Nurturing Your Microbiome

Is It Gluten or Glyphosate That's Harming Your Gut?

With Zach Bush MD

James: Hey, Zach, how are you doing? Great to have you here.

Zach: Really a pleasure to be with you, James. Looking forward to being here with you and the audience.

James: Yeah. So to kick straight off, I think, you know, gut health has had what I would say is an enormous rise to prominence over the past 5 to 10 years from relatively unknown to everyone's obsessed with probiotics and looking after the gut health and bloating and gas and indigestion. There are so much more discussions.

Why do you think it's so important now more than ever before, and how do you think it's gotten this new sort of PR lift in a way?

Zach: Yeah. The biology of the gut hasn't changed in billions of years, probably of life within the cosmos. And that's, the gut is the foundation by which any life form comes forward. So if we look at soil systems, the soil's gut system of a plant that's growing there, and the plant grows its intestinal lining, external to it, to its organism so that it can absorb nutrients from outside of it the fungi or, or the first version of that.

So the fungi recognized the opportunity to, instead of try to have a stomach or an internal digestive system similar to a bacteria, so bacteria will absorb nutrients, and digest them internally, the fungi outsourced that to the soil and realized that they could do far more energetic work by excreting digestive enzymes outside of the, the fungal network outside of the mycelial web, and let the soil system digest all of its nutrients and then absorb it after digestion.

And so humans do something similar in that we've created a body that doesn't take in the nutrients into every single cell and try to deal with it on that level. And so we outsource it to the soil. And so we have developed a body that has this tube that we call it gut that is actually external to the human body. And so your mouth to your rectum is an external environment to the human body. The human body actually begins at the gut lining and everything deep. The gut lining is you and everything within the gut, the stewing environment of your stomach, the small intestines, all the digestive enzymes there, all the way through the nutrients and water absorption process of the colon.

All of that stuff inside the gut is external to the human body. So we learned from the fungi, and maybe you've heard that we're more similar to a mushroom or a fungal system than we are to many animals. And there's some truth in that because of the way in which we've outsourced there, the intelligence of a diverse ecosystem or a soil system to do a lot of our work for us.

And so we have not changed that matrix in the last five years, just as important now as it was then. What happened is humans lost their gut health, and people actually never really give anything appreciation till we've lost it. Right. You don't know how good life is until you lose that one thing that you were taking for granted. And in this case, it was the gut.

James: Yeah, that's so true. Humans are a funny species to not value something, until it's lost. I mean, there's this saying, if you have your health, you have a thousand goals, and if you don't have your health, you have one goal, right? Which is to get your health back. Speaking to this idea of our insights not being us, Daniel Vitalis, who's a great nature-based philosopher, he reveres his work. He's like a host of *Wilded* now, a show on Nat Geo. He told me once that we're a little bit like a donut, and our mouth to our rectum is the inside of the donut, except we're just sort of stretched out. And we allow things into our bodies through the way that our skin, both inside our digestive tract and outside of our body interacts with the world. You know? And I think that it's almost like sad the way that we treat it. We're really not that in touch with it.

Probably the first question I would have to follow on from this is how do people know if their gut health is out balance? Like you said, people don't realize that something is important until they lose it. How, what's the sort of first telltale signs of people having an issue with their whole digestive system, and what's like, end-stage issues?

Zach: Yeah, interestingly, the beginning is symptoms that we wouldn't necessarily attribute to the gut. And so the end stage is the bloating and the digestive issues. And you have chronic constipation, Crohn's, chronic diarrhea, these kinds of syndromes, inflammatory bowel disease where you've got autoimmune conditions that can be anything from celiac to celiac disease being the gluten, trigger all the way to things like Crohn's disease or ulcerative colitis. So that's kind of the long way down. The pathway of a destroyed gut system.

Way upstream, the symptoms tend to be neurologic. And we now know that the gut has more neural endings than any other organ system within the entire body. There are actually more neurons in the gut than there are in the brain of a dog. And so you've perhaps heard that the gut is the second brain, but ultimately the way in which we're starting to understand it we get better and better at microscopic imaging of the gut lining in the in vivo state in a living gut.

