Episode 205: Everything You Need to Know About GMOs, Glyphosate and Gut Health With Dr. Zach Bush

Copyright © 2018 Wellness Mama · All Rights Reserved

Child: Welcome to my Mommy's podcast.

This episode is sponsored by me freezing my butt off… well kind of. I'm talking about the cold therapy plunge tub that I recently got from FuroHealth that I've been having a love hate but mostly love relationship with lately. Cold therapy has many well studied benefits including increased circulation, increased production of mood boosting neurotransmitters and increased lymphatic flow. It helps produce brown adipose tissue that can aid in weight loss. In fact, studies show that cold water immersion at just 14c (58 f) for 1 hour increased metabolic rate by 350%, norepinephrine by 530% and dopamine by 250%. In other words, if it were a drug, everyone would take it, but instead, I just soak in some cold water every day. The tub I got ranges from 42-58 degrees and plugs into a regular outlet so it can go anywhere and it can stay cold without the need for ice or filling. Check it out at furohealth.com

This podcast is sponsored by Thrive Market- they've been my go-to place to buy organic and natural foods for years, and I've found myself turning to them especially in the wake of the hurricane hitting our local area. While our home was spared, many people in our area and that we know lost some or everything they had and there is a long process of rebuilding ahead. In the first few weeks, as local stores sold out of many non-perishable foods, diapers, wipes and other essentials, and I'd already given away everything I had, I was able to place bulk orders on Thrive and send them directly to relief centers to get them to those in need. The same non-perishable foods like tuna and sardines, bars, and healthy snacks that our family always has on hadn't were literal life savers for those who are working to rebuild. I was so grateful to have Thrive Market as a resource to be able to help those in need, and it was another reminder of why I love them so much. While I hope you never have to experience a natural disaster, Thrive is a great resource for everyday staples and organic foods anytime that you need them. Just for being a Wellness Mama Podcast listener, you can get an extra 25% off your first purchase plus a free 30 day membership to try it out. Check out Thrive Market at thrivemarket.com/Katie

Katie: Hello and welcome to the Wellness Mama Podcast. I'm Katie from wellnessmama.com. And I cannot wait to jump into this episode because I am here with Dr. Zach Bush, who is one of the few triple board certified physicians in the country and certainly the first I've ever met. He has expertise in internal medicine, endocrinology and metabolism, and hospice palliative care. In 2012, he discovered a family of carbon based redox molecules made by bacteria. And we're going to go deep on those today. He and his team subsequently demonstrated that this cellular communication network functions to compensate for Glyphosate, which many of you guys have asked me questions about and many other dietary chemical and pharmaceutical toxins that disrupt our body's natural defense systems. And the science has resulted in some amazing breakthroughs, also which we're gonna talk about today. But Dr. Bush, welcome and thanks for being here.

Dr. Bush: Katie, thanks so much for having me on. Appreciate the whole audience, all of you for your pursuit of knowledge and your inspiration to change the world. So, thank you.

Katie: Oh, thank you. And I think the audience today is really gonna learn from you. They typically… The listeners love to go deep on the science and I know that you have a wide amount of knowledge on a lot of different topics. If I remember correctly, you also have a background in cancer research. If that's right, can you kind of take us through how you got into cancer research and what you found when you were in that field?

Dr. Bush: Sure. Yeah, the unifying theme of my entire career has been non-linearly. It's been an unexpected journey at every step. I went into internal medicine, you know, really hospital based attention to end-stage chronic disease kind of management. Severe stuff, the ICU kind of environment. And then I got into

Copyright © 2018 Wellness Mama · All Rights Reserved

endocrinology, thinking that, you know, if I could get to a point of knowledge where I could sort of prevent disease rather than just manage chronic disease, that would be an exciting kind of next step of my journey. And in that transition into endocrinology, I ended up being really interested in the mitochondria, which are actually non-human little organisms that live inside of our cells. And the mitochondria are very similar to bacteria, except that they live inside rather than outside of our cells.

And the mitochondria produce energy for the human cell. And in so doing, they produce a whole bunch of metabolites or breakdown products. You can almost picture this as the exhaust from your tailpipe of your car. Your vehicle has an engine in it that's converting carbon based gasoline into an explosion, and harnessing that explosive potential of the gasoline as it ignites with air to produce energy. And the exhaust coming out the tailpipe is simply the atmosphere and nothing else because it's not locked into this kind of closed loop of regenerative state that biology always is. Biology is always up cycling everything. And in that way, the mitochondria, as it burns glucose and fat, as the gasoline for the mitochondria, it's producing the output, which is ATP, adenosine triphosphate. That's kind of the explosive energetic potential coming out. In addition to that ATP is producing all of this exhaust and the exhaust or these metabolites, we used to think were as harmful to the cell. Oxidants, these very reactive compounds.

And so, when I was in medical school and in that journey back in the 90s, we really thought these were harmful to the cell. Fast forward to the mid 2000s, we come to find out that it's really the whole secret of longevity, and human health, and all of these important factors, was this communication network or reactive molecules coming out of mitochondria producing a communication chain. And so, what a profound statement on biology that in production of energy, the communication for what to do with that energy also comes from these mitochondria. And so all of that, the information as to how to use energy and the energy itself is produced by non-human element of our biology. And so that was a pretty interesting area to be in, in the 2000s.

By the time 2007, 2008 turned, I had gotten into the cancer research because we had discovered as a field, that mitochondria were really clutch in the pathophysiology of how a cancer cell involves. Long before the cell starts to develop the characteristic human features of cancer, the mitochondria become damaged and its ability to not only produce energy, but its ability to produce this communication network starts to falter. And ultimately, a cancer cell is a cell that's become highly damaged and toxic and has lost the ability to kill itself. The last line of defense for health of any organism is its ability of each individual cell to recognize when it's too damaged to do work anymore and needs to eliminate itself. So it's called the apoptosis, which is programmed cell suicide to be induced when the cell finally reaches that state of non productive component of the community.

A cancer cell loses that and then loses that information long enough that it thinks it's the only thing of life left in your body. And so the cancer cell does not realize that it's part of a 70 trillion celled organism anymore and it's too injured to repair itself. And so it's only option for survival is proliferation or copying itself. And so that turns into a tumor, which can ultimately, depending on how desperate the cancer is, can ultimately turn into a metastatic condition that takes over your body and kills you. And that whole time there actually is not really a malignant, you know, personality to those cancer cells. They are actually the most lonely and damaged cells in the body and they're just trying to hold on to life for anything possible. Because at the fabric level fascinatingly, the cells are programmed to survive. And so, that's the journey, you know, kind of the shortest

Copyright © 2018 Wellness Mama · All Rights Reserved

version I can give of how I found my world of endocrinology and metabolism back to this critical world of cancer.

