

## Frequently Asked Questions

**“We use ION\*Gut Health as a foundation of health for a broad spectrum of patients. ION\*Gut Health does not treat any disease. Instead, it promotes strong membrane integrity through its direct and indirect effects on the tight junctions of the bowel wall and vascular systems of the body, and restoration of the bowel ecology with the unique bacterial communication attribute of the supplement. Microbiome balance and tight junction integrity are widely recognized to constitute a major portion of the human immune system, and directly affect DNA transcription of human cells to promote optimal health. The well-proven biology of ION\*Gut Health demonstrates its role as a foundational resource in your pursuit for optimal health.”**

**- Dr. Zach Bush, Founder and CEO of ION\*Biome**

### What is ION\*Gut Health?

ION\*Gut Health is a liquid, gut-brain health supplement that goes beyond probiotics, helping to support tight junction integrity and diversify your microbiome the natural way. It is soil derived, U.S. sourced, and naturally rich in a variety of humate substances, trace minerals, and amino acids. ION\*Gut Health's active ingredient, Terrahydrite®, isn't bacteria; it's a family of molecules made by bacteria.

### What does ION\*Gut Health do?

ION\*Gut Health supports tight junction integrity at the gut lining, which protects the immune and neurologic systems and regulates the delivery of water and nutrients to the body.

As demonstrated in our peer reviewed articles, toxins like glyphosate and gluten can degrade tight junctions in the epithelial layer of the gut lining. ION\*Gut Health has been shown to promote the strengthening of this gut barrier, which supplies the first line of defense against everyday exposures to environmental and foodborne toxins. This in turn helps with inflammatory response, enhancing mental clarity, promoting immune function, supporting digestion, and alleviating gluten sensitivity.

### How does ION\*Gut Health work?

The gut lining is a barrier, our first line of defense, working to protect our bloodstream (and the rest of our body) from toxic substances such as glyphosate, gluten, and other foreign particles. But just as importantly, it functions to allow the passage of beneficial nutrients. Preserving the integrity of this barrier is key to health.

Instead of feeding your microbiome with various bacterial strains, ION\*Gut Health works via carbon-based redox signaling to maintain tight junction integrity in the

epithelial layer of the gut lining. ION\*Gut Health primarily functions as a signal, not a nutrient. It provides a framework of communication for the gut bacteria, because of the ancient soil/bacteria carbon molecules it is derived from which, when stabilized, contain the same carbon-based redox signaling molecules produced by gut bacteria.

This directly affects mitochondrial redox signaling with a differential response – improves healthy cell longevity and increases apoptosis (cell death) in unhealthy cells. ION\*Gut Health helps maintain communication channels between our microbiome, the cells that line our intestines, and other parts of the body.

### Why should I be taking ION\*Gut Health?

Currently, 80% of the population suffers from gas, bloating, indigestion, and heartburn, all stemming from poor gut health. But when you factor in inflammation that is caused by poor gut health, those are just the tip of the iceberg. Given the number of symptoms, conditions, and diseases that chronic inflammation is responsible for, it quickly becomes clear why maintaining your gut health is so important.

So why do we suddenly need help maintaining our gut health? To start, overprescribed antibiotics, glyphosate damage, and a lost connection with our environment. Our microbiome is not thriving as it should and neither are we.

Rather than address a specific medical condition with a narrowly-targeted supplement, ION\*Gut Health takes a holistic approach and helps maintain the strength of our immune system to create an environment that supports total body and mind health.

### What are tight junctions?

Tight junctions are the seals between cells which help to create a defensive barrier in the epithelial layer of your gut lining. They function to keep toxins and foreign particles out of the bloodstream while also allowing nutrients to enter. Proper tight junction integrity at the gut lining is the foundation of health.

Tight junctions are protected by the carbon and mineral metabolites of bacterial digestion. When the intestinal bacteria are balanced and thriving, this matrix of metabolites produces a strong enzyme defense system that protects the tight junctions from the toxin zonulin.

Over the last sixty years there has been a steady loss of biodiversity in our bowel bacterial ecosystem. Factory

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farming, processed foods, and widespread antibiotic use have all played major roles in this decline. However, the most potent of triggers for zonulin impact at the gut barrier is glyphosate, the most commonly used herbicide. Gluten is the most potent of naturally occurring triggers for zonulin production in our modern diet.

There is a growing body of well-developed science that demonstrates that the tight junction barrier in the gut can be degraded with exposure to gluten and glyphosate (the main chemical in commercial herbicides).

ION\*Gut Health functions as an answer to glyphosate and gluten impact at the gut lining, by promoting increases in production of the enzymes that break down zonulin and thereby strengthen tight junctions.

### What is the gut-brain connection?

Recent science has called the gut our “second brain,” or “Enteric Nervous System” (ENS). It consists of two thin layers of more than 100 million nerve cells that line our gastrointestinal tract, from our sinuses all the way to our rectum, and serves as a vast communication network.