We're starting to be able to image the neural system, starting to realize that the gut's the first brain and the thing that we tend to think of is the human brain up top. And in your head is actually the CPU chip. And so the essential processing unit in your computer is a vital piece of the

computer. And that accelerates the amount of information you can process, but it doesn't create the information. The laptop that I'm sitting in front of right now has a keyboard on it, which is what would eventually get information to that CPU chip so that it can start to make patterns and do some pattern recognition. Or I can give my computer instructions for that CPU chip to receive a bunch of data from a hard drive or from the internet.

And so we're uploading data up into the CPU chip of the computer and the better that CPU chip, the faster the computer, the more I can do. But it's the same thing I can do. So, interestingly, the slow computers that I grew up within the 1980s could do the same thing just way slower, right? And so the brain is similar to that. The CPU chip up here is an extremely fast processing unit, but it isn't the thing that creates intelligence. It can maybe do work faster, but the human brain isn't more intelligent than a dolphin or a monkey or whatever you're thinking of as kind of our competitors out there.

In the intelligence game, what's happened is we are playing with better data sets and when I say a better data set to create intelligence or the parents of a superior intelligence data sets are improved as they get more diverse inputs. And so the more species that are inputting data to your single CPU chip, the more intelligence you tend to be able to exhibit. Because the CPU chip is getting more rich and diverse perspectives on the reality that you're living in.

And we now know that the human colon is the most complex, most eco-diverse, most biodiverse system on the planet. More so than coral reefs, more so than rainforest, more so than any other large intestine of any other, mammal the human colon through some massively beautiful process of perfecting an anatomical organ system has developed so many niches micro-ecosystems within it that it can harbor more biodiversity per cubic centimeter than any place else on Earth.

And for this, the first brain is able to get so much data from so many diverse perspectives, and this is what creates intelligence. And so the CPU chip of your human brain is processing data quickly, but the intelligence is actually coming from the gut itself.

It's coming from that soil system within you, a healthy human gut, 40,000 species of bacteria with probably half a million species of fungi and yeast and protozoa, and a bunch of other stuff in the mix. Whereas in an American gut or somebody living in a kind of your average industrialized food system walking around with 10,000 species of bacteria.

James: Wow.

Zach: So you've lost 75% of your workforce, and therefore you're starting to detect some of these issues where the first brain isn't getting the information that you used to get. And so the neurologic symptoms that are early on in a failure of gut health tend to be difficulty concentrating. Poor short-term, and long-term memory consolidation, poor creativity. You kind of lose that

creative streak. You start to get into that depressive mode where nothing seems to stimulate the juices like they did before. And so you start to collapse in that creative stream, maybe start to pick up your arts and crafts a little less. You're not playing your guitar quite as much.

And so you're seeing this literal kind of dumbing down of the human expression and creativity from this loss of the biodiverse inputs that were giving you the creative input, to begin with. And so those initial things are just like that slight failure to thrive state of just monotony, where you get into a groove. And then as that starts to deteriorate further, then you get into migraine headaches, vascular headaches, cluster headaches, poor sleep quality, poor sex drive, Going and then dropping down into the inflammatory cascade, inflammation of the joints, inflammation of organ systems, for the male middle age, the common one is prostate symptoms.

So urinary frequency - can't empty the bladder as much. So these things don't seem to be oriented to the gut or resulting from, but this is the upstream stuff, when that workforce starts to fail, it's these subtle neurologic shifts that are really the beginning of it.

James: Yeah. Super interesting, Zach. And early on in my food journey, which has spanned, nearly two decades now, and, you know, began with sort of more hardcore like raw food and connecting back into nature and just basically saying no to anything process, right? That was the beginning. And then over time, there are different learning points and different data sets that you get access to, both from a feeling perspective and from a knowledge perspective. And it shifts.

