up within the first year post-poisoning. It is not unheard of for new symptoms to occur at 4, 6, or even 8 months out from poisoning in untreated Botox poisoning (where no antitoxin was given).

Medical gaslighting is extremely common. Historical outbreaks of foodborne botulism victims documented cases of what doctors would call "pseudo botulism", where patients would report concerning symptoms of botulism, only to be told it's "all in their head", because they weren't presenting with objective, measurable symptoms (including flaccid paralysis, aspiration, and/or respiratory failure).

Because this illness is a cluster of a wide variety of subjective symptoms that do not typically show up on objective testing at the hospital, the vast majority of patients who live through it will be misdiagnosed and/or told their symptoms are psychological.

Know that you will likely face an uphill battle in being believed by doctors. In 2021, the CDC reported that 83% of doctors misdiagnosed botulism symptoms, often mistaking them for stroke or Guillain-Barre syndrome. Many botulism victims in the past and present are told their symptoms are simply “psychosomatic”, due to the lack of objective testing tools that can measure nervous system disruption. The gaslighting many of us experience can add layers of trauma to an already terrifying illness. Use the resources on my website

(www.iatrogenicbotulism.com) to educate and inform family members, friends, clinicians, and hospitals in your area about botulism, especially botulism after botulinum toxin injections.

Here are a few resources for more information:

- The Botox Adverse Effects PDF on www.iatrogenicbotulism.com explains Botox poisoning to healthcare providers, and includes resources on how to get antitoxin
- Dr. Hristova's research on Iatrogenic Botulism, titled "Impaired Neuronal Communication Syndrome", is imperative to read, or have a loved one read:
<https://austinpublishinggroup.com/b>

acteriology/fulltext/bacteriology-v3-id1035.php

- My book *Iatrogenic Botulism 101* was written specifically for medical professionals, explaining botulism after Botox. Paperback copies are available on Amazon. Visit www.iatrogenicbotulism.com for a free PDF copy.

WHAT TO CONSIDER AVOIDING

The following is a list of foods, drugs, procedures, and practices you may want to consider avoiding, particularly in the first 6 months after poisoning, or as long as severe symptoms are present.

These recommendations were compiled using information from Botox's package insert, Drugs.com medication interaction checker, Dr. Hristova's research

on Botox-injured patients, and the first hand experience of members in the “Botox Side Effects & Botox Poisoning Support” Facebook group.

*****PLEASE REMEMBER THAT NONE OF THIS IS MEDICAL ADVICE OR A SUBSTITUTE FOR WORKING WITH A TRUSTED HEALTHCARE PROVIDER. WORK CLOSELY WITH YOUR DOCTOR TO DETERMINE THE BEST DRUGS/PROCEDURES FOR YOUR UNIQUE BODY AND HEALTH*****

Foods and Lifestyle Practices to Consider

Avoiding:

- **Added Sugar**
- **Processed foods, “fast food”**
- **Caffeine**
- **Alcohol** and other recreational drugs, including but not limited to **THC, psilocybin, etc.**
- **Vigorous exercise**

- **Saunas:** some people swear by saunas, others have had worsening of symptoms, especially if their autonomic nervous system is under attack. Heating up the body can be dangerous if cardiac issues are occurring. Proceed with caution and common sense, and always consult with your trusted healthcare provider
- **Less is more.** If you don't absolutely need to do it, don't. When your body is under extreme duress, slowing down and nourishing yourself is extremely important. Take care of yourself and consider avoiding stressful situations as much as possible while in the early months

I believe an organic well-rounded diet that focuses on high quality protein is optimal for healing from any illness. I

personally ate an organic and protein-heavy diet full of nutrients and amino acids, and believed my clean diet played a positive role in my recovery from Botox poisoning.

Procedures/Therapies to Consider Avoiding:

- **Massage** - never massage the area where you were injected, with a toothbrush or your hands. Some group members reported a worsening of symptoms after intense, full body massages
- **Chiropractor/Osteopathy** - anything that "adjusts" the body and can potentially affect nerves/the nervous system
- **Acupuncture** - some have had a worsening of symptoms after acupuncture, others have done okay

with it. Use your best judgment and common sense. Less is more!

- Anything that can **vibrate/disturb** the head or areas where toxin was injected (Dr. Hristova found that vibrating chairs and massage tools [like Gua Sha and microneedling] could cause a worsening of symptoms in her patients). This includes “vagus nerve stimulators”
- **Injections** of any medication (such as steroid shots) in the exact area where you received botulinum toxin injections; sufferers have reported relapses after these

Supplements/Ingredients to Consider

Avoiding:

- **Magnesium** (this is technically a type of muscle relaxer, and muscle

relaxants are advised against on Botox's package insert) for the acute period of the illness (first 3-6 months, or if there is muscle weakness/paralysis)

- **Melatonin and DHEA** have caused a worsening of effects for some, including myself
- **Synthetic vitamins** (B Vitamins, Vitamin D, Zinc, Iron, etc) and IV vitamin infusions can cause a worsening of symptoms for some, particularly those with histamine intolerance. Always work with your doctor if supplementing, and start small and go slow.
- **"Detox"** supplements, including liver cleanses, chlorella supplements, cell openers, etc. have been reported to cause a worsening of symptoms for

many, and were not recommended in Dr. Hristova's research.

- **Snap-8 peptides** - in beauty products look for ingredients including "Acetyl Octapeptide-3" and "Acetyl Hexapeptide-8" - these can block neurotransmitter communication)
- **Retinol/retinoid products** - support group members have had mixed reactions, but some have reported severe relapses after exposure to retinol products

Pharmaceuticals to Consider Avoiding
(ALWAYS work with a trusted healthcare provider when beginning or discontinuing ANY medication)

- **Anticholinergic drugs** (Benadryl, Hydroxyzine, Tylenol PM, Thorazine, Unisom etc.)

- **Aminoglycoside antibiotics:**
gentamicin, streptomycin, amikacin, tobramycin, and neomycin
- **Fluoroquinolones and Tetracycline antibiotics:** Support group members had mixed reviews – some did OK on tetracycline, others didn't. **The antibiotics that most people have done well with post Botox poisoning are the penicillin and macrolide classes**
- **SSRIs/serotonergic supplements, as well as antipsychotics.** Dr. Hristova found SSRIs/antipsychotics to cause a worsening of symptoms in her patients; **PLEASE never stop a medication you're currently on without working with a qualified mental health practitioner**
- **All prescription muscle relaxants**

- **Blood pressure medications** should be used with caution, as Botox poisoning can result in hyper OR hypotension
- **Tamiflu** has caused a worsening of symptoms in some
- **Vaccines:** Dr. Hristova noted a worsening of symptoms after vaccines in patients, such as Tdap and flu shots, and recommended against vaccination for the first year post-poisoning
- **Steroids** (prednisone, cortisone, etc.) either worsened the condition of or did nothing for the patients that Dr. Hristova followed

More resources:

Tox Safety - an advocacy support group for iatrogenic botulism victims has a lengthy

“Caution List” here:

www.toxsafety.com/the-caution-list

Drugs.com has a full list of pharmaceutical drugs that may interact with Botox:

<https://www.drugs.com/drug-interactions/onabotulinumtoxina,botox-index.html>

SPECIAL MEDICAL CONSIDERATIONS

The following are important medical considerations for Botox poisoned patients that can be shared with doctors:

- Botox poisoning can cause new onsets of nutrient deficiencies, especially with the following vitamins/minerals: (Be aware that those experiencing MCAS or secondary inflammatory responses to botulism may not tolerate synthetic vitamins orally or via IV) Vitamin D, B vitamins

(including Folate), Iron/Ferritin,
Potassium

- Dormant viruses have reportedly reemerged in some individuals, including Epstein-Barre virus and Lyme disease; this could be due to a weakened immune system
- Many victims have reported new onsets of thyroid dysfunction in the months post-poisoning; it would be wise to regularly check thyroid function
- Botulinum neurotoxin can spread into the central nervous system (CNS) via the bloodstream and/or retrograde axonal transport. This is why botulism victims can experience brain fog, slow processing speed, memory loss, psychiatric symptoms, and depersonalization/ derealization.