And of course, when you start to talk about fuel and the gasoline that would fuel these, the glucose and fatty acids, you quickly start talking about nutrition. And so I started developing chemotherapy through this line of research and my chemotherapy was focusing on Vitamin A compounds. Vitamin A is a very fascinating nutrient within our food that can induce this apoptosis or programmed cell suicide, by turning on a number of receptors within the cell and ultimately within the mitochondria. And so that was my journey into the cancer world and then ultimately from the cancer world back into this world of nutrition.

Katie: That's fascinating and I don't think many people get to say that they are triple board certified. What does that actually mean on a tangible level? Does that mean you have expertise essentially in three separate individual areas of medicine and you've passed the board on all of those?

Dr. Bush: That's correct. Yeah. So, there's a lot of people that are certified in three different things. There's a lot of doctors that are certified nutrition and other things. But not really on purpose, but just out of the journey of my career, I did get ABIM board certified in three different areas. Internal medicine, which is the kind of outpatient and in-patient medical expertise for managing chronic disease. And then the endocrinology and metabolism was my second specialty. Endocrinology is the study of hormones and the way in which they can coordinate health or disease management within a complex body with many organ systems that need to be interdependent on each other. So the hormone system was fascinating to me. And then the second part of that being the metabolism.

As I was kind of progressing through my career, by the time I'd been a physician for eight years with all this expertise in different areas, I was finding that despite all my learning and all of this I had done, it wasn't impacting my patients' lives the way I would hope. And I would see my patients really suffering under my care. And I was seeing their diabetes getting worse not better over time. I was seeing their heart disease get worse not better over time. I was seeing cancer come back despite short term successes with chemo, radiation, surgery, kind of stuff and ultimately their demise from that cancer or a secondary cancer that we caused by the toxic therapies I was giving or any different kind of combination thereof. I was starting to see the real frailty of the field. And in that journey, I ended up deciding nutrition was the path I wanted to go and left university in 2010, started my own nutrition center in a rural Virginia with the intent of finding a program that was educational at a level that could reach some of the most impoverished parts of our country.

Knowing that, you know, the real fabric of our society is being threatened right now by the massive explosion of cost associated with chronic disease management. And we really have an insoluble state financially as a nation already, and we're kind of faking out the world by accumulating all this debt that's really upholding our medical class more than anything else. To put the cost of that in context real quick, you know, our national defense budget is around $650 billion a year, which is an insane amount of money to spend on something like military operations. The $650 billion pales compared to the $3.5 to $4 trillion that we're spending on health care annually. So, you have to multiply by four or five times the money that we're spending on national defense to pay for our current health care, which of course is not leading to health. It's leading to chronic

Copyright © 2018 Wellness Mama · All Rights Reserved

disease management, and in fact, a decline in health. We keep dropping in the ranks. We're currently 49th in the world for health outcomes. So, pretty dismal record on that.

And so in that journey, left academia, decided to start this nutrition clinic and was failing pretty quickly financially because I wasn't a businessman. I didn't know how to run companies and it turned out it's challenging to help people understand why they need nutrition because there's so much pharmaceutical advertising out there that the population has been slowly coming around to reality that it doesn't work. But you're still overcoming an enormous amount of misinformation out there every time somebody turns out on the TV. So, that led to kind of me going back to my roots and really asking myself, you know, "Okay, I can't just support my family with this clinic that I've started. What do I really love doing in medicine? What's my passion going outside of this nutrition stuff?" And it came down to the end of life.

I always enjoyed being present in the ICU with my families who were seeing their loved one pass and transition to the other side. And that journey, you know, got me back into the hospice and palliative care environment. So, I became associate medical director and I ultimately got board certified in hospice and palliative care as my third subspecialty. That went outside the university setting. It was really a rewarding journey. I was working with an extraordinary team of nurses and energy therapists and all kinds of people who were really there to administer comfort, and nurture, and compassion at the end of life. And that was a very rewarding piece of my career there.

Katie: Well, that's an amazing thing. And I've followed your work for a while and one of the things I love so much is that you have such a wide variety of knowledge in different areas and that also as a result of even being in the medical community, you were able to step back and see some of the problems that were existing and that you look to nutrition. I feel like that's uncommon for a lot of doctors and I'm curious if based on all of that, on your research and your hands-on work in this, if you see any common threads that you think could help explain. I know it's obviously a very much multifaceted issue, but are there any common threads that you think could explain why we're seeing the skyrocketing health care cost and skyrocketing health problems kind of across the board right now.

Dr. Bush: That is an amazing story that's unfolded over the last eight years ,so the question is very well put there. But I've had a passion for finding root cause stuff since I was a kid. I like problem solving, I like finding the reason something's happening. And that was definitely already part of my mission at the University of Virginia. I was creating think tanks, most of those were think tanks cross university with sociologists, and dance majors, and people from all ilks to try to think about our collapse of human health and how we might deliver health care differently to create this. So I was kind of already in that mindset. And then when I jumped out of academia and started nutrition, I really believed that the whole collapse of the disease state that we have right now is part and parcel to the food and the lack of nutritious food.

And so, I thought I had already found kind of the root cause scenario there. Like, people are just eating too much pre-prepared food, there's way too much processed sugar, there's way too much, you know, processed foods in general, not enough good fibers and all this in the diet. And so, I set out to create, you know, yet another nutrition clinic that was teaching really intensive nutrition programs, where we were teaching a plant based diet, getting people low on the food chain to decrease the toxin load, increase the nutrient load. And

Copyright © 2018 Wellness Mama · All Rights Reserved

I'm very much kind of a go big or go home kind of personality and so I was juicing my patients like crazy. Having two pounds of produce a day, going in to their green smoothies on top of their plant based meals and everything else. And so I was really aggressive. And it only took a couple of years, maybe 18 months, two years of seeing ,you know, a big cohort, a couple thousand patients through these programs for me to realize that those patients that were not succeeding were doing exactly what I asked them to do.