We now know that the majority of neurotransmitters, or “chemical messengers,” such as serotonin and dopamine, are made in our gut lining, with very little being made in the brain comparatively. However, the production of these chemical messengers is dependent on the right bacteria, fungi, and even parasites and viruses, being present in our gut. Together, these make up our gut microbiome.

### What is glyphosate and why is it harmful?

Glyphosate is the active ingredient in the most commonly used weed killers, including Roundup. These weed killers are used broadly in agriculture and found in varying quantities throughout our environment. The volume of usage of this herbicide has led to reports of significant levels of glyphosate in water, air, rainfall, and even human breast milk. The World Health Organization classified glyphosate as a “probable human carcinogen” and it is implicated in a wide variety of human health disorders.

ION\*Gut Health functions as a response to glyphosate and gluten impact by improving the gut lining’s ability to keep out these detrimental elements and promoting increases in production of beneficial enzymes. ION\*Gut Health promotes a healthy “firewall” in the gut and blood-brain barrier, to support a beneficial shift in the gut ecosystem as well as normal immune function. ION\*Gut Health improves gut resilience to glyphosate fast (18 hours), even in the face of 20,000 times the EPA-allowed levels of glyphosate.

### How do I know ION\*Gut Health is safe?

ION\*Gut Health is based in science. Our research has shown it to be non-toxic on sensitive kidney cells, even at high usage. We have conclusive laboratory evidence that shows not only zero toxicity for kidney cells bathed in 100% concentrations of ION\*Gut Health, but increasing cell longevity.

Our manufacturing and quality control teams adhere to all the FDA’s current Good Manufacturing Practices (cGMPs), and do regular testing on ION\*Gut Health for bacterial contamination, heavy metals, and overall product composition.

Perhaps the greatest validation of the safety of ION\*Gut Health, however, is the sustained success of the product on the international market. Clinical use in humans began in 2012, and the product went into national distribution in September 2014, and international in 2015, with no serious adverse events reported to date.

ION\*Gut Health is vegan, naturally gluten-free, dairy-free, soy-free, latex-free, sulfite-free, preservative-free, non-GMO, and certified glyphosate residue free. It is produced in a facility free of allergens, including peanuts and tree nuts.

### What is the usage of ION\*Gut Health?

For general gut-brain health, we recommend one teaspoon 3x/day. Optimal gut support is achieved when taken 30 minutes prior to meals because of ION\*Gut Health’s protective effects against gluten and glyphosate, but you can take it immediately before, with, or after a meal, (or on an empty stomach) and still receive benefit. Use can increase to one Tablespoon 3x/day to support health goals, although three teaspoons daily is adequate for most individuals.

### If you consider yourself “sensitive”:

Results can vary with initial ION\*Gut Health usage, with many customers reporting rapid and profound early results. These results are not the direct effects of the supplement itself, but instead reflect the innate healing process that occurs in a body as the firewall system is optimally up and running. There is a subset of individuals, however, that can experience symptoms of tiredness, headache, bloating/increased gas, or bowel changes.

In these situations, it is helpful to take a very slow and gentle approach. Three-five drops of ION\*Gut Health with

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meals daily or twice daily is a good starting point in sensitive individuals. After a few weeks the usage can be increased slowly as tolerated. The goal is to get to 1 teaspoon three times a day before or with meals for those over age 2, and 1/4 teaspoon three times a day typical usage for less than two years old.

### Could I be allergic to ION\*Gut Health?

ION\*Gut Health has numerous naturally occurring trace minerals and amino acids in it. We are aware of the vulnerability to some of these elements that certain individuals have. However, the concentrations of these trace minerals are far below the concentrations seen in the daily intake of a healthy plant-based diet and never in the metallic form typically associated with sensitivity. Cucumbers, for example, are high in naturally occurring aluminum.

Sensitivity to the ionic and organic minerals found in ION\*Gut Health, therefore, is not common. Additionally, ION\*Gut Health is sourced from plant-derived fossils and is routinely tested for contaminants. If you have an allergy to trace minerals, we recommend starting slowly with ION\*Gut Health, as detailed under “What is the usage of ION\*Gut Health”. If you believe you are experiencing an allergic reaction to ION\*Gut Health, stop taking the product immediately, and consult your healthcare practitioner.

### Are there any side effects with ION\*Gut Health?

As ION\*Gut Health begins to strengthen the tight junctions in the gut wall, it is not uncommon to experience mild, temporary side effects such as constipation as full hydration is promoted. In these cases, the first and best response is to increase consumption of water and herbal teas. It may also be beneficial to take a slower approach. See under “What is the usage of ION\*Gut Health” for sensitive individual usage instructions.

### For how long should I take ION\*Gut Health?

You should take ION\*Gut Health as long as you are getting exposure to those environmental factors known to impact the tight junctions in the gut lining, including gluten, glyphosate, and antibiotics. Organic, non-GMO, and gluten-free foods are great. However, avoiding exposure to glyphosate is the bigger challenge, as it has been shown to be contaminating even our rainwater. As with most supplements, you can expect to receive benefit as long as you are taking ION\*Gut Health, and for a residual period afterwards.