- Botulism patients may benefit from additional referrals, including those to physical therapists (for muscle weakness), speech therapists (for speaking, swallowing, and/or cognitive difficulties), ophthalmologists (for vision disturbances), neurologists (for testing to rule out other conditions), and psychologists/psychiatrists for mental health needs
- Botulism can cause new onsets of cardiac issues, including heart arrhythmias and POTS. Please monitor patients for symptoms of these conditions.
- The respiratory distress experienced by botulism patients typically does **not** result in lowered oxygen saturations . This is why Botox poisoned individuals

will typically have normal O2 readings at the hospital, even though it feels like they are struggling to get a deep breath.

A WORD ON ALTERNATIVE MEDICINE

In the initial months of the illness, the nervous system is often under extreme stress and vulnerability, and during this phase some alternative or aggressive healing practices can do more harm than good. While many complementary approaches can be supportive later in recovery, early on the body may not tolerate intensive detox protocols, stimulating herbs, or invasive practices that place additional demands on an already dysregulated nervous system.

It is especially important to be cautious of anyone who claims they can “heal” this illness through specific herbs, supplements, or proprietary practices, especially when these products come with high costs or promises of rapid recovery. Unfortunately, some victims have spent thousands of dollars on alternative healing products/practices, only to have them worsen symptoms or do nothing at all.

Botulism is a serious neurological injury, and healing requires the slow regrowth and reconnection of nerve synapses; this process cannot be forced or rushed. Time, adequate rest, proper nutrition, and a stable internal environment set the stage for the nervous system to feel safe enough to repair.

Supporting the whole body patiently and cautiously, rather than chasing quick fixes, helps protect recovery and honors the reality of the complexity of botulism damage.

This is not to say that all alternative or integrative medicine approaches are unhelpful after Botox poisoning. In fact, many sufferers have reported benefits from certain therapies later in their recovery, once they've passed the initial year or so. By this point, for most people, the nervous system has stabilized and the body is no longer in an acute state of distress.

Practices such as

- Hyperbaric oxygen treatment
- IV ozone therapy
- AAT (Advanced Allergy Therapeutics)
- Functional Neurology Chiropractic
- Traditional Chinese Medicine (TCM)

- Bioresonance therapy and more

have been helpful for many individuals in their healing journeys when introduced at the appropriate time.

The key distinction is timing and individual tolerance. After the initial year, when foundational healing has taken place and nerve regeneration is further along, some alternative modalities may complement recovery.

It is best to work with a reputable, experienced medical practitioner who is familiar with your medical history and any secondary medical conditions you may have developed after Botox poisoning, such as MCAS or POTS.

CHAPTER 2 SUMMARY

- The initial six months after botulism poisoning are often the hardest (and scariest!), and healing is occurring slowly but surely, even if it's not yet noticeable.
- During this time, healing must be approached with extreme gentleness, as the nervous system is highly sensitive and vulnerable.
- Although it is tempting to rush to try a variety of medications or supplements, Botox poisoning is very different from other illnesses, and often certain pharmaceuticals, supplements, and practices do more harm than good.
- Prioritizing self-care, including adequate rest, proper nutrition, gentle movement as tolerated, and stress

management, can support the body as it slowly rebuilds strength and function.

- The next chapter will address what I call “whole body healing”, which involves paying attention to and nurturing our physical, psychological, emotional, and spiritual needs while healing from this illness.

3. WHOLE BODY HEALING

IN THIS CHAPTER:

- The foundations of healing
- Nourishing food & hydration
- Adequate sleep
- Stress reduction and vagus nerve healing
- Resources

THE FOUNDATIONS OF HEALING

Recovering from any toxic, viral, bacterial, or fungal exposure requires many of the same foundational supports:

- Nourishing food and clean hydration
- Adequate sleep
- Stress reduction and vagus nerve healing

- Limiting toxins in our bodies and environments
- Caring for our mental and emotional wellbeing

In Botox poisoning specifically, autonomic nervous system dysregulation can result in frightening and traumatic symptoms. Many survivors are left with PTSD-like responses after living through this illness, making whole-body healing an essential part of the recovery process.

We will explore each of these areas in more detail individually. It is very important to note that **I am not a doctor and am not providing medical advice.** The information I am sharing comes from my personal experience, the practices I believe supported my own healing journey, insights gained from reading dozens of research articles on

botulism and general illness recovery, and the collective wisdom shared by hundreds of members in my support group who have healed from Botox poisoning.

NOURISHING FOOD & HYDRATION

Nourishing the body with high-quality, organic food is a vital part of the healing process. Organic, whole foods help reduce the body's exposure to pesticides, additives, and other chemicals that can place additional strain on already stressed detoxification and immune systems. Adequate protein intake is especially important during recovery, as protein provides the vitamins, nutrients, and amino acids necessary for repairing tissues, rebuilding muscle, and restoring strength after periods of weakness or immobility.

Without sufficient protein, muscle recovery and overall physical resilience can be significantly delayed. Healthy fats are also essential, as they support brain and nervous system function, help regulate inflammation, and contribute to hormonal balance.

WARNING: FASTING IS NOT

RECOMMENDED IN BOTOX POISONING!

Even though you may find that your hunger cues are gone (very common with Botox poisoning), please do what you can to nourish your body adequately.

Healing foods I focused on before, during, and after my illness included the following (please note: not all of these foods are appropriate for those experiencing MCAS; please see Chapter 4 - Secondary Medical Conditions for more info on MCAS and meal ideas):

- Organic meats, including beef, lamb, & chicken (I personally don't eat much pork or cured meats)
- Wild caught fish and shellfish
- Cod liver oil
- Beef organ pill supplements (kidney and spleen)
- Bone broth and soups
- Organic eggs and whole fat dairy
- Organic nuts and rice
- Organic vegetables and fruits

I avoided most added sugar, caffeine, alcohol and recreational drugs for at least the first 12-15 months after poisoning.

I was slowly able to incorporate low caffeine tea and coffee and 1-2 occasional servings of alcohol after about 15-18 months post-poisoning.

Keeping the body hydrated with clean, filtered water and electrolytes is essential. I personally use the Clearly Filtered Water Pitcher, but there are many other great brands for water filtration.

You can buy electrolyte liquid/powder mixes or make your own. Coconut water is a great natural electrolyte if you add Celtic sea salt to it. I like the brands LMNT and Nectar for prepackaged electrolytes (note: these are **not** MCAS friendly).

Here are two simple homemade electrolyte recipes:

Electrolyte Recipe

- 1 liter (about 4 cups) filtered water
- ¼–½ teaspoon high-quality Celtic salt or Himalayan pink salt

- 2–4 tablespoons fresh lemon or lime juice
- 1–2 teaspoons raw honey or pure organic maple syrup (optional, for glucose and taste)

Low Histamine Electrolyte Recipe (for those with MCAS)

- 1 liter (about 4 cups) filtered water
- ¼ teaspoon high-quality Celtic or Himalayan salt
- ⅛–¼ teaspoon potassium chloride powder (often sold as “NoSalt”)
- 1–2 teaspoons pure organic maple syrup (preferred over honey for low-histamine tolerance)

Botox poisoning affects the autonomic nervous system, and can lead to conditions like POTS and orthostatic hypotension;

electrolytes are especially important if you are displaying symptoms of these conditions.