And up until that point, I'd been a doctor for, you know, 12, 13 years by this time and I had been taught, both kind of subconsciously as well as consciously and verbally that, when you see a patient who's not succeeding on the treatment that you've prescribed, then it means that they're non-compliant. And so we always, you know, insidiously turn the blame on the individual rather than taking that critical eye on our own protocol and say, "Is the medication I'm treating the patient with actually making them worse? Could it be that they actually are compliant and the drug isn't working or the drug is making them worse?" And so I'd gotten used to doing that in the pharmaceutical realm, but it took me almost two years before I was willing to do that with the nutrition realm to say, is it possible that my kale smoothies are actually making these people worse because they were getting more inflamed, more bloating. They were feeling worse. Their labs were looking worse despite massive effort to get incredible nutrient load into them.

Now, a third or so of our patients would just act right by the textbooks and their diabetes would melt away. We saw tumors regressing. We saw cancer remissions. We saw all kinds of dramatic stories unfolding for maybe a third of our patients. And then there was a third that just seemed to plateau and not really get better, but they also weren't getting worse. They were just kind of stuck. There was a full third I think that were really declining on these nutrition protocols. And once we kind of asked that question of, is it possible that they actually can't tolerate healthy food? Which seems so to the antithesis of everything we've been told about nutrition, that's when we made our major breakthroughs. And so we started looking at the food itself, which again, took us right into the soil and a colleague of mine, William Vitalis, brought in a 90 page whitepaper on soil science.

And about halfway through this paper, I was flipping through it really quickly. I was late to a patient in clinic and standing in the lobby with William and just looking through it quickly to give him my initial response. I suddenly saw this molecule on page 40-ish that looked very similar in its three dimensional structure to the chemotherapy I used to make. So it really halted me in my tracks and it led to a new line of questioning of, is it possible that there is medicine in the soil? And through the poor soil management of the decades, is it possible that we've lost the natural medicinal quality to our food? And with that loss, all we end up with is, you know, foreign material that the gut can't handle in this kind of debilitated state of the food. And so, in that journeying, when we find found these carbon molecules that have been there for millions of years and have been talked about many times in soil science and even in some areas of dietary supplementation, things like that, but nobody had actually recognized what they were, or if they had become knowledge to the greater good.

And so, in recognizing the potential of these molecules, being potentially redox molecules, the same exhaust metabolites that we had found and worked with in mitochondria at the University of Virginia, I started to realize, wow, those could exist outside the cell. And that's pretty unique because the mitochondrial communication network is very, very ethereal. It only functions in the very protected space of the inside of the human cell. It's too reactive to survive outside of the cell, and so it doesn't create a functional communication

Copyright © 2018 Wellness Mama · All Rights Reserved

network outside the cell. And when I saw this molecule, I had this huge unique carbon backbone on it that was much different than any of the other redox molecules. And that carbon back bone would allow it to be stable outside of the cell. And so that was the theory. And so we started extracting different segments of fossil soil, looking far back in time as we could.

So, we ended up in a fossil soil out in the southwest desert that's about 60 million years old. It's a huge fossil, covers a few hundred square miles. And this fossil soil has a very rich abundance of these carbon nutrients in it. So we were extracting these, and like many of the other soil extracts of mineral supplements that have been on the market, you have to be very careful because they are very oxidative. They tear electrons off of other structures. Whether it's your gut lining or in the case of our initial studies, kidney tubules, which are kind of the most sensitive cells in the body. And so we took these in this compound then through a catalyst process to get the oxygen and hydrogen back to its living form. After 60 million years in the soil, these carbon molecules had lost their hydrogen bonding and were really eager for electrons. So they would tear them off just about anything you put them next to. And so that journey into kind of reinvigorating these ancient soil compounds that are made by the bacteria and fungi, I'm not sure if I mentioned that in this segment here. The bacteria and fungi within the soil end up being the ones that produce this communication network.

And that was an aha moment in and of itself because by this time, in the late 2000s I was doing my cancer research at UVA, it had become very clear through work from UCSF, UCSD, University of Virginia involved in some of it, that the bacteria within the human gut and it's kind of characteristics within that community of bacteria could predict human disease. And this was very trippy. It was very hard to believe this at the time because our model of cancer was that it was a genetic condition. You have to accumulate enough genomic injuries within the human cell before it becomes injured enough to become a cancer cell. And somehow every single university studying the genomics of the microbiome or the bacteria and fungi within human gut, kept finding that there was very good correlations that if the microbiome population was missing a couple species, then the person was very prone to a specific type of cancer.

Not just cancer as a whole, but specific. If you're missing this bacteria, you're prone to breast cancer. If you're missing this vector, you're prone to prostate cancer etc. And so, there's just this very amazing correlation happening, but even to this day, you fast forward 10 more years, nobody has been coming up with the reason in which these bacteria determine so specifically what diseases the individual might come up with. And this kind of answered it suddenly. It was, oh my gosh, there's a communication network. Each bacteria and fungi make it different subspecies of these communication molecules. Isn't it likely that as you kill the microbiome and its diversity, you lose this communication network, and thereby, lose the natural intrinsic information stream that informs the human cell what it needs to do to heal, to repair, to kill itself, whatever needs to be done?

What if all of that information is not coming from just the mitochondria, but it's coming from the microbiome, and hence the kind of closure of the loop. You kill the microbiome, you become isolated as a human species. You can't feed the mitochondria. You can't communicate with the mitochondria. The mitochondria can't communicate with you. You just start to get toxic as the bacteria and fungi fail to filter out the junk from the gut. You start absorbing everything that should have been swept up and cleaned up by the microbiome, and you end up with chronic disease.

Copyright © 2018 Wellness Mama · All Rights Reserved

Katie: Wow. And that totally explains what you were seeing in patients who were compliant and still not able to respond positively to things that would otherwise have been so healthy. And I'm curious, I'm gonna throw a controversial topic at you and get your take on it, which is, right now there's so much in the news about GMOs and Glyphosate and it causing cancer. And there was just a big lawsuit on that. So I'm really curious. Obviously, this is something that a lot of us in America, it exists in our society. It's a hot topic. Do you think that's coming into play with this decline in the ability to communicate within the body?