But early on, one of the experiments that I did was after I really cleaned my body out, I could tell that when I ate something that wasn't resonant with my being, the first thing I noticed was a suppression in my mental health. And it's funny that you say that. It really connects to me. So in Australia, which is my home nation originally, and in Britain, there's a famous food group called, fish and chips, which is pretty abhorrent, really the modern version of it, right? So it's basically fish, which is not necessarily bad, but then they batter it with,non-organic flour, and then they deep fry it and vegetable oils. So this is the antithesis of healthy food, right? And then I noticed that it was that particular food, if I ever ate it, and this was quite a while ago, it's definitely not on my menu at the moment.

The next day I would notice a suppression in my mental aptitude, a slight depressive feeling, and just overall like a reduction in my humanness, right? And it was a very clear correlation, and I feel like many people maybe don't allow their body to speak to them. They turn, it's like the light on the car. And if it's on all the time, you sort of ignore it. But if you're a clean eater and you try this and you have to notice it immediately. But if you're eating like this all the time, I mean, it's like, well, that's how I am. I'm just sort of a little flat, a little depressed, a little off, a little tired. And for you to sort of reiterate that the first symptoms in neurological really resonates with my experience personally in testing these different food groups in my body. I mean, it's big.

Zach: Yeah. And it's exciting in that the solution is so simple, right? And the beginning is, the beginning of that journey is just stop doing so much damage, right? So it's not like you're going to go crack the code on the universe here to figure out gut health. And so fortunately, the journey into health can start pretty quite simply of like, well, if I just eliminate the top five noxious things I'm putting in my body, that'd probably help out. And the fact is, it does help and starts moving you moving the needle.

But what you just described, I think there's another way of looking at this to the biology, which is a hangover. And so you described the day after I suddenly felt this thing drop. Woke up groggy, feeling flat, a little depressive, not feeling like going to work. You can think of a typical hangover being attributed to alcohol, but the phenomenon is actually almost identical. So alcohol is one of the first compounds that normalize in the human diet that breaks the gut lining's tight junctions. And so the velcro that holds billions of gut cells together, a single gut cell is about half the circumference or half the diameter, if you will, of a human hair.

James: Mm-Hmm.

Zach: So that gives you a sense of just how tiny a gut cell is. And so you've got billions of these cells that create the largest surface area of the human body. So larger than a tennis court and surface areas are your gut lining made up of billions and billions and billions of these microscopic cells that are held together by these velcro-like proteins called type junctions and alcohol dissolves, those type junctions, give you this leaky gut phenomenon for a few hours.

Your body will kind of recover that over the extra day, a few hours, but the next morning you're dehydrated. And you didn't do a good job of worrying water from the gut because it was leaking, it was water would try to get into your body, but it would come leak right back out into the gut and pass with the stool. You get chemicals and compounds that weren't supposed to be in the body, leaking into the body, and so therefore your immune system's activated after the day after excess alcohol.

And so you could kind of go down the list and it turns out that's what our modern food is doing this. It's now using herbicides rather than alcohol to break those types of junctions. And so the hangover we now have from a modern typical processed food industry is a literal hangover the next day. Yeah. And so we're having that phenomenon on top of the drug hangover. And what I mean by a drug hangover is that the fat-salt-sugar combinations that you would have in the fish and chips meal, for example. And so the fat-salt-sugar would be something like the battered oils with the salt that's poured into that on the fries and the fish, and then the beer or the soda or carbohydrates.

So sitting next to that would be very typical. And so that fat-salt-sugar combination induces the brain to have a cocaine response. And so the frontal lobes, after a happy meal for a child going to

McDonald's look just like you had just given that kid a hit of cocaine. And so that cocaine massive burst in the frontal lobes of, of the human feels phenomenal in that first few minutes. When you get that fat-salt-sugar, you're like, oh my gosh, I feel so much better after my stressful day. I'm nailing it now, this is, I'm on target, feels great. And you get into your groove and then a couple of hours later, if you're not continuing to stimulate yourself with another fat-salt-sugar thing, it starts to weigh quickly.

And then the next day you're having that withdrawal from the drug stimulus to your frontal lobes. And so all the receptors for cocaine or for the fish and chips have been downregulated. And now it's much harder to stimulate your pleasure pathways the next day because of the overwhelmed stimulus that it got the day before from the fat-salt-sugar combination or your cocaine. And so this is where addiction happens as well.