ADEQUATE SLEEP

The power of sleep should never be underestimated, especially during recovery from Botox poisoning, when the body and nervous system are working tirelessly to repair and rebalance. Adequate, restorative sleep also supports muscle repair, immune regulation, and hormonal balance, all of which are negatively affected by botulism.

Getting good quality sleep can be extremely difficult during recovery due to the insomnia caused by nervous system dysregulation. This insomnia can be particularly intense in the first 3-6 months after poisoning.

Creating gentle sleep supports can help the nervous system relax before bedtime. The following were helpful for me:

- Listening to guided **sleep meditation podcasts**. I lived off of “Sleep Meditation” with Lauren Ostrowski Fenton (available on iTunes and Spotify) for months, and still enjoy this podcast before bed
- **Herbal supplements** (like “Luna Sleep” or Pure Encapsulations “Best Rest”), that include chamomile, lemon balm, passionflower, valerian root, and L-theanine. **I personally avoided anticholinergics and melatonin for sleep**
- Prioritizing **consistent bedtimes**, minimizing overstimulation (ie: screen time, bright/blue lights, and EMR)

exposure) for at least 2 hours before sleep

- I did have to take small amounts (.25-.5 mg) of Ativan (Lorazepam) for a few weeks while my body was in a state of extreme insomnia. I was able to wean myself off of this drug without any lingering effects. I include this information not because I am recommending this drug at all. I simply want others to know the reality of how difficult it can be to treat these symptoms, especially in the acute phase of the illness

**Do EVERYTHING in your power to
prioritize sleep while recovering from
Botox poisoning (and for the rest of your
life!)**

STRESS REDUCTION & VAGUS NERVE HEALING

Reducing stress (from overwhelming situations, chaotic environments, or stressful relationships) and healing the vagus nerve are critical components of recovering from Botox poisoning. Our nervous systems are fragile and dysregulated, and ongoing stress can keep the body in a constant fight or flight state, which can then worsen symptoms such as fatigue, insomnia, dizziness, gastrointestinal issues, and anxiety.

The vagus nerve is a major nerve that connects the brain to many organs, including the heart, lungs, and digestive system, and it helps control automatic functions like heart rate, breathing,

swallowing, and digestion. It works by sending signals that tell muscles and glands when to activate.

In Botox poisoning, botulinum toxin blocks the release of acetylcholine, a chemical messenger needed for nerve cells that make up the vagus nerve to function properly.

Stress is a significant trigger for vagus nerve dysfunction and mast cell activation syndrome (MCAS), a secondary condition that can develop after severe illness or toxic exposure, leading to increased inflammation, histamine release, and symptom flares throughout the body. (See Chapter 4 - Secondary Medical Conditions for more on MCAS).

Gentle nervous system–supportive practices such as **slow, deep breathing, short periods of meditation, dry brushing, grounding barefoot in nature, restorative movement, journaling, one on one time with calming loved ones, prioritizing rest** can help signal feelings of safety to the body.

See Chapter 5 - A-Z Symptom Relief for more Vagus Nerve Healing practices

LIMITING TOXINS

Limiting toxin exposure in your environment is especially important while healing from botulism, as the body's detoxification pathways and nervous system are already under increased strain.

Hormone-disrupting chemicals and artificial fragrances can interfere with endocrine signaling, immune balance, and neurological function, potentially worsening symptoms or slowing recovery. These substances are commonly found in everyday household and personal care products:

- scented laundry detergents and fabric softener liquids and sheets
- air fresheners and candles
- cleaning sprays and solutions
- perfumes and colognes
- lotions, shampoos, & soaps
- cosmetics & skincare products
- hair dye & nail polish
- plastics and food packaging

Choosing **fragrance-free, non-toxic, and minimally processed products** can significantly reduce the chemical burden on

the body. <http://www.ewg.org/skindeep> is a great resource for looking up low toxin alternatives to common beauty products.

I personally use the following nontoxic, fragrance-free products (all available on Amazon). (I'm not affiliated with any of these brands):

- Vanicream shampoo and facial lotion; Cleure shampoo
- Pure tallow or olive oil soap without fragrances
- Humble deodorant
- Redmond toothpaste
- Makeup from the brand Alima Pure or Toups & Co.
- I make my own cleaning products with water/vinegar/lemon oil. There are tons of "recipes" available online for homemade cleaning products

- I personally stay far away from bleach, synthetic fragrances, hair dye, nail polish, and unnecessary ingredients in products.

REMEMBER: LESS is MORE!!! If you don't absolutely need a product, don't use it, especially in the early months after poisoning.

Reducing exposure to **blue light from screens and electromagnetic radiation (EMR/EMF)** may be supportive for an already sensitive nervous system, as some individuals experience heightened symptoms such as headaches, sleep disturbances, or nervous system overstimulation with excessive exposure. Simple steps like limiting screen time, turning off Wi-Fi at night, avoiding putting your phone directly

on your body, and avoiding high EMF devices like Bluetooth and AirPods can help promote a calmer environment. Visit

<https://emfsafeliving.com/creating-low-emf-smart-homes> for more ideas.

Limiting exposure to pesticides, herbicides, and other chemical residues can be important while healing. Choosing organic foods whenever possible and drinking filtered water (I use the pitcher by the brand “Clearly Filtered”) can reduce this chemical burden, giving the body more energy to focus on neurological recovery.

Consider protecting yourself from **“toxic” social and informational environments.** Negative or stressful interactions, exposure to alarming news, or

unwelcome/unnecessary advice from sources that don't align with you can trigger nervous system dysregulation and increase stress, which may worsen symptoms.

By consciously minimizing toxins you are laying down the foundation for a more holistic and healthy recovery process.

MENTAL AND EMOTIONAL WELLBEING

Mental and emotional wellbeing are critical components of healing, as long-term outcome research has shown that psychosocial health can decline significantly in the years following botulism poisoning. Survivors may experience anxiety, depression, post-traumatic stress, and/or a sense of isolation due to central nervous

system and hormonal disruption from the toxin, or prolonged recovery and lingering symptoms. Actively supporting mental health can help stabilize mood, improve coping skills, and support overall recovery.

Resources such as the National Alliance on Mental Illness (NAMI), Psychology Today's therapist directory, PTSD Alliance, and meditation or mindfulness apps like Headspace or Calm can provide guidance and support.

Support group members have found the following helpful for their mental and emotional well-being:

- Overall whole foods organic diet with an emphasis on limiting toxins and incorporating gut-healing foods

- Dry brushing and lymphatic drainage exercises (on YouTube)
- Vagus nerve and breathing exercises (on YouTube)
- Primal Trust program (www.primaltrust.org)
- Dynamic Neural Retraining System (retrainingthebrain.com)
- “The Mindful Gardener” videos on YouTube
- Apps like BrainTap and NuCalm
- Stoicism, Christianity, Buddhism, and/or other spiritual and philosophical texts and teachings for increasing resilience and reframing trauma
- Calming frequency sound devices (such as ORA Sound machine)

- Joining a support group for people with Botox poisoning; however, please do **not** read others' stories if doing so gives you more anxiety or depression. You can always ask a loved one to read through stories and give you information only on an as-needed basis

Work closely with a qualified mental health professional if you need to explore pharmacological interventions to assist with mental health.