Dr. Bush: I certainly didn't even know about Glyphosate at the time I made the discovery of these molecules. But it was the very first thing that we really discovered that these molecules did, was combat that the effects of Glyphosate within the nutrition stream. And this is all from the PhDs and the Director of our labs, his name is Dr. John Gildea. A brilliant man. Has trained in genetics at Johns Hopkins. Worked for the Defense Department detecting chemical warfare for our troops abroad. Eventually found himself into the health field doing cancer research, and kidney and hypertension research all kinds of stuff. Brilliant guy. And when I showed him these carbon molecules and how to start managing the cancer cells that I used to work on, he used to help me with my cancer research when I was at the University of Virginia. And so, we kind of restarted that line of research together outside the university and we were able to show very quickly that these cells were doing very dramatic things in regard to protein synthesis and kind of the activity within the human cell was being dictated by these bacterial and fungal metabolites.

And pretty quickly, as you watch these things happen on the microscope, you realize that it is likely that we had kind of stumbled upon nature's solution for the Roundup problems. Roundup is the most ubiquitous weed killer on the planet right now. We're spraying for now 4.5 billion pounds of this chemical into the soils, water systems, atmosphere, etc. And so we're buried in this chemical. And John had been following the research around Glyphosate for about 10 years before this and what had become clear is Glyphosate was functioning as an antibiotic, anti-parasite, anti-sickle cell organism kind of thing. It's definitely the most abundant antibiotic we have on the planet. The significance of that is that if we start to pour an antibiotic into our soils and we lose the matrix of information at the biome level where we start to lose that biodiversity at the soil level, we end up with weed like monocultures of microbiome, which leads to a perturbation or loss of the balance of the ecosystem for sure.

But that leads a perturbation of the balance of the nutrients within our foods. And so suddenly our foods can express a few things to an overt degree and lack just about everything else. And so now you can picture something like kale going into my patients at two pounds a day in the form of juicing and all these smoothies we're making with fiber. And we suddenly realize the reason they were getting inflamed had to do with the loss of the completeness, if you will, of the food itself due to this soil management with Roundup and Glyphosate. So that's kind of problem one with Glyphosate and Roundup. It destroys the ecosystem through annihilating the really foundation of life itself, which is the bacteria, the fungi, the mycelium, the substrate. We're now working with a bunch of farmers nationwide to help train them back to converting from GMO farming back to no till organic soils. That product is called Farmer's Footprint.

And that product has really revealed the toxicity of Roundup in the soils. We were out in fields that have been sprayed year after year multiple times a year for 20-25 years, and you see just an amazing amount of decimation of the soil architecture. A single application of Roundup can actually kill 50% of the earthworms on a single field. So, it's just the speed at which it decimates life within soil is really unprecedented. And so here

Copyright © 2018 Wellness Mama · All Rights Reserved

we've been sterilizing our soils for the last 25 years, 1996 on was the most aggressive. So, 1996 for the debut of the GMO, genetically modified organisms that were built as Roundup-ready, meaning they could be sprayed directly with Roundup, suddenly allowed the farmer to stop just this little spot spray use of Glyphosate and start spraying the entire field in Roundup. And that led to obviously, not only death of the soils, but also runoff. And so it turns out that Roundup is a water soluble chemical and it ends up in the water systems.

Obviously, the largest water system in the United States is the Mississippi River. And over 85% of the Roundup sprayed in the United States ends up in the Mississippi. It's a water soluble toxin, so interestingly, as that Mississippi meanders down through the entire Midwest and down into the Deep South, that river is obviously putting off water in the form of evaporation into the air. And as you probably know, there's a fair amount of water concentration within the air we breathe. In addition, as that water evaporates, it ends up obviously in the clouds and then rain will result. And it turns out that today, we can measure that 75% of the rainfall in the Mississippi River Valley is contaminated with Roundup, 75% of rainfall. Seventy five percent of the air that is breathed is contaminated with Roundup.

And so you can see the amount of sterilization of the ecosystem that we've done with this single water soluble toxin on a planet that's 70% water. Unfortunately, our bodies are 70% water as well. Well, I guess that's not unfortunate, that's life itself. But it's unfortunate to have a water soluble toxin enter a body that's 70% water. And so now picture this chemical entering the human system. Where do you need microbiome more than anything else? It's the gut. You also have it in your skin, you have it your Nereis, and more recently, we've discovered that there's actually bacteria inside of every one of your organs taking care of the human environment. The breast, for example, the human breast has healthy form of bacteria, many different species, but the most dominant tends to be sphingomonas in the female breast.

Sphingomonas provides nutrient and information stream to the breast tissue to keep it healthy. If that woman starts to accumulate stress in that breast in the pathway that leads to the breast and they start to get acidification of the tissue, start to lose good oxygen supply, sphingomonas can't live there anymore. It backs off and a different bacteria called methylobacterium radial tolerance moves in. And methylobacterium tries to do damage control in this woman's breast that's getting increasingly sick and deprived. And if every bite of food you have has an antibiotic in it, and if the air you're breathing has an antibiotic in it, you end up wiping out the bacteria in the gut, on the skin, in the lungs, in the breast tissue, everywhere you start to decimate this. And amazingly, they've demonstrated now in a number of studies that the more you sterilize a tumor, the more methylobacterium that gets wiped out, the more aggressive the tumor becomes. So the more sterile the woman, the more likely she is to die from breast cancer.

One of the slides you can see if you go to my website, ZachBushMD, there's a bunch of lecture videos, so you can watch these slides in real time. But I've got the maps from the CDC and from the "New England Journal of Medicine" showing a perfect overlap between antibiotic usage from your physicians and the deaths from cancer. So we have this perfect correlation state by state. The more antibiotics we prescribe, the more people die from cancer. So we have incredible population statistics proving out that the more sterile we make the community, the more likely they are to die from cancer. And it's not a coincidence that at the end of the Mississippi River, the last 90 miles of that mighty Mississippi, runs from Baton Rouge to New Orleans, Louisiana, and that is the highest rates of cancer in the entire developed world.

Copyright © 2018 Wellness Mama · All Rights Reserved

We have known this for decades and yet we have not moved on that. And when I say decades, it's only really the last decade and a half because previous to that, the highest rates of cancer were in the northeast to northwest, but never in the south. And so we completely reversed the demographics of cancer in our country over the course of 1997 to 2007. In that single decade, we reversed our demographics of cancer death by the use of one antibiotic, which is of course, Glyphosate Roundup. And so in the question, does Roundup cause cancer? It does it through multiple mechanisms and that's why I think it's been really frustratingly slow to get the academic world to wake up, is they look at cancer in such a narrow model. And so they put, you know, chemicals on the cell and see if it causes cancer. Well, we do this all the time in our laboratories. We put Glyphosate on all kinds of different cells and it destroys protein structure so very quickly.

