

I recently listened to Jeffrey Smith's interview with Dr. Zach Bush about glyphosate's impact on the neurological system. He's been involved with some fascinating new research on how the gut microbiome operates that you might be interested in.

### **Glyphosate's Impact on the Nervous System: From Autism to Alzheimer's**

<http://restore4life.com/jeffrey-smith-interviews-zach-bush-on-glyphosate-the-nervous-system/>

Here are some of my notes:

Inflammation is caused by a loss of cell communication

It was mostly familiar territory for me, but Dr. Zach talked about the communication system of the microbiome, the carbon-based redox molecules that contribute to a healthy gut brush border. When the microbiome is depleted (by antibiotics, and toxins like glyphosate) that system gets out of whack, too much zonulin is produced which leads to leaky gut and all the problems that creates – inflammation and all the many ills associated with that.

He has developed a product that restores that communication system, enabling faster healing of the gut when you clean up your diet. Called **Restore**, it "is a new generation, earth-derived supplement. It is not a probiotic. It is not a prebiotic. Rather, it is a carbon rich, alkaline liquid, with lignite derived trace organics and essential trace amino acids, that promotes an optimal environment in the gut. With 70% of the immune system located in the gut, this optimal gut environment leads to great gut health."

<http://restore4life.com/keep-gut-healthy-benefits/>

Could be worth studying the research on the website, as it could be helpful with those with persistent health problems. Works better than probiotics, he says - more direct for closing the leaky tight junctions, which allows the body to heal the leaky gut.

He also made the point that we pick up microbes from the air, as well as from our fermented & raw foods, though he said some commercial fermented foods are inoculated with only a few bacteria and aren't as effective in populating the gut with a wide variety of microbes.

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Restore, the supplement, restores the tight junctions so that undigested gluten and other food particles does not enter the blood stream. Doc. Bush sees patients who are sick with chronic disease and he finds most of them have leaky gut. He encourages them to clean up their diet, including avoiding gluten. Check out his clinic philosophy and you see he uses a very comprehensive approach to healing <http://www.revyourhealth.com/practice.html>  
But Restore speeds up the gut healing, which can often be a long and difficult process. He said people with gut issues often experience feeling better within hours of taking the supplement. Interesting to look at his staff - 2 MDs, energy therapist, and consultants - herbalist, acupuncturist, massage therapist. (<http://www.revyourhealth.com/Staff.html>)

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### **Gut Brain Injury: Why Probiotics Don't Heal**

<https://www.youtube.com/watch?v=cQXf5Nky0sY&feature=youtu.be>

was hosted by <https://www.holisticprimarycare.net/>

Probiotic supplement have few varieties, vs a healthy gut that has a huge variety of species. But when taking Restore the microbiome species increase spontaneously. The air is a source of a wide variety of microbes.

Quoting from one of the slides:

- Each bacterial species (30,000 species) creates a unique subset of carbon metabolites during the digestive process.
- These function as an interspecies molecular communication network that allows for coordinated cell protection, injury response, and repair.

Quote from the interview

Interestingly, those same tight junctions lace together every other membrane in the body. The blood vessels, from the hepatocyte in the liver, all the way to every system in your body, including, importantly the kidneys, which are big, huge tangles of blood vessels that are responsible for clearing toxins. All of those membranes are tight junction dependent, and as we start breaking down tight junctions in the gut wall, there's an immediate consequence throughout the whole system. The system that I think is second most vulnerable to the gut is the blood-brain barrier. A very dense concentration of tight junctions in the blood-brain barrier. As soon as you get a gluten or glyphosate exposure at the small intestine you make Zonulin, and that Zonulin goes systemic and damages tight junctions throughout the system. This relationship between brain fog and the number one complaint of gut health, is exactly what you're going to see again and again, due to this relationship of the tight junctions.

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That's the relationship between bacteria in these tight junctions because those carbon redox molecules, made by the bacteria, are the support system to these tight junctions. And so, you lose biome, you lose immune system communication, you lose tight junction integrity, and you leak. The Zonulin that you mentioned is not made by the bacteria, it's actually made by the epithelial lining; it's a human-made peptide. That Zonulin production that is a consequence of the glyphosate injury, is then going to go and weaken the tight junctions throughout the system.

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