Recovery from botulism can be extremely physically exhausting and emotionally overwhelming. Symptoms that come and go, persistent and scary psychiatric symptoms, and uncertainty about the future can take a serious toll on

our mental health. Many botulism victims report suffering from PTSD, even years after healing. You are not alone in this!

If at any point during recovery you feel hopeless, overwhelmed, or afraid you might hurt yourself, please do not hesitate to seek help. **In the United States, confidential, free help is available 24 hours a day through the 988 Suicide & Crisis Lifeline.** You can call or text 988, or use online chat at <https://988lifeline.org> to connect with trained counselors who listen without judgment and can help you through a difficult moment. If you are in immediate danger, calling 911 or going to the nearest emergency room is the fastest way to get help.

For readers outside the United States, international support is available through Befrienders Worldwide at <https://www.befrienders.org>, which lists crisis helplines by country, and Find a Helpline at <https://findahelpline.com>, which connects people globally to local mental health and crisis resources.

If reaching out by phone feels hard, many of these services offer chat or email options. Talking to a trusted loved one is imperative. Recovery from botulism is not only about healing the physical body; caring for mental and emotional well-being is an essential part of the journey.

MORE RESOURCES

Clean Eating Kitchen - Animal-Based diet -
<https://www.cleaneatingkitchen.com/animal-based-diet/>

Clean Eating Kitchen - How to Eat Clean -
<https://www.cleaneatingkitchen.com/how-to-eat-clean/>

Dr. Axe - Naturopathic Doctor who speaks and writes on many holistic health related topics - <https://draxe.com/>

Earthley - organic, USA-made herbal tinctures and remedies - www.earthley.com

EMF Academy - everything you ever wanted to know about EMF/EMR reduction strategies - <https://emfacademy.com/>

EWG's database for nontoxic cleaning products - <https://www.ewg.org/cleaners/>

EWG's database for nontoxic products - <http://www.ewg.org/skindeep>

Healing the Vagus Nerve -

<https://boulderholistic.com/vagus-nerve-dysfunction-signs-causes-and-how-to-heal-it-naturally/> (note: bioelectrical devices have caused a worsening of symptoms for some botulism sufferers)

Institute for Functional Medicine directory

- <https://www.ifm.org/find-a-practitioner>

Stoicism 101 - a book I found extremely helpful for increasing my mental and emotional resilience while ill -

<https://a.co/d/15I8bf1>

CHAPTER 3 SUMMARY

- Botox poisoning, and particularly the development of secondary conditions like MCAS, can make the body more prone to nutrient deficiencies, which in turn can worsen symptoms such as fatigue, muscle weakness, cognitive difficulties, hair loss, hormonal and immune dysregulation.
- Chronic inflammation, digestive disturbances, and heightened mast cell activity can interfere with the absorption and utilization of essential vitamins and minerals, making careful monitoring your metabolic functioning **critical**.
- **Patients recovering from Botox poisoning should work closely with a trusted healthcare provider** to track nutrient levels, thyroid function, and

overall metabolic health over the months (and, in some cases, years) following poisoning.

- Seeking out integrative or functional medicine doctors can be especially helpful, as they often have access to more comprehensive testing that goes beyond standard labs, allowing for a deeper understanding of imbalances and deficiencies.
- Addressing these nutritional and metabolic needs proactively supports nerve repair, immune balance, and overall recovery.

4. SECONDARY MEDICAL CONDITIONS

IN THIS CHAPTER:

- What are secondary medical conditions?
- MCAS
- POTS and Dyautonomia
- Lyme Disease and recurring viruses
- ME

WHAT ARE SECONDARY MEDICAL CONDITIONS?

In Dr. Hristova's research, it was reported that around 60% of Botox-poisoned patients developed one or

more secondary medical conditions as part of a prolonged or atypical recovery process.

Similar to what is often described as “long COVID,” some victims experience what can be thought of as “long botulism,” where instead of returning to baseline, the body remains in a heightened inflammatory or dysregulated state.

Ongoing nervous system, hormonal and immune disruption can contribute to the emergence of conditions such as mast cell activation syndrome (MCAS), postural orthostatic tachycardia syndrome (POTS), dysautonomia, Lyme disease, myalgic encephalomyelitis (ME), and more. These conditions may arise as the body struggles to recalibrate after the neurological and systemic stress caused by botulinum toxin.

Recognizing that these secondary conditions can occur is important, as it can explain the lingering symptoms that many sufferers report, and highlights the need for individualized, supportive care rather than the expectation of a quick or linear recovery.

This chapter will explore some of the more common conditions that can occur after poisoning.

MCAS (MAST CELL ACTIVATION SYNDROME)

MCAS is a condition in which mast cells (immune cells involved in inflammation, allergy response, and tissue repair) become overly reactive and release inflammatory

chemicals (such as histamine)
inappropriately or excessively.

This can lead to a wide range of symptoms affecting multiple systems in the body, including flushing, gastrointestinal distress, heart rate and blood pressure changes, fatigue, brain fog, anxiety, and sensitivities to foods, medications, chemicals, or environmental triggers.

Botox poisoning can act as a trigger for MCAS because it places extreme stress on both the nervous and immune systems. The neurological injury, autonomic nervous system dysregulation, prolonged physical stress, and inflammatory response associated with this illness can disrupt normal immune signaling and mast cell regulation.

In some individuals, this disruption may persist beyond the acute illness, leading mast cells to remain in a hyper-responsive state. In some cases, MCAS may be the reason for ongoing, multisystem symptoms, highlighting the importance of gentle, nervous system-supportive healing approaches that reduce inflammation and avoid unnecessary triggers.

According to MastCell360.com, the most common signs of MCAS and histamine intolerance include:

- Anxiety
- Depression
- Asthma or other issues with shortness of breath
- Fatigue
- Diarrhea or constipation
- Headaches

- Inflammation/swelling
- Insomnia
- Sinus issues like congestion or runny nose
- Skin issues like hives, rashes, or flushing

The website further indicates that "unique symptoms that may indicate you are dealing with Mast Cell Activation Syndrome:

- Anaphylaxis
- Autoimmune disorders
- Brain fog
- Chemical sensitivities
- Chronic infections
- Difficulty healing
- History of toxic mold exposures
- History of Lyme
- Sensitivities to light or sound "

MastCell360.com writes that reaction time is an important clue to whether or not you have MCAS. Typically with MCAS, reactions happen within 30 minutes of exposure to a trigger, including certain foods, supplements, medications, and personal care products/cleaning products.

Histamine intolerance is not quite as complex as MCAS; it occurs when the body is producing too many histamines, and begins reacting to high histamine foods. According to DrBeckyCampbell.com, symptoms of histamine intolerance can include the following:

- Headache
- Itching
- Flushing
- Hives

- Nasal congestion
- Gastrointestinal issues, including diarrhea, nausea, or vomiting
- Low blood pressure
- Difficulty breathing

And causes can include:

- histamine-rich foods
- Certain medications, like NSAIDs
- DAO-inhibitors
- leaky gut and inflammatory bowel disease
- hormonal changes
- bee stings
- seasonal allergens

To get evaluated for MCAS, you can ask your doctor about being referred to an allergist/immunologist. It's important to note that many have been unsuccessful in

receiving official diagnoses of MCAS, but have still benefitted from histamine-reduction interventions.