And the main protein that it tends to kill the fastest is something called the tight junction. Tight junctions are the Velcro that hold all of our cells together, the extracellular matrix. And you can't have a cell maintain itself identity if the tight junctions all fall apart. And so if you get isolation cell, it loses track of what type of cell it should be. In the case of the gut, we can show that small intestine cells which look much different than colon cells, will immediately lose their phenotypic kind of characteristics and identity as soon as you break the tight junctions. Immediately, they start to look like cancer cells. Cancer cells look like fiber glass. These skinny little cells where there's a collapse of volume of their cytoplasm and they start to look elongated. That can happen in 16 minutes after exposure from Glyphosate as it laces all the tight junctions and gap junctions that connect one cell to the next. The isolation that results immediately leads to this precancerous kind of behavior within the cells in minutes.

If that Glyphosate injury were to continue and you keep those cells isolated, then it's just a matter of time before you get cancer. And it doesn't take much more than a road trip up and down the Mississippi River to find out that our farmers are so sick that all of the children have neurodegenerative kind of stuff. We see a ton of autism. We see a ton of attention deficit, hyperactivity, a ton of asthma, a ton of seasonal allergies, environmental allergies, food allergies. We see a ton of obesity. We see a ton of major depression and anxiety disorders in these children. We see precocious puberty. We see early insulin resistance in type 2 diabetes. And so the children that are eating, drinking, literally breathing and being rained on by Roundup in their agricultural lifestyles are just being decimated so quickly.

And the adults, of course, many of them are on their second diagnosis of cancer and they're kinda going to going through all these journeys, it's just a real devastation of human health. And so, from a science standpoint, there is no question that Glyphosate causes cancer. The only realm that there is a question about Glyphosate is in the politics. The politics will drag on for another decade I think, but the reason why we're seeing the success recently in the illegal persecution finally of getting these people called to responsibility in the form of Monsanto, I believe that's only happening because Monsanto sold itself recently. And so it's no longer a U.S. company. It was sold to Bayer which is the largest pharmaceutical company in Germany. And so now it's a German company and that gives them some degree of protection against long term litigation of class action lawsuits.

And so Monsanto actually sold itself very cheap to Bayer and I think that cheap sale was because it was starting to become inevitable that these were gonna come down the pike and they had dumped an enormous amount of money over the years in blocking these cases from going to court. So then they sell themselves successfully to Bayer and then within two months of that, we see the first successful legal case. And so I don't

Copyright © 2018 Wellness Mama · All Rights Reserved

think any of those are coincidences. I think that we're seeing a very measured risk management of a very wealthy company trying to figure out how to protect itself from its awareness. There are papers published by Monsanto on the carcinogenic futures of their compound Glyphosate dating all the way back to the late 80s.

And so, in the science literature, it's been well established even by the own company that this thing can cause cancer. All those studies were done in mice and other organisms showing that was extremely carcinogenic. And so, for whatever reason, they were able to kind of, you know, massage data or work with data such that they were only presenting favorable information to the EPA, the USDA, and all the regulatory bodies of these last few decades. So, an amazing journey of science being twisted and I think ultimately, for some sort of private sector gain.

Katie: Wow. I'm struck by so many things you just said because I actually grew up in the Mississippi Valley and I saw a lot of that play out, and I also saw how much they spray all crops. They just completely spray Roundup everywhere. And these guys are in hazmat suits in these gigantic tractors and they just completely water it. Like, it's like they're watering it, but it's all Glyphosate. And to your earlier point about it, you know, in the medical community, you often blame the patient for the problem, that seems to be what even in medical literature now, it's of course there's more obesity and diabetes and all these problems in the south. And they blame it on the food or the people are lazy or they have all these explanations. They don't fully explain, like you said, how we actually shifted where the cancer rates were the highest in a very short amount of time.

This episode is sponsored by me freezing my butt off… well kind of. I'm talking about the cold therapy plunge tub that I recently got from FuroHealth that I've been having a love hate but mostly love relationship with lately. Cold therapy has many well studied benefits including increased circulation, increased production of mood boosting neurotransmitters and increased lymphatic flow. It helps produce brown adipose tissue that can aid in weight loss. In fact, studies show that cold water immersion at just 14c (58 f) for 1 hour increased metabolic rate by 350%, norepinephrine by 530% and dopamine by 250%. In other words, if it were a drug, everyone would take it, but instead, I just soak in some cold water every day. The tub I got ranges from 42-58 degrees and plugs into a regular outlet so it can go anywhere and it can stay cold without the need for ice or filling. Check it out at furohealth.com

This podcast is sponsored by Thrive Market- they've been my go-to place to buy organic and natural foods for years, and I've found myself turning to them especially in the wake of the hurricane hitting our local area. While our home was spared, many people in our area and that we know lost some or everything they had and there is a long process of rebuilding ahead. In the first few weeks, as local stores sold out of many non-perishable foods, diapers, wipes and other essentials, and I'd already given away everything I had, I was able to place bulk orders on Thrive and send them directly to relief centers to get them to those in need. The same non-perishable foods like tuna and sardines, bars, and healthy snacks that our family always has on hadn't were literal life savers for those who are working to rebuild. I was so grateful to have Thrive Market as a resource to be able to help those in need, and it was another reminder of why I love them so much. While I hope you never have to experience a natural disaster, Thrive is a great resource for everyday staples and organic foods anytime that you need them. Just for being a Wellness Mama Podcast listener, you can get an extra 25% off your first purchase plus a free 30 day membership to try it out. Check out Thrive Market at thrivemarket.com/Katie

Copyright © 2018 Wellness Mama · All Rights Reserved

Katie: So, I had not thought of Glyphosate as an antibiotic. It makes perfect sense with what you said and I'm fascinated to go see your site and see that graph line up of antibiotic use and cancer. And purely from a selfish perspective, I would love to know and I hope you can answer, is it reversible and is it fixable? Because for instance, as a child, I had recurrent strep throat and I had dozens of rounds of antibiotics before I was five. So, I know probably other people listening are also wondering, you certainly made a super compelling case for the problems we're seeing. Is it fixable at this point or are we too far past that?