Now, it takes a whole lot of stimulus to get a brain that's down-regulated. It's a pleasure center to do something that feels good again. So now the next night you go, or a week later you're back at the same restaurant and you're going to eat more, you're going to stimulate more to get that pleasure to cascade going to get the same effect that you did before. And this is the classic alcoholic. You're going to drink a whole lot of alcohol to get any kind of good buzz if your body is normalized to this low stimulated state, this low pleasure, kind of experience. So we're addicted to the drug side, and we're suffering the consequences of the hangover of a leaky gut when we face a typical herbicide pesticide and processed meal.

James: Yeah. It's sometimes you think about it and you're like, did the food companies orchestrate this? There's sometimes you feel like, is there an ulterior motive here? Or also we're pretty simple organisms. I feel like we had a headache. Well, instead of doing breathwork and drinking more water and going for a walk, we want a pill, right? And so the pharmaceutical company said, okay, sure, here you go. And so then the next thing you know, we have cars and I don't want to get out of my car to get food. So then, you know, you have a drive-through. So I don't know that it's in, like, I think it's just like the self-perpetuated desire for more and more comfort, which is slowly killing us.

And there are people like mutual friends of ours, I'm sure, like Wim Hof, etc., that are like, no, it's important to not be comfortable. It's actually one of the most important tenets of being human. And I find in my life if I have too much comfort, I'll blow it up every five years or so, it's like, no, there's something in me that's like, oh, it's just not right.

You know, I have a reasonably philosophical question, which I've grappled with for a number of years. I saw actually, which is an interesting full-circle moment. John Robbins speak at a longevity conference with David Wolfe, maybe about eight years ago. And John wrote *Diet For A New America*, and I've been very humbled to produce his movie of his life story, *Love Over Money*, and get to know him in a much deeper way. And just an incredible gentleman. And his sort of first

book *Diet For A New America* was really, tearing shreds on industrial meat production in the US and sort of promoting more of a vegetarian way of living. And in 2008, 2012, 2014, a lot of movements around that. And it's a very righteous idea.

But at that talk, he first started to hint on this idea that it was the type of meat that had changed, which could have been having the deleterious health impacts more than just the meat consumption itself. And it got me thinking because we of course increased our meat consumption in a modern developed Western world, but at the same time that we produced more low-quality animal products by factory farming and feeding them corn, wheat, and soy, foods that were never meant or designed to be eaten.

And it makes me think about wheat as well that we vilified wheat in the gut healing spaces it's like, yeah, well, gluten-free is a great thing to do, and if you stop eating gluten and you have gut issues, you'll notice like, wow, I'm feeling better. My mental health is sort of coming back my digestive symptoms and normalizing. But I think we've made wheat the problem, which is fair enough, we've changed wheat a lot.

But is it the wheat or is it the glyphosate? And this is where I'm sort of getting to it, is it the animal products or is it that we're feeding them corn, wheat and soy, which is sprayed with these toxins? And so what is it, Zach, you know, is it that wheat is bad and animal products are bad? Or is it that what they're made of now has completely changed and that's the problem?

Zach: It is the latter for sure. We've been eating diverse diets all over the world for our entire 300,000-year history of Homo sapien sapiens and for 1.2 million years as hominids. And so from Neanderthals to us, we've been eating extremely high-protein diets and diets with an enormous amount of animals for some parts of the year because they went to zebra across the plains. And so we were quick to capture that food energy. Then winter shifted, the herds moved on, we nut collected, and acorns were a major staple for much of North America. And many of the earliest signs of hunter-gathering were the acorn. And so we had tree nuts as a major staple of protein and we would binge on those. And interestingly, the human, the American Gut Project has been looking at this phenomenon in African tribes that are still living in their indigenous environments and hunter-gatherers, hunting and gathering, and that the tribes are showing us what the ideal gut looks like.

40,000 species that I mentioned earlier were from that American Gut Project that was studying the Ha tribes of Western and kind of mid-portions of the African continent there. And so they've shown us how much potential the human gut has when you're in a natural cycling pattern. And interestingly, the gut microbiome in them did not change from day to day or week to week, depending on what they were eating. The diversity was really the result we found from their immediate, direct, intimate contact with the ecosystem around them.