Next steps if you think you may have MCAS

1. Figure out your triggers and avoid those, at least initially. If you think you're suffering from MCAS or histamine intolerances post-Botox, pay close attention to foods (possibly high histamine) and products that trigger symptoms. Write these down in a log and try to avoid them as much as possible, at least for the first 6-12 months of your illness. People with MCAS have reported being able to slowly incorporate more foods/products after the first 12-18 months of their illness. Here is a great

list of low histamine foods:

<https://mastcell360.com/low-histamine-foods-list/>. Here is a user friendly app you can use to look up MCAS friendly foods:

<https://apps.apple.com/us/app/food-intolerances/id419098758>

2. Meal ideas for those with MCAS

- **Breakfast:**

- Smoothie with whole and/or coconut milk, low histamine fruits, egg yolks, coconut oil, almond butter, chia & flax seeds
- Gluten free bread with ghee or almond butter
- Scrambled eggs (if tolerated)

- **Lunch:**

- Soup with chicken/beef/lamb and veggies; gluten free bread or gluten-free ramen noodles
- Salad with fresh/frozen fish filet/grilled chicken/steak strips and veggies
- Sandwiches with gluten free bread
- Creamy soups made with coconut milk (like carrot ginger or sweet potato)

- **Dinner:**

- Steak or roasted chicken with rice and low histamine vegetables
- Fresh/frozen fish with steamed veggies and potatoes

- Lettuce wraps with meat of choice
 - Stews/soups made with broth (not bone broth), meat, veggies
3. Read this helpful and thorough list of **medications to AVOID** if you suspect you have MCAS:
- <https://www.histamined.com/post/medications-to-avoid-with-mcas>
4. **Natural and OTC supplements** to help with MCAS symptoms (these were obtained from my own doctor, as well as support group members who suffered from MCAS) - **Never start any new drug or supplement without the guidance of your trusted healthcare provider.**
- Quercetin and vitamin C
 - Low histamine probiotic

- Chamomile and Peppermint Tea
- DAO enzyme if you have high histamine - Beef Kidney pills are a great natural source and can be found in pills on Amazon from the brand Zen Principle
- Milk Thistle
- L-Theanine/GABA
- Pepcid (famotidine, OTC)
- Claritin, Allegra, or Zyrtec (OTC) can help with histamine symptoms (anticholinergics like Benadryl or Hydroxyzine may exacerbate the effects of botulinum toxin)
- Ketotifen (Rx)
- Cromolyn spray (OTC)

NOTE: You may want to try 1 supplement at a time, for a week or so, before introducing new supplements.

This way, you will be able to figure out which supplements/products (if any) trigger your symptoms. You can also try starting with a small dose of a medication, such as .25 or .5 of the regular dose, if your healthcare provider OKs this. **Be aware that many with MCAS have suffered reactions after synthetic vitamins (including B & D vitamins, and iron) and naturopathic “remedies” and supplements.** Try to get your nutrients from food or food-based supplements as much as possible. Alcohol, caffeine, recreational drugs, and inflammatory foods, like sugar, processed and “fast” foods, and seed oils (including sunflower seed oil, safflower seed oil, canola oil, etc.) can exacerbate

MCAS symptoms, and should be avoided as much as possible

5. Some group members have had success reducing MCAS symptoms with alternative medicine therapies, including SAAT, AAT and bioresonance therapy. You can learn more at saatallergy.com and advancedallergytherapeutics.com and It is very important to understand the relationship between the nervous system and MCAS symptoms. Dr. Gabrielle Lyon has a great article explaining this here:
<https://drgabriellelyon.com/its-not-a-ll-in-your-head-mcas-histamine-and-the-nervous-systems-role-in-chronic-symptoms/>

Work with a trusted healthcare provider to ensure your vitamin/mineral levels remain within normal limits, especially if you find yourself on a limited diet. Naturopathic doctors and functional medicine doctors can be great sources of information for healing from MCAS.

My website includes a sample MCAS healing protocol generated by ChatGPT by one of our group members:
<https://www.iatrogenicbotulism.com/post/botulism-and-mcas>

Jamie McGuire is a holistic aesthetician who was poisoned by Botox and developed MCAS as a result. Her blog has a wealth of information that may be helpful for others experiencing MCAS:
<https://jamieanne.co/blogs/blog>

POTS & DYSAUTONOMIA

POTS (Post-orthostatic tachycardia syndrome) is a condition in which the autonomic nervous system (which regulates involuntary functions like heart rate and blood pressure) does not properly manage circulation when standing. People with POTS can experience rapid heart rate, dizziness, lightheadedness, fatigue, brain fog, and sometimes fainting upon standing or during mild exertion. A primary care doctor may be able to diagnose POTS, or refer you to a cardiologist for a thorough examination.

Dysautonomia is an umbrella term for the disruption of the autonomic nervous system. After Botox poisoning, dysautonomia can occur because the botulinum toxin disrupts nerve signaling, and even as the

toxin's effects wear off, the nerves that control these automatic processes may take much longer to recover. This can lead to symptoms such as dizziness, fatigue, heart rate changes, digestive issues, temperature sensitivity, or blood pressure fluctuations during recovery.

These conditions typically improve with time, as the nervous system continues to heal. Managing POTS and dysautonomia often involves lifestyle adjustments:

- increasing hydration and salt intake
- wearing compression garments
- pacing activity
- using gentle movement or recumbent exercise to improve circulation

- mindfulness, stress reduction, and good sleep can help regulate the nervous system
- Staying under the care of a trusted healthcare provider who can monitor your condition closely and recommend any necessary medications

For more information, visit:

- Dysautonomia International
- Standing up to POTS
- Support groups on Facebook for individuals with POTS and dysautonomia

LYME & RECURRING VIRUSES

Some individuals recovering from botulism poisoning have reported being diagnosed with Lyme disease and Epstein-Barr virus in the months after poisoning, whether or not they knowingly had Lyme or EBV before Botox. Symptoms can include fatigue, joint and muscle pain, cognitive difficulties or “brain fog,” headaches, and neurological disturbances. Many of these can overlap with post-botulism or autonomic dysfunction symptoms, so proper and thorough testing is imperative. T Lab Inc. (www.tlabdx.com) and IGeneX (www.igenex.com) have been noted by Lyme sufferers as the most accurate tests.

Resources for learning more about Lyme disease, its symptoms, and how to get a diagnosis include:

- The book “The Lady Who Talks to Lightbulbs” by Freya Oostingh (available on Amazon), is a firsthand account from a Botox-poisoned woman who developed Lyme in the months after her poisoning and treated it naturally.
- International Lyme and Associated Diseases Society (ILADS)
- the Facebook support group titled “Lyme After Botox”, which was started by two women who developed Lyme disease post-Botox injections. The group administrators are friendly, accessible and helpful.

Early and accurate assessment is key for determining the underlying cause of ongoing symptoms and creating an appropriate care plan.

MYALGIC ENCEPHALOMYELITIS (ME)

ME is a complex, chronic illness characterized by profound fatigue, post-exertional malaise, cognitive dysfunction (“brain fog”), sleep disturbances, pain, and autonomic nervous system irregularities.

Post-exertional malaise (PEM) is a hallmark symptom of ME in which physical, cognitive, or emotional exertion leads to a significant worsening of symptoms. This crash is often delayed by hours or days and

can include extreme fatigue, pain, brain fog, and flu-like feelings. Unlike normal tiredness, PEM is disproportionate to the activity and can take days, weeks, or months to improve with rest.

Some individuals have reported developing ME after Botox poisoning, likely due to the prolonged neurological and systemic stress the body experiences during recovery. Diagnosis is typically made by a healthcare provider through careful evaluation of symptoms and exclusion of other conditions.

Symptom management often involves pacing activity to avoid post-exertional crashes, prioritizing restorative sleep, carefully balancing nutrition and hydration,

and addressing “sister illnesses”, including POTS or MCAS.