Dr. Bush: I'm an eternal optimist. My optimism may not last as long as the human species at this point. We have created the sixth extinction in this journey that I just described to you as chemical farming. There's been five major extinctions on planet earth in the fossil record historically and this is the first one that's been caused by the hands of one of its species. And so, we have engineered an extraordinary collapse of life. We have actually taken to the point of extinction over 40% of biodiversity on Earth just the last 40 years. That is a crazy statistic. Forty percent of biodiversity to the point of extinction in just these few decades. We are currently accelerating that. We are currently losing one species every 20 minutes. And so in this short hour together, we will lose three species to the point of extinction, never come back again.

We have engineered that collapse of health on the planet and it's not surprising as the human health is dependent on the health of the organisms and life around us. And so, I think this is the ultimate checks and balances that nature has put in place is, if we or any other species is so insane to undermine in a narcissistic, self-absorbed, selfish fashion, all of the resources the planet and rape the soils and pull all these resources out and give back nothing. Kill, kill, kill. Extract, extract, extract, we will die from the resulting isolation and loneliness. And so the cancer, the autism, Alzheimer's, all of these are symptoms of our premeditated demise, really. And that premeditation has to do with consumer behavior. And so, I do not wanna sit here and blame Monsanto or any other company because it's a waste of time. We're not gonna turn things around quick enough. I believe we can heal. I don't think it is too late for us to turn our microbiome around, but we have to do it very, very quickly and we have to do it together.

And so we need to recognize that it was consumer behavior that created Monsanto. It was our own laziness, our own desire for a comfort lifestyle to buy the newest iPhone, to buy, you know, some new shiny car. All of these things are symptoms of a convenience lifestyle driven by more and more cool technologies. And it's that behavior of the human brain are kind of always looking for the next shiniest thing has led us to this consumptive behavior. And so we outsourced our food production. We did this very quickly. In World War II, we had this huge ad campaign to support the troops. And remember, we were coming out of a famine in the United States. We'd had a massive famine with the Dust Bowl. We had killed the soils through poor crop rotation and lack of soil management.

It turns out that we've recreated that not even 100 years later. And so 80 years later we find ourselves in the second Dust Bowl in just 100 years, both of them by our own creation. And so if you go up to Minnesota, you'll see that we're losing more topsoil than we did during the Dust Bowl. And so we are just demolishing our ecosystem through this poor soil management. So World War II in recovery of that famine, there was a big push to grow your own food and so they started this campaign called Victory Gardens. And all the people left at home were encouraged to grow a backyard garden that was big enough to not only provide for their own family, but also to provide for the troops at large. And so people were sending everything from produce to

Copyright © 2018 Wellness Mama · All Rights Reserved

their backyard raised chickens over to the troops to help supply the nutrient needs for the mobilization of these millions of men around the world.

At the end of World War II, we were growing almost 45% of our food chain in our backyard victory gardens. Forty five percent of our food. Now today we are growing less than 1/10th of 1% of our food in our backyards. And so, over those decades, that second half of the 20th century, we simply got lazy. And in so doing, farms had to respond and farmers did through chemical means, grow their farms from an average of 100 acres or so to tens of thousands of acres, managed often by one individual. And so chemical farming and the technological advances that came out of chemical management of weeds and soil and harvesting, all of these things allowed for mass scaling of a few farmers to feed the many who were not growing their own food.

And you hear this argument, Monsanto and other chemical companies say, "Well, we have to farm this way to feed the world. There are 7 billion people. We're all gonna starve if we don't do large scale chemical farming." Well, that's not at all true. It turns out that 70% of the world's population is currently fed by a peasant farmer. Seventy percent of the population fed by a peasant farmer. Well, we could easily join those ranks by becoming peasant farmers again. If we could grow just 1% of our food, we would reduce the rationale for chemical farming. But if we could grow that back to 5% or 6% of our food growing in the backyard, nowhere near that 45% is needed to take down any rationale for mass farming. And so we really need to become part and parcel with this solution in our own lifestyles.

And if you can't grow a garden, or you don't have the resources, you don't have the time, whatever you think are the barriers, then you support a farmer directly. Again, Farmer's Footprint, you can find it on my website or you can find it on the farmersfootprint.us is the website. And this is a nonprofit that's matching consumers back to farmers. And so right now it's in its education phase. We've created a docu series, the first film is a 30 minute segment on the farmers of the Midwest and Minnesota up at the headwaters of the Mississippi, and we're tracking the success of these farmers who are transitioning back from GMO farming back into no till organics. And it's a really compelling story and Farmer's Footprint are debuting at Telluride Colorado festival coming up next weekend called Original Thinkers. So keep an eye out for Original Thinkers if you want more information there too.

But Farmer's Footprint is there because we realized as a group that if we create a nonprofit to hook the consumer back to the farmer, we can solve this problem nearly overnight. We've already shown that we can reverse 18 years of chemical farming in 18 months. We can get the soils back. And so that's a really encouraging story and a very hopeful thing, that if we just tie back consumer interest and consumer investment to our farmers, we can create a bigger incentive than they currently have with the Farm Bill that's encouraging them to grow GMO crops and sugar beets and all kinds of terrible things. And so, we're very excited. For as little as $100, you'll be able to help sponsor an acre farm land. And a third that will go to farmer education, a third of that will go to administration and building of the IT platform that allow the farmers to talk back and show their progress back to their investors. And it's gonna spend a third on safety net income for these farmers.

A lot of them can't make a transition because the banks have got them locked in a codependent relationship of spiraling debt that keeps them from being able to exit the current paradigm. Banks are not willing to lend

Copyright © 2018 Wellness Mama · All Rights Reserved

money for organic no till farming because they think it's risky, whereas they'll keep funding and allowing the farm to go into more and more debt over genetically modified chemical farming. So it's just this ironic trap that our banking system has set for our farmers. And the exciting thing though again is how little money it's gonna take on the consumer side to really empower these farmers to do exactly what they wanna do, which is grow healthy soil for healthy food and have a productive economy again. These farmers are financially collapsing. An acre of soybean is lucky to return $40 an acre of profit for that farmer. And so, a whole year's worth of work on an acre of land, $40. And so that the margins are so narrow and none of these farmers are really succeeding until they make it transition out. And the exciting thing is they can go to $500 to $600 an acre of returns in this kind of organic no till super healthy agriculture environment. So they can 10 fold, 20 fold, increase their income by making the transition, but they need a little bit of safety net in the first couple years and that's what we expect to do with Farmer's Footprint.