James: Wow.

Zach: So the ecosystem was constantly reinforcing biodiversity in them because they were lying on the ground, sitting by the fire at night, telling stories, breathing fresh air every day, never went into a plastic off-casting car or office or anything. And so their ecosystem touch was so intimate that it was the one that was reinforcing this 40,000 species, not their food. And so the fact that we looked to like a probiotic to give us three species of bacteria, it is kind of ludicrous. It's showing us that our version of gut health is like the most reductionist, dumbed-down version of this.

If we're going to go to a probiotic, what we really want to be doing is getting intimate with our environment, again, to get these 40,000 species. But to answer your question around is food bad for the gut? Any kind of food, the answer seems to be no from the hot zone. A good example is this is during one of the portions of the study they were testing, they were taking stool samples every single day for 15 years from these tribes. And so they were studying through seasonal changes and through food changes.

And a good example was one of the tribes located a massive honeycomb that had been built into this huge dead tree for a solid 10 days. The tribe only ate honey, giant hunks of this. And to the shock of the investigators eating pure carbohydrates without a shred of all the other things we think of starches and proteins. There was just absolutely no change in that, this ecosystem of the gut. And so that was really this compelling thing that if you do see major changes in your gut from intake of a major change in your diet, then it means you're probably not tied into the natural support system for a healthy gut. And it's the fragility of your gut that's making the food have such a large impact on your sense of wellness, your sense of nutrient density, nutrition, etc.

And so that study's been really exciting because it is showing us that it's being at one with nature is the beginning of a healthy gut. And if you are at one with nature, you're pretty much bulletproof to the degree that they were able to show this extraordinary moment, which was terrifying to the study group. And that was coming from six different universities around the world, and they knew they were studying like the last healthy guts on the planet. And this missionary group came through and left boxes and boxes of antibiotics for this tribe and said, if you ever get sick, just take three of these a day and you'll be fine. You know, just like, no, I'm sure very much feeling good about themselves and altruistic in their goals. But the study team was under strict rules from the study structure that they weren't able to intervene with any decisions or pathway that the tribes were picking.

So they couldn't change their behavior in any way, including negative potential insults. So they couldn't stop these guys. And the Hansa sat around that night talking about these boxes of things, and it looked a heck of a lot like candy. And so they started popping these things by the next morning, the tribe's boxes and boxes of antibiotics. And the study team literally was just

devastated, like, this could be the end of human gut health. We may have just destroyed or been witness to the destruction of the last healthy guts on earth. They kept their religious practice of the stool collections all this next month. And it would take them about 60 days to get the data back because they'd have to send the stool samples back to the States and do this processing the DNA analysis.

They got the data back 60 days later, and there had not been a single drop in microbiome diversity in these guts with boxes of, in a box in a single night. And so what the hot surgery training us in is the gut is literally bulletproof because it is not an isolated system in a natural setting of culture, in a modern culture where we have executed our relationship with nature and we have made ourselves in opposition to it in that pursuit of comfort you were talking about. Yeah. Now we suddenly become a very vulnerable closed-loop system where we don't get this reinforcement minute by minute from the microbiome. But if you think of the Hansa, no, there's no wonder they didn't have a drop in their gut microbiome because the gut microbiome actually is the entire ecosystem in which they're living, their gut is continuous with the soil they're sitting on.

And they, we've been able to show that if you start to garden, for example, and you start pulling weeds, just the microbiome under your hands that you're getting reintroduced to is going to actually end up as contributing a significant portion of your bio versus within your gut within hours, but certainly days of contact. So no wonder the antibiotic didn't have an effect because you're treating a tiny little piece of the African bush with this antibiotic in contrast, the Americans cons is isolated from their greater soil system. They don't sit on the ground, they don't touch the soil, they don't touch the plants. They certainly don't touch the animals that they're about to eat. So we're so divorced from the origin of the microbiome and its relationship to our macronutrient system. But at the same time, in contrast to the hots that they're living in the untouched African bush, we are living in an environment that is buried in antibiotics from herbicides and pesticides.