Because ME shares many symptoms with “long COVID,” treatments and strategies that are emerging for long COVID may also be useful approaches for those navigating ME after botulism.

More information here:

- American ME & CFS Society (AMMES)
 - Offers support group listings, online and phone groups, and resources for patients and caregivers
- #MEAAction – A global patient-led network with multiple support groups, including peer groups for people with ME/CFS, long COVID, and caregiver

CHAPTER 4 SUMMARY

- Secondary medical conditions, such as MCAS, POTS, Lyme and ME can develop after botulism poisoning
- If you suspect that you may have developed a secondary neurological condition after botulism, it is essential to seek the guidance of a neurologist or an integrative medicine doctor who is experienced in complex, post-toxic or post-infectious conditions.
- Medical professionals can help evaluate symptoms, perform appropriate testing, and develop an individualized plan for managing ongoing neurological and systemic challenges that linger.

5. A-Z SYMPTOM RELIEF

IN THIS CHAPTER:

- Practices, supplements, medications, & ideas for symptom relief

This chapter includes practices, supplements, medications, therapies, etc. that helped support group members with specific symptoms of botulism and/or MCAS.

Medical Disclaimer: Please note that none of this is medical advice. ALWAYS work closely with a trusted healthcare provider before beginning or discontinuing ANY supplements or medications. **What helps one person, can cause a worsening of symptoms for others, so please use your common sense, do your own research, consult with a trusted medical

professional, and remember that every drug/supplement comes with its own list of benefits and risks.**

The following labels were developed to describe each symptom relief recommendation, and will be noted in parentheses where appropriate:

R = Supported by research

PE = Based on patient experience

!!! = May worsen symptoms in some

RX - Prescription medication to discuss with your doctor

What helped with symptoms overall for most people:

- Time
- Healthy, organic foods - consider a high protein, low sugar diet rich in healthy fats

- Sleep
- Electrolytes and celery juice
- Family/friend support and time off from work
- Reducing Stress and Vagus Nerve healing practices and meditations
- MCAS symptom reduction if/when MCAS is present

A-Z SYMPTOM RELIEF IDEAS

Anemia

- Iron supplement with Vit C if tolerated
 - note that many (especially those with MCAS) will not tolerate synthetic vitamins. Brands noted include Ancient Nutrition and Ferravital (look for Ferrous Bisglycinate Chelate)

- Beef spleen pills (spleen has the most available heme iron out of all organ meats)
- Oysters and chicken liver (note: these are NOT MCAS friendly)
- Beef

Anxiety

- Ashwagandha (OTC) - note that short term use of Ashwagandha is generally considered safe (PE)
- Vagus nerve healing (PE)
- Mental distraction (walks, calling a friend, watching a funny movie, etc.)
- Avoiding caffeine, excess sugar, and processed foods (PE)
- Dose for Liver (liquid supplement, ingredients are turmeric, ginger, milk thistle and dandelion) (PE)
- Progesterone cream (PE, RX)

- LDN (RX)
- Benzodiazepines (!!!, RX) are sometimes used as a last resort; if you choose to take them, it is **imperative** that you heavily weigh the risks of these drugs, and work closely with a trusted healthcare provider

Back pain

- Icy hot packs
- Warm compresses

Brain fog and fatigue

- Huperzine A (PE; note: this is an acetylcholinesterase inhibitor, which can worsen muscle spasms and twitches)
- Omega 3's or cod liver oil
- Creatine

- Ginseng - (!!! - may cause more anxiety in initial 6 months)
- Nicotine patches (2-4 mg) have helped some; for others it made them more anxious. (!!! - **Nicotine products may not be safe or appropriate for everyone and can have side effects or interactions with medical conditions or medications. Always consult a trusted healthcare provider before introducing a new OCT or RX treatment.**)
- Magnesium malate - necessary for producing ATP, body's primary energy source (magnesium relaxes muscles and is **not** recommended if you are experiencing acute muscle weakness from Botox poisoning)

Constipation

- Increase water and fiber intake, daily short walks if tolerated
- Glycerin suppositories as a last resort (PE)
- Artichoke extract/milk thistle (R)
- Senna/"Smooth move" tea (!!!: may cause stomach pain)

Difficulty breathing

- Time and distraction - for most this symptoms lasts a maximum of a few months
- Note that sometimes this symptom can be caused by histamine triggers, so pay close attention to when it occurs

Dry eyes

- Warm towel compresses (PE)
- Carbomethylcellulose preservative free .05% (RX)
- Eye drops (RX or OTC)
- Cod liver oil or eating more oily fish like salmon, sardines, & mackerel

Dry mouth

- Biotene products (spray, lozenges, mouthwash)
- Chewing gum
- Peppermint drops or sour drops
- Xylimelts on Amazon

Dry nose

- Saline/steam spray
- Petroleum jelly

Ear congestion

- Chewing gum

Eyelid ptosis (drooping)

Ptosis will typically improve with time (3-6 months). Your injector can prescribe eye drops to help with ptosis, including:

- Upneeq (RX)
- Apraclonidine (RX)

Gut healing

- Avoid processed foods, seed oils & added sugar whenever possible
- Stick to a simple, organic whole foods diet. It's important to eat organic grains (wheat, corn, soy, etc) whenever possible, as herbicides and pesticides can disrupt the gut lining

- Bone broth (**not** MCAS friendly) and broth (MCAS friendly)
- Low histamine probiotic if you have MCAS
- Sauerkraut and whole fat kefir (**not** MCAS friendly)
- Marine collagen
- Digestive enzymes
- The GAPS diet website is a great resource: www.gapsdiet.com

Hair loss / Dandruff

- Gently washing hair with fragrance-free shampoo (like Vanicream or Cleure) every 2-3 days
- Don't comb your hair when wet
- Collagen supplements like Heart & Soil Hair Skin & Nails pills
- If dandruff is present (very common after autonomic nervous system

disruption), try a gentle dandruff shampoo like Head and Shoulders Bare 1-2 times a week

- Time is the best healer, and many report that it takes 2-3 years for their hair to begin to thicken back up after botulism-induced hair loss
- I would not recommend using aggressive hair loss treatments, such as PRP or red light therapy

Heart Palpitations/Chest Pain

- Reduce stressful situations/over-exertion; heart palpitations can come from histamine triggers/MCAS
- Deep breathing
- Keep in mind that some botulism victims have had to take beta blockers after their poisoning

- **Do not hesitate to seek emergency medical care or the opinion of a cardiologist if these symptoms are worrisome**

Insomnia

- L-theanine and Valerian root (R)
- GABA supplements - look for pure GABA with no added vitamins (PE)
- Magnesium glycinate - note that magnesium is a muscle relaxer, so if you are experiencing muscle weakness it would not be recommended (R)
- Benzodiazepines (!!! and RX - some have had to use these as a last resort short term under the guidance of a doctor)
- Low-dose naltrexone (RX)
- Meditation podcasts (PE)

Memory loss

- Nicotine patches (2-4mg) have helped some; for others it made them more anxious (!!! and PE)
- Sleep
- Write everything important down, on post its or in your phone
- Use your phone to set reminders and alarms
- Repetition of new information is key to making new memories.

Migraines/head pressure

- Acetaminophen (OTC)
- Gabapentin and other migraine prescription drugs (RX and !!!) are the only thing that helped some. Talk with your doctor about possible options.