So, I'm very excited and passionate about this thing. I really think that the solutions are at hand and it has to do with human relationship. We all want to survive. We want most importantly for our children to survive. And that's not happening right now. Forty six percent of American children have a chronic disease diagnosis. Forty six percent of American children have a chronic disease diagnosis. That is the biggest travesty of human experience that I can think of. To put that in context, in the 1960s, only 4% of the entire population of the United States, all ages, had a chronic disease. So we've gone from 4% of the population to 46% of our children with a chronic disease over these decades. And again, that's one root cause. We have killed the ecosystem through chemical farming. The biggest chemical among them, certainly Glyphosate.

Katie: Wow. That's incredible and I love the work that you guys are doing. I'll make sure all of those links are in the show notes, so that people can find them and get involved. And I will also definitely check them out and get involved. Back to, I'm curious from the biological perspective as well. So, that's super encouraging that we can hopefully heal our environment and the damage we've done. For people like me who have had severe antibiotic exposure and probably growing up in Mississippi probably a lot of Glyphosate exposure, are there things we can do to support the body based on the research you're seeing to hopefully undo that damage on a biological level? I know that one of the things you helped develop was something called Restore, which is one of the very few things I give to my children. But I'd love for you to talk about this process and what we can do to kind of replenish on a biological level as well.

Dr. Bush: Yeah. So Restore is the first dietary supplement in line. It's coming out of the research around these carbon molecules that we discovered in the soil back in 2012. So, we rolled that out as a dietary supplement after proving out its safety and then proving out its efficacy. And so its efficacy is many fold that we've proven over these years. Number one, Restore really helps to support that tight junction protein barrier system of the gut lining. Many people have heard about the problem with leaky membranes that's happening. Some people have leaky intestinal symptoms, symptoms of leaky intestinal environment. And that condition is really directly linked to this Glyphosate presence in the food and water system. What we've shown is that the bacteria and fungi increase in this communication network dramatically increase the…accelerate the rate of production of these critical proteins.

Some of these proteins that are supported by Restore we know are damaged by the Glyphosates. A roundup of Glyphosate kills DPP4 enzymes. DPP4 enzymes are one of the main important regulators of detoxification in the gut lining. It helps protect the tight junctions. It does all kinds of things down that avenue. But it also

Copyright © 2018 Wellness Mama · All Rights Reserved

happens to be very important in insulin regulation and the regulation of our metabolism. And so DPP4 enzymes are depleted by the presence of Glyphosate in our food and water and the Restore quickly enervates that effect and supports a normal production of DPP4 enzymes in the intestinal lining, both small intestine and colon. Then it helps very rapidly, within minutes of exposure to the gut membrane, up regulates the production of ZO-1, which is a protein that is integral to that tight junction. And we can see these damaged membranes going into its intrinsic capacity for healing. All those cells have the ability to heal these tight junctions after injury, they just need the information stream.

Restore actually doesn't do anything actively. It's a very passive supplement. It doesn't try to fix anything. It doesn't hit any receptors in the human body. It's not trying to do any drug pathway. You know, it's not like Vitamin C or vitamin D that are hitting these very specific pathways inside the cells. Restore instead is the wireless communication between the bacteria, the fungi, and human cells, and it coordinates the natural response mechanisms that all of these biologic systems should have. And so, one of the really cool things about humanity is we have at our fabric level, the ability to heal. We are biologic healing machines and the only time we don't do that is when we lack the information. So Restore is the communication network that's produced by the biome, bacteria, fungi, parasites, viruses, all product contributing biggest pieces of that product bacteria and fungi.

And so the bacteria and fungi are massive kingdoms of biome. There's over 5 million species of fungi, for example. This is mind boggling biodiversity. We have way over 40,000 species of bacteria and we are just beginning to untangle the characterization of all of those. And so we just have this huge journey ahead to see the beauty and complexity. But we've kind of short circuited that research because we know it's gonna be decades before all that's done and said, "Well, what about going way back in time, 60 million years ago. There's a communication network. There's a microbiome that produced life on Earth so abundantly that it reached scales that we just can't support today." The dinosaurs growing at that time, the Brachiosaurus, for example, and Allosaurus, many times the size of an elephant and yet their heads and skull structure was no bigger than a horse. And so despite the small amount of teeth, and jaw, and oral space, these dinosaurs munching away on a plant based diet were able to maintain massive biologic size and support all that life through the richness and nutrient density of their foods, and no doubt, the coordination through the communication network made by that biome.

And so we're shooting right back in time to that era to show that if we have that level of communication at the cell level we become pretty bulletproof. And so Restore has become a real foundation for health for people of all ages. It's now become a real foundation of over 1,500 clinics worldwide. We have thousands of natural food stores and health food stores that sell it now and it's growing all the time. And so it's become a phenomenon because it doesn't do anything. It simply supports normal human biology, which heals at a rate that's never been experienced before. It's very rare to find a supplement that you actually can feel working. And Restore is really unique in its ability to really shift things very quickly again, because your body wants to heal at a pace that is extreme. We heal so much faster than we injure.

I mention that the soil after 18 years of chemical farming can recover the vast majority of its healthy architecture in just 18 months of chemical free healthy nutrient delivery and communication network. And so we have another product that we're developing for the farms to pour onto their soils to get this communication network back, which immediately brings the mycorrhizae, which are the kind of

Copyright © 2018 Wellness Mama · All Rights Reserved

communication highway of the fungal world and the ecosystem network for the bacterial biome to start to establish on. And we show that within even a couple weeks of treatment, but within 18 months, we've really got a complex soil structure starting to return. That same thing can happen in the human gut. Annihilated by all the antibiotics, wiped out by our typical medical systems. So think about right now 34% of births in the United States are done by C-Section, one in three. And so one in three births, C-Section.

A C-Section is a sterile delivery. That child just missed the entire opportunity to inherit mom's microbiome. A C-Section baby is about inherit the hospital flora as its main microbiome. Then it's put on the breast and it inherits mom's skin flora instead of her vaginal flora that would have been delivered through the vagina canal. And so C-Section is the classic set up for all of the childhood diseases. Typically within the first couple weeks of life, we see colic, which is kind of that inconsolable crying at night from bloating and just lack of digestive health in this little infant. By the time they're six months old they get their immunity turned on, their immune system starts to work.