In the United States, 85% of our rainfall, and 85% of the air we breathe is contaminated with glyphosate, which is the most active concerning herbicides on the planet, is the most abundant herbicide on the planet. We've sprayed about 4 billion pounds a year into the soil water and air systems of the earth. So water-soluble toxin. So as soon as it goes and hits the farm soil, it's going to be run off into the streams and then evaporating into the air, consolidating the clouds raining back down.

So the entire hydrologic surface from the surface to the sky is contaminated. And now we've demonstrated in our deepest aquifers in the United States, for example, but also now in South America, all over the world, we've contaminated these deep fossil aquifers with glyphosate. And so it will be hundreds if not thousands of years before, the hydrolytic cycle of humanity starts to free itself up from this antibiotic that we call glyphosate. And so it's a potent antibiotic in soil, and unfortunately, because it's water soluble, it gets into the food itself.

And so the canola you mentioned, the seed oils that we're cooking all our food in those are, those oils are relatively low because it's an oil-based system, but unfortunately the water elements within that food systems are going to have extremely high residues of the glyphosate. And this ends up doing damage inside the meat. And so that the cells inside the meat are all carrying glyphosate. And so, your animals eating GMO corn-soybean are genetically modified plants that are able to handle very high levels of glyphosate spraying, and then you end up with these residues, the meat's going to have high residues.

Your root vegetables are going to have high residues, and ultimately your wheat is going to have high residues because especially in Northern climates where you have a short growing season, you're going to be seeing a lot of life stay used at the end of the growing season for wheat to dry quickly. And so it's not used as a wheat killer. It's used as a drying agent to speed up the harvest of the wheat. And so our very first peer-reviewed science that we published out in my laboratory about 12 years ago or something was demonstrating that there is not gluten sensitivity, there's only glyphosate sensitivity.

We showed the exact mechanism by which glyphosate turns on this gluten damage. And so if you just eat gluten with high levels of it, you might get a 15 or 20% decrease in your protective shield of your gut lining. It's minor. Your immune system deals with it. If you put a tiny bit of glyphosate in there, parts per billion of glyphosate, which is much less than what would be sprayed on a typical wheat field. But even tiny amounts of that glyphosate plus the gluten, you lose 85 to 90% of your shield. And so it was the addition of this glyphosate chemical in 1991 to the wheat industry that led to this 1992, 93, and 94 explosion of gluten sensitivity, celiac and the rest.

And so you can map it acre by acre sprayed with desiccant and, acres of wheat sprayed with desiccant glyphosate, and the occurrence in that population of gluten sensitivity. So it's truly not a gluten sensitivity. It is truly a glyphosate sensitivity. And for that, you're going to benefit from stopping gluten because in the United States, you immediately stop eating less, you're going to start eating less glyphosate. So you're going to attribute your improvement to the gluten just as much as you did the disease. And both are untrue. Gluten's not keeping you from being healthy. It's really the glyphosate that it's carrying. And my patients got to experience this all the time, right?

So I'd have severe gluten sensitivity people. And if you read the top five symptoms of gluten sensitivity, again, it's not the gut. Number 5 is like bloating and all that. 1, 2, 3, and 4 is fatigue, loss of sex drive, loss of creativity, you know, everything we talked about earlier. And so gluten sensitivity is really this phenomenon of glyphosate poisoning that's dropping the microbial density in your gut from this herbicide or antibiotic effect coupled within the direct effect of it, which is leaky gut.

We've demonstrated in our lab, we're the first lab to really detail out and great, you know, detail

how glyphosate damages human cells directly through suppressing all kinds of things, including mitochondrial metabolism, and therefore the obesity epidemic, including the immune systems response to self-molecules, therefore autoimmune diseases the damage to your reproductive track, that's the collapse of testosterone in males these days and this collapse of progesterone, estrogen and females, and therefore the infertility.

And then you do that in the womb and you end up de-gendering a fetus that's growing in that environment. So everything that we've seen over the last 50 years in this chronic disease epidemic literally can be mapped back to a such single molecule, glyphosate.