Muscle spasms

- Magnesium glycinate (orally) - note that magnesium is a muscle relaxer, so if you are experiencing muscle weakness it would not be recommended

Muscle and joint pain

- Physical therapy
- TENS unit (!!! and RX)
- Red light therapy (PE; after initial 6 months)
- Magnesium (oral or transdermal, such as lotions or bath soaks) - note that magnesium is a muscle relaxer, so if you are experiencing muscle weakness it would not be recommended
- Biofreeze or Arnica lotion

Muscle weakness

- Pyridostigmine (RX) has been prescribed for muscle weakness in various iatrogenic botulism case studies. Keep in mind that it comes with its own list of risks and has caused a worsening of symptoms for some sufferers, so ask your doctor if it's something that might help you
- Citicoline (500 MG OTC pure) - may not be appropriate for those who are sensitive to supplements

Nausea

- Zofran (RX)
- Phenergan (RX)

Neck weakness/pain

- Neck pillow

- Icy hot packs and cream

Nerve pain

- TENS unit (!!! and PE)
- Magnesium glycinate (oral and transdermal) - note that magnesium is a muscle relaxer, so if you are experiencing muscle weakness it would not be recommended
- Lion's mane mushrooms
- St. John's Wort
- PEA supplements
- Red light therapy (PE after first 6 months)
- Cannabinoids (CBD helped some; THC is not recommended and should be used with extreme caution, as it can cause a worsening of symptoms)
- Some found that prescription medications, like Amitriptyline (RX),

Gabapentin (RX), and Oxycodone (RX) were the only things that helped. All of these are prescription medications that come with their own list of adverse effects. People are encouraged to weigh the risks/benefits and work closely with their doctor to determine if these medications may be beneficial

Relapses

- Activated charcoal
- Reducing stress
- Quercetin + Vit C
- Electrolytes and rest

Swallowing difficulties

- Pureeing food, smoothies, soups, & shakes and using sauce/gravy with solid foods to help moisten them

- Crushing medications in applesauce if OK'd by MD/pharmacist
- A Modified Barium Swallow Study (MBSS) can confirm whether or not aspiration is occurring

Thyroid dysfunction

- Careful monitoring by doctor, as thyroid medications may be necessary after Botox poisoning
- Whole, organic diet; avoiding soy products and focusing on fish, beef, eggs, brazil nuts, and other selenium rich foods
- Ashwagandha; I personally use the tincture Thyroid Support by Earthley

UTIs and interstitial cystitis

- Focus on gut health (see above)
- Water and electrolytes

- D-mannose + Vit C
- Become educated on the difference between UTIs and interstitial cystitis:
<https://biologyinsights.com/how-to-tell-the-difference-between-a-uti-and-interstitial-cystitis/>

Vagus nerve healing

- Vagus nerve exercises
- Dry brushing and lymphatic drainage practices
- Primal Trust program
- “Mindful Gardener” YouTube videos
- Dynamic Neural Retraining System
- Apps “BrainTap” and “NuCalm”
- Calming frequency sound devices
- Limiting EMR exposure
- Improving gut health

Vision impairments

- Thorough evaluation performed by Neuro-Ophthalmologist
- Eye exercises on Youtube
- Functional Neurology (a type of chiropractor that can prescribe brain/vision exercises)
- Sunglasses if light sensitivity is present
- Addressing MCAS symptoms if present; vision disturbances can sometimes be caused by histamine triggers

Potential therapies mentioned (but never formally studied) by Dr. Hristova in her 2016 paper:

- Activated charcoal
- 400 MG of Echinacea daily

- Coffee enemas
- Toosendanin
- Reserpine
- Celery juice consumption
- Potassium-rich foods

6. FREQUENTLY ASKED QUESTIONS

IN THIS CHAPTER:

- Miscellaneous questions that have come up frequently in the “Botox Side Effects & Botox Poisoning Support” community on Facebook

FAQs

1. **Can I get pregnant after Botox poisoning?** Individuals have gone on to have healthy, successful pregnancies following botulism poisoning. A past exposure to botulinum toxin most likely does not affect future pregnancies or harm an

unborn baby, however there has never been long term research to verify this. Within our support community, members who have navigated pregnancy after poisoning typically report waiting at least one year, or until they are no longer in the acute phase of the illness, to allow their bodies time to stabilize. Prioritizing comprehensive nutrient level testing and working to replenish any deficiencies is a crucial step in preparing your body for a healthy pregnancy. *Please remember: This information is for educational purposes only and is not a substitute for professional medical advice. Always consult with your OB-GYN or primary healthcare provider to evaluate your*

individual health status before attempting to conceive.

2. Why do my botulism symptoms flare during my monthly cycle?

Fluctuations in sex hormones (including estrogen and progesterone) directly influence the nervous system and immune signaling, both of which are affected by Botox poisoning.

Throughout your menstrual cycle, changing hormonal levels can alter pain sensitivity, neuromuscular excitability, and inflammation. In the late luteal phase (just before your period starts), the sharp drop in estrogen and progesterone can trigger a temporary uptick in neurological, autonomic nervous system, or

peripheral nervous system symptoms. Additionally, estrogen acts as a natural neuromodulator and antioxidant; when its levels naturally shift, nerves that are still recovering from botulism can temporarily feel more sensitive, leading to symptom relapses or mini-flares. Give yourself extra rest and care during these phases, and know that the uptick in symptoms is temporary.

- 3. Why am I getting muscle spasms and tremors after Botox poisoning?** While botulinum toxin is known for causing muscle paralysis, twitching and spasms are common manifestations of systemic toxin spread and nervous system dysfunction. When the toxin

blocks nerve-to-muscle signaling, it creates sudden sensory deprivation, which prompts surrounding motor neurons to misfire as they struggle to compensate for the lost signal. Additionally, systemic spread heavily dysregulates the autonomic nervous system, leaving the body in a hyper-vigilant state that frequently triggers fasciculations, tremors, and involuntary jerks. As nerve terminals eventually begin sprouting and attempting reinnervation, these new connections also generate erratic electrical discharges. Ultimately, these chaotic movements are a direct result of your nervous system trying to navigate and recover from severe neurological interruption. It is unknown whether or not they signify

that healing is taking place, however many sufferers have reported an increase in twitching before seeing noticeable healing progress.

- 4. Is anesthesia safe after Botox poisoning?** For most individuals, general and local anesthesia are tolerated well once they are past the acute phase of poisoning (first 6-12 months, or as long as severe symptoms last) and their neuromuscular function has stabilized. Members in the group have reported undergoing necessary surgical and/or dental procedures without issue after their initial recovery window. However, additional caution is needed for those who

developed Mast Cell Activation Syndrome (MCAS) or systemic hypersensitivity following their injury. Individuals with MCAS can react to specific local anesthetics or the preservatives added to them. For dental procedures, many affected members advocate asking for a plain numbing agent (such as carbocaine or plain lidocaine) without epinephrine or added steroids/sulfite preservatives, as vasoconstrictors can trigger mast cell degranulation, heart palpitations, or symptom flares. Always inform your anesthesiologist, surgeon, or dentist about your history of botulism and any ongoing autonomic or mast-cell symptoms so they can tailor your protocol safely.

5. How can I get an official diagnosis of iatrogenic botulism? Obtaining an official diagnosis can be challenging because many clinicians remain unfamiliar with systemic botulinum toxin spread and often look only for localized side effects. Because iatrogenic botulism is largely diagnosed based on clinical presentation, symptom progression, and the exclusion of other conditions, empowering yourself with structured medical literature is key. To help educate your doctor and advocate for proper evaluation, you can utilize resources specifically designed for this purpose on my website www.iatrogenicbotulism.com. I have created clinical tools that you can

share directly with your healthcare providers, including:

- The Botox Adverse Effects PDF for Clinicians & Emergency Protocols: Printable guides outlining key signs and symptoms, differential diagnoses, and sample emergency department protocols.
- The Research Hub includes peer-reviewed studies, case reports, and clinical observations (such as foundational insights by Dr. Anna Hristova) detailing how systemic toxicity affects multiple body systems.
- Product Inserts and Warnings: Direct links to official product inserts and black box warnings for botulinum toxin products (such as Botox®, Dysport®, Xeomin®, and others) to demonstrate documented risks

Bringing these resources to your appointments can help bridge the knowledge gap and educate your provider.