### Does ION\*Gut Health expire?

Through lab testing, we know that ION\*Gut Health stays safe on kidney tubule cells and efficacious in strengthening intestinal tissue tight junctions beyond six years (as long as ION\*Gut Health has been manufactured to date) so an expiration date is inaccurate. We now use a “Best By” date, six years from manufacture. Prior to that we used a “Manufactured On” date (MFG ON). If you have one of those bottles, your ION\*Gut Health (what was previously RESTORE) will be good for at least six years past that date.

### Does ION\*Gut Health cause detox?

The clinical spectrum of signs and symptoms that have been attributed to the word “detox” are vast. If we consider the full term, “detoxification”, we can bring some clarity to the process. The need to remove toxins is part of the body’s natural defense, and a healthy body has vast mechanisms for toxin removal.

Many people starting ION\*Gut Health have noted almost immediate signs of toxin clearance from the body. Urine, sweat, breath, and skin in the case of mineral foot baths, can all reveal toxin clearance. This is the result of the extremely rapid changes in the tight junction integrity as ION\*Gut Health promotes functional tight junctions in the gut, blood vessels, kidney tubules, etc.

To be clear, ION\*Gut Health does not detoxify anything. The body’s natural systems, once back online with intelligent membranes, produce all the natural detoxification pathways. If tight junction repair throughout the system is the reason for the mobilization of toxins and subsequent removal (detoxification) from the body, there is no redistribution of the toxin to other tissues. The toxins are instead trafficked to appropriate clearance sites of urine, breath, and sweat. We are excited for you to experience normal physiologic detoxification.

### Is ION\*Gut Health similar to probiotics or enzymes?

ION\*Gut Health is not a prebiotic, a probiotic, or a direct source of enzymes. It contains zero bacteria. We need a much more diverse microbiome than one can achieve by replicating the same strands of bacteria over and over (this monoculture can happen when we take probiotics).

ION\*Gut Health is unique in that it naturally enhances the diversity of your individual microbiome. It works as a communication network that gives our bodies the tools to create their own bacterial ecosystem again — that ecosystem that has been wiped out by environmental toxins such as antibiotics and pesticides. Without the

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communication network, there will always be overgrowth of certain species and underrepresentation of others, which is fundamentally a problem of communication that prevents each of the potential species from finding their niche within the system.

**Note:** Please consult your healthcare provider concerning the addition or removal of probiotics and digestive enzymes in your personal regimen, as each individual is unique, and we cannot make individual recommendations.

### Is ION\*Gut Health similar to other fulvic or humic substances?

ION\*Gut Health is a balanced formula, comprised of a very unique family of carbon molecules with oxygen-binding sites that are produced by bacteria when they digest nutrients. We extract our primary ingredient from ancient, fossilized soil that contains humic and fulvic substances. However, our raw ingredients are inert and without any biologic function when they arrive in our labs. We then go through a series of biochemical procedures to balance the oxygen redox potential via the addition of trace minerals.

The result is a dietary supplement with unique biologic function and safety not seen in any other product, including other soil extracts that have been marketed under a variety of poorly defined heterogeneous categories such as humic acids, fulvic acids, shilajit, etc.

### Are there any contraindications with ION\*Gut Health?

There are no known contraindications with ION\*Gut Health. However, for maximum efficacy of all products, we do suggest separating by 30 minutes if you are taking ASEA, a thyroid medication, iodine, or a binder supplement.

Iodine is a highly-charged element that can bind to negatively-charged elements in ION\*Gut Health. Also, certain “binder” supplements (clay, charcoal, and zeolites) recommend taking separately from any nutrition, food, or supplements.

ION\*Gut Health supports healthy gut membranes. This support returns expected drug absorption to normal levels and may improve bioavailability of your supplements and food nutrients. If you are on a medication that requires blood level testing to adjust the dose (such as blood thinners or seizure medications) you should discuss ION\*Gut Health with your doctor, who may want to get testing done within a week of taking ION\*Gut Health, as you would do with a diet change or adding other mineral supplements.

None of the minerals or amino acids in ION\*Gut Health are present in levels that would be considered adequate to allow ION\*Gut Health to replace other standard mineral therapies, such as Lithium orotate or your regular multi-mineral supplement, in your health management.

### Where can I purchase ION\*Gut Health?

ION\*Gut Health is available in our online store (with both a one-time purchase option or discounted through our subscription program), from many healthcare practitioners, and in many retail stores nationwide. ION\*Gut Health is also available through various online retailers, including Amazon and iherb.com.

### If I have more questions, who do I call?

If you have additional questions or concerns, you can call Customer Support toll-free at 844.432.5488, or email us at [info@ionbiome.com](mailto:info@ionbiome.com).



Gluten free



Vegan



BPA free