James: Geeze. So I think the whole gluten sensitivity thing needs a rebrand, right? Like as in glyphosate sensitivity and calling it what it is because that's a huge disservice we're doing to people by not knowing that that's the root cause of it. You know, there's a lady I started following on Instagram that sort of started this whole movement of being like, I thought I was sensitive to gluten, but it was the glyphosate. Now she's all into like organic baking using biodynamic heirloom organic wheat, and like, she's thriving. And it was like, it is such another great data point for me to go, yeah, it's not the wheat. You know, we love to vilify things and then build industries around it like gluten-free, all this sort of stuff, which is great, but it's not solving the problem.

Zach: I have a story about that. So we got this data, we published this paper, and peer-reviewed science proved that we could actually reverse gluten sensitivity by the supplements we were making, which are these fossils, and soil compounds. So we were so excited. We were just like, oh my gosh, we're going to reverse this whole syndrome. This was like 2012. So by this time, like one in four Americans was identifying as gluten-sensitive, and it was a full-out epidemic going on.

So I showed, so we booked, I had no money at all. I had started my lab on $10,000. And so we were totally broke, but we had these, these bottles of supplements that we've made and, and taken us quite a while to get this whole system up. And so I load up my little Mazda to drive to Ohio, to the national gluten sensitivity and free product, to debut, I think it was like $500 to get a booth at this place. And so had my Mazda like loaded with all of these banners that I'd had, like my wife, like hand draw things. And we had no money, so it was just like so funky. And we get there, but we've got all these beautiful science images of the gut lining before and after gluten and life state and the whole thing. And I set up, and I'm so excited, and I'm two hours into like telling passionately every single person walking by the booth, we can reverse your gluten density. Let me show you how this works, blah, blah, blah.

Two hours into a three-day event, this woman comes up, I'm the head of this thing. What do you have here? I just heard grumbles that you're telling people you can reverse gluten sensitivity. I was like, you can let me show you. And I'm just like, just bright-eyed and bushy-tailed. And she's like, you've going to take down your booth and leave. And I was like, wait, what? Sure enough,

within four hours of the thing starting, we were kicked out of the entire thing because every other booth was selling a gluten-free product of something or other.

That was my understanding all of a sudden that the same mindset that had gotten me pretty much kicked out of academia for creating chemotherapy from nutrition. Yeah. It was like, wait a second. The gluten, gluten-free community is protecting the marketplace of gluten-free foods just as aggressively as the pharmaceutical industry is protecting cancer. Like, I couldn't, I just couldn't believe it. And so at that point, I went through about a year of kind of giving up on humanity, and then we kind got, got back in gear and launched the products in 2014. And that's gone well.

But it is just ironic that we're afraid of solutions that take away our identity. And it's scary how in the West we have so taken on the identity of our diseases. And so that's a bit of a major warning to us is, you know, what if you believe you're diabetic and somebody comes along and says, you actually don't need to be diabetic, I can fix that for you, then who are you tomorrow? Because your whole family knew you was diabetic, all of your food decisions were being made around diabetic. The excuse as to why you were overweight and not feeling well, and you had this beautiful excuse to everything you were feeling. It was why I'm diabetic, therefore X, Y, Z.

And so we love an excuse as to why we feel bad because it kind of leaves us there you know, it eliminates the sense of responsibility to be healthy and something else has taken over as our identity. And we have a good excuse as to why we're not. And so it's, it is a bit of a warning because I hear this every day in Yeah. You know, the wealthiest groups in the world, you go to New York and everybody's bragging about how many antidepressants they're on and how depressive they are, and how gluten-sensitive they are. And like their list of diseases is literally what they're chatting about.

Over lunch. In a big New York fancy restaurant, you start to realize, wow, this social norm of normalizing but identifying with our diseases is somehow so reassuring to us that that, that it becomes socially acceptable and almost a social brand itself of, well, I've got two therapists and my therapist on the uptown upside of New York there, and I go up there and I have, she's so hard to book, you know, you can never get in with that therapist. It's like the disease is your identity.