6. **Why are my labs normal with Botox poisoning?** Standard blood work and routine diagnostic panels are designed to look for systemic inflammation, cellular damage, or organ failure, whereas botulinum toxin operates at a microscopic level. The neurotoxin specifically targets the peripheral and central nervous systems by disrupting neurotransmitter release at the neuromuscular junction without leaving detectable markers in routine blood draws. Because standard laboratory tests do not measure

neurological signaling disruptions or localized nerve terminal dysfunction, they typically return entirely within normal ranges. This common diagnostic disconnect often leaves patients facing debilitating, life-altering symptoms while traditional medical testing offers no objective proof of the underlying injury. Consequently, normal lab results reflect the limitations of standard screening tools rather than an absence of physical pathology or distress. However, running a more targeted panel can sometimes yield valuable insights. It is a good idea to have your thyroid and nutrient levels checked (including B vitamins, Vitamin D, and ferritin) to ensure your body has the raw materials needed to

support nerve recovery and overall function. Additionally, monitoring markers like ANA titers (antinuclear antibodies) and CGRP (calcitonin gene-related peptide) can be helpful, as these specific tests can sometimes come back elevated or abnormal following an adverse reaction. Ultimately, normal routine lab results reflect the limitations of standard screening tools rather than an absence of physical injury.

7. How do I handle routine dental work, cleanings, or other medical procedures while recovering?

Navigating routine healthcare requires extra planning when your nervous system is hypersensitive. Beyond

being cautious with local anesthetics containing epinephrine, many members find that the physical positioning in a dental chair (such as laying flat or having the neck hyperextended) can trigger vagus nerve irritation, dizziness, or muscle tightness. It is helpful to communicate your history of systemic toxicity to your providers ahead of time, ask to stay slightly elevated or take frequent breaks to reposition, and request plain formulations of necessary medications or numbing agents without added vasoconstrictors or preservatives.

8. **Why am I getting a relapse, and how long will it last?** Experiencing a sudden flare-up or "relapse" of

symptoms after you thought you were improving can feel deeply discouraging, but it is a frequent part of the recovery trajectory. Relapses typically happen because healing from iatrogenic botulism is not a linear process; the nervous system remains in a heightened state of vulnerability, and secondary triggers (such as immune activation via a viral illness or toxic exposure, stress, physical overexertion, or chemical exposures) can easily re-ignite autonomic and inflammatory chaos. Furthermore, as nerve terminals undergo the erratic and demanding process of sprouting and reinnervation, temporary waves of increased dysfunction can occur. Because every individual's nervous system load and degree of systemic

spread are unique, there is no fixed timeline for how long a relapse will last. For some, flare-ups resolve in a matter of days or weeks as the body returns to baseline, while for others, managing secondary drivers like Mast Cell Activation Syndrome (MCAS) or autonomic dysregulation is required before stability fully returns.

9. **How long does full recovery take, and how do I know if I am making progress?** Recovery from systemic botulinum toxin injury is non-linear and varies widely from person to person, often taking many months or even years depending on individual baseline health, toxic load, which nerves are affected, and if any

secondary medical conditions develop. Because healing can happen in waves, it can be difficult to notice day-to-day progress. Many people track recovery by measuring subtle shifts: experiencing shorter flare-ups, longer windows of baseline stability, increased tolerance to stimuli, and a gradual return of functional stamina. Keeping a simple symptom and energy daily or weekly journal can help you spot these long-term upward trends when progress feels frustratingly slow.

FINAL WORDS

Dear Reader,

If you've made it this far, thank you for being here. To all of you who are walking through the physical and psychological nightmare that is Botox poisoning, please know that you are **never** alone. It is likely that hundreds of thousands of people have survived this illness and gone on to live normal, functioning lives.

During the acute phase of my own illness in the fall of 2024, I was consumed by fear. Not just from what was happening inside my body (not being able to swallow solid food, work, care for my kids, or sleep most nights) and the lack of a clear prognosis, but also from the overwhelming isolation that came with it. Like so many of

you, I was gaslit by almost every doctor I turned to. Even some friends and family members didn't believe that what I was experiencing was real. Being told that the very symptoms that are severely disrupting your life are "just anxiety" or "unrelated" to your injections adds a profound layer of grief and loneliness to an already nearly unbearable illness.

Navigating this illness requires unlearning almost everything we have been taught since we were young about medicine. We live in a world accustomed to quick fixes: pills, injections, and/or treatments that promise to make us whole again, and *fast*. But healing from botulinum toxin poisoning is a painfully slow, non-linear marathon that feels like the worst Groundhog Day movie conceivable. This illness forces us to confront a timeline we can't rush, and

demands a level of patience and strength we didn't know we possessed until it became a necessity.

As you move forward through the long days and nights of recovery, please do not carry this weight alone. Lean heavily on your friends, family, and support networks. Lean on those who validate your experience and give you room to breathe and vent. Lean into distraction, really! Whatever brings you even a moment of peace, or a small smile—whether it is a funny show, listening to calming music, or simply sitting outside in nature. Give your nervous system permission to pause and heal.

Above all, remind yourself **daily** that your body wants nothing more than to return to its homeostasis, and it *will* continue to heal. A woman who was a

subject in Dr. Hristova's research recalled Hristova telling her that the single factor uniting those who made the strongest recoveries from Botox poisoning was an unwavering, positive belief that they would get better. Hope and positive thinking are not just comforts; they are vital catalysts for healing. When my mind was racing and symptoms felt overwhelming and neverending, I anchored myself with daily affirmations to calm my nervous system and rewrite the fear. The one I had written out and posted on my bathroom mirror, and returned to over and over again, was simple:

"I can heal. I will heal. I AM healing."

Say it to yourself, and say it out loud until your body believes it, even on the hardest days. You *can* do this, and you are not alone in this fight. I am sending you

strength, love, light, and steady progress. I wish you peace from the storm and a newfound clarity on your healing journey.

You can (and will) do hard things. You are so much stronger than you know.

Do not hesitate to contact me at metoxpretty@gmail.com with any questions, or if you need virtual support. Sending hugs and healing energy to all of you,

Megan

REFERENCES

Gottlieb SL, Kretsinger K, Tarkhashvili N, Chakvetadze N, Chokheli M, Chubinidze M, Michael Hoekstra R, Jhorjholiani E, Mirtskhulava M, Moistsrapishvili M, Sikharulidze M, Zardiashvili T, Imnadze P, Sobel J. Long-term outcomes of 217 botulism cases in the Republic of Georgia. Clin Infect Dis. 2007 Jul 15;45(2):174-80. doi: 10.1086/518890. Epub 2007 Jun 5. PMID: 17578775.

Hristova, AH. "Impaired Neuronal Communication Syndrome (INCS) as Novel Neurological Side Effect to Botulinum Toxin Type A Therapy with 16 Case Reports." 2016.

Mann JM, Martin S, Hoffman R, Marrazzo S. Patient recovery from type A botulism: morbidity assessment following a large outbreak. Am J Public Health. 1981 Mar;71(3):266-9. doi: 10.2105/ajph.71.3.266. PMID: 7468858; PMCID: PMC1619789.