That's when we start to see early signs of chronic sinus congestion, chronic environmentalist sensitivity, food sensitivities kicking in by one and two years old. Ear infections and the like by one and two years old. So they start getting antibiotics which of course narrows their ecosystem even further, and they dip in this vicious cycle by the time they're three and five years old, they're getting strep pharyngitis. Strep is abnormal flora within our pharynx. But if the microbiome gets too wiped out, it becomes a weed like in its growth and it starts to dominate and can perturb our immune system. So strep is not some, you know, weird little germ that pops into the kid's throat. That thing's supposed to be there but it's supposed to be within a balanced ecosystem. And so the child starts getting more antibiotics for that. And by the time they're in their teens, they're gonna likely to start to have some sleep disorder, start to have challenges with weight and anxiety. All kinds of different things starting to sneak in as their system starts to suffer the collapse of information at that cell level.

Katie: That makes perfect sense. And I definitely echo your suggestion that we should all be growing more of our own food. And I'm curious if A, this supplement could be sprayed, the Restore, could it be sprayed on a garden in its current form or for instance on the skin to help rehabilitate those systems as well?

Dr. Bush: We use Restore all over the place, yeah. And so, it'd be an expensive way to treat the garden, so we're trying to scale up production for an agricultural product that will allow for cheaper application for large scale agriculture. But you can certainly take a bottle of Restore and spray it into your garden and expect some pretty spectacular results. If you've got kids, if you wanna do a cool educational experience for them on the importance of microbiome for health, you can do just a very simple experiment where you take an egg carton and apply water to the seeds in each compartment and then in half of them, add a couple drops of Restore right at the seed. And watch the speed at which it germinates, watch the speed at which it grows. And you'll quickly be able to show that kid that if we support the plant life with a healthy microbiome information stream, we're gonna see richer nutrients, more bioavailability of those nutrients, faster integration into the biologic system for growth. And that's the same thing for you kiddo.

And so if we can get you some healthy vegetables inside you, we're gonna see the same result. Complex microbiome in concert with nutrients within food makes you grow healthy and strong. And so it's a very

Copyright © 2018 Wellness Mama · All Rights Reserved

simple experiment but a powerful one for moms to kind of get their kids engaged in that garden experience. I have a lot of patients that come into our clinic and say, "We've got to get this autistic kid eating some vegetables." And they say, "He won't touch vegetables. Kids never like vegetables." And 9 times out of 10, no matter autistic or not, if a kid doesn't like vegetables, it means they've never picked vegetables from garden. I have never seen a kid be able to go out in a garden pick a bunch of vegetables and not be curious enough to eat it.

And so I really believe there's a powerful way to change human behavior and lifestyle through just exposure to that natural world. We're intrigued by it. We're amazed by it. Everybody knows how good it tastes to have a cold snap pea that just got picked. You know, everybody knows the taste of a fresh picked tomato or I hope you do at least. And if you don't, what an experienced to share with a child. And so, your farmer's market is a good way to get closer to that garden, right? So, get to know your farmers. Support them if not through Farmer's Footprint, then some way find a local community service agriculture project to get engaged with, get your children engaged with, get your grandkids engaged with, get your schools engaged with. And I'm very encouraged that so many elementary schools and middle schools, high schools, are starting integrate greenhouses and other growing experiences into the education platform. So, I know we can change it. We can change it in one generation and we have to. If we don't, we're headed for that extinction about ourselves.

Katie: Absolutely. And I think we may have to eventually do a round two because we didn't even get to touch on genetics or the gut brain connection today. But I wanna respect your time. And in conclusion, I'd love to ask a question I very rarely get to ask someone with as much knowledge as you. Which is, knowing all of this clinical experience you have and then also all this research and nutrition, I'm curious what the things are that you actually do every day for yourself and for your kids that you feel like are the biggest and most important things that support your health.

Dr. Bush: Diversity, diversity, diversity is key. We all fall into these ruts and I love seeing the diversity happen in diet. Certainly, beyond growing food, the next most important thing you can do is probably ferment your own food. So cheap to do, it's so easy. Again, easy to get kids involved with. My son actually did most of the fermentation in our house for a lot of years. My kids are grown up now. I have 20 and 18. My daughter's just going off to college here again, so, I'm feeling that empty nest kind of effect going on here. But, you know, in those years of them being in middle school, they got very engaged and both of them actually became very intrigued and were part of the transformation of our family to a plant based diet when they were about 8 and 10 years old. And my daughter is a passionate animal lover and when she saw the movie "Food Inc" back in the day, it really transformed her a decade ago and she said she'll never eat meat again, realizing the travesty of what we're doing to these animals.

It is pretty daunting. Right now we are we are butchering 60 billion animals a year for human consumption; 60 billion animals a year are slaughtered for human consumption. That amount of life being killed every year is something to be considered, it's something that we should all think about. So, I really encourage everybody not just think about Meatless Mondays as a lifestyle for a family, think about meatless weeks and if you wanna chicken, eat it on the weekend and really try to, you know, reduce the humanitarian crisis we have going on in our animal husbandry. And we're just really torturing these animals to a huge degree. So, I inspire all of you to eat closer to the garden, whether it's low on the food chain, less meat, more veggies, more fruit, get real, and enjoy it with your kids.

Copyright © 2018 Wellness Mama · All Rights Reserved

Katie: I love that. Thank you so much for your time and for your wisdom today. I will make sure we link to your website. I know that you have many, many more resources and I appreciate the work that you're doing to educate and also to create active change. I feel like you have a very unique skill set in this and I love that you're using it for so much good in the world. So, thank you so much.

Dr. Bush: Wonderful. Thank you so much. Yeah, those websites were farmersfootprint.us. My clinic, if you want clinical resources for your family, a great incredible dynamic integrative environment there. And we're in Virginia but we're actually creating a network of clinics over the next couple years. You can keep your eye out for. That clinic website is the themclinic.com., themclinic.com. And I can get you those resources. We have an online course for health and nutrition lifestyle kind of boot camp. It's called Biology BaseCamp Intrinsic Health for your family. There are resources there for you guys. And then of course the Restore website which is www.Restore4life.com. And then more education and all of my lectures you can find on YouTube or at my website zachbushmd.com.

Katie: Perfect. And again, I'll make sure if anyone listening while driving or running that those are all linked in the show notes at wellnessmama.fm, so don't worry about writing them down while you're doing other activity. But thank you of course, always to all of you for joining us today and sharing your most valuable resource of your time with us. And I hope that you'll join me on the next episode of the Wellness Mama Podcast.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.

Copyright © 2018 Wellness Mama · All Rights Reserved