The fact that you're on all these fancy treatments is your status symbol. And so we've just done this huge reversal in Western culture where we actually are desiring a diagnosis that frees us up to then pursue those easy solutions you were talking about, get the next pill. That pill doesn't work. You're going to be on these three pills. Well, those three pills are giving you side effects. Here are two more pills to treat the side effects of those three pills. That's the game we're in.

James: And it's not an infinite game. That game has an end and it's, it's not a pretty end. And I've fortunately saved people from that game. My father included. I mean, he was on six meds at one point in time, and he very much identified with his condition because he was told he had this

condition from the high priest of modern medicine, this is what you have. And then it became hard for him to get well, because every time people would see him in his home environment, they'll be like, oh, how are you? You know, are you still sick? And it starts to whole reinforce it. And then you have insurance companies that like, if you're sick, you get paid out, so you have to be sick. And then you're like, all of a sudden you're trapped. Right? And he had to move countries.

So he moved to Fiji and he was still on all these medications. He was very like severe chronic fatigue syndrome, pain, anxiety, and depression on six different medications, basically mostly bedridden. And I'd started studying about nutrition and learning about ortho molecular medicine, you know, through, you know, Linus Pauling's work and newer incarnations of experts that had focused on high dose nutrient therapy and using the currency of the body and all this, which was something interesting. And then I'd come to him saying, dad, guess what? I've got this answer. And he is like, you're not a doctor. I'm like, oh, no. So that, that became the reason I made *Food Matters*.

Well, if I interview David Wolfe or all these great experts and take him some knowledge from these experts, he'll believe them. And thankfully, that was something that cracked him open, right? And then he started to believe maybe I can heal myself, which was the biggest shift. And I think we're infinite. We have infinite healing potential, but if we're attached to our identity of disease, it immediately limits it. There's no opening there for that.

Zach: That was my conclusion after 17 years in academia, and then another 10 years of, of practice outside in this kind of holistic alternative environment,realized that was the beginning of our healing journey. And so I've closed my clinic in, in favor of starting this program called *Journey of Intrinsic Health*. The understanding that there's nothing outside your body. There's no, you know, IV drip from your functional medicine doctor, there's no pharmaceutical pill. There's literally nothing at that exists outside your body that's going to heal you with the exception of that soil that might be outside your body in that hole of the donut. And so, yeah, health is intrinsic to you, but you're going to have to find that identity in which health was originated.

And so to get there, our whole first week of the eight-week program of Journey of Intrinsic Health is dedicated to shedding the many, many identities that we take on so that you can simply start to feel what it feels like to be you. There are a lot of beautiful results of that that happened in that first week. But one of the really interesting, and I think maybe most important aspects of this, well, I'll give it two, but one is, one is the intuition comes back. And that's what your dad started to get, is like, he started to get that intuition of like, you know what, actually I think I can make a difference here. And so that little bit of empowerment starts to create that slippery slope of, I think I can create my destiny here. Like I can do this and I feel better the next day.

I wonder if I did that. So you get this intuition kicking in that then leads to curiosity. And so those are the two traits that when I see those coming back on, now I'm confident that that person can tap into that infinite healing potential. But if you start with, well, here's an anti-inflammatory and it's super healthy, it's curcumin and it's this and that, it's adaptogen, it's mushroom, but you haven't addressed their self-identity issues, you can't move the needle because they're, they are reinforcing at this deep subconscious level that they are a disease and they diseases them. And so that's a very critical piece of the puzzle that you're uncovering for your dad. There is, it needs to begin small but then empowered, and then let them snowball that thing forward into a new identity that is disease free. And that's, that's what, that's a beautiful thing too, and that's a legacy few children will ever succeed in 'cause–

James: Yeah, it was.

Zach: Parent's change our behavior at zero. And that goes the other way, typically. So it's a challenge.

James: Yeah. I was very fortunate to get through to him. It took a number of years of work and once I did, I, yeah, I created a raving fan, which is great. I mean, but also my dad completely shifted like energetically too as a human. And as he started creating new inputs for his body, from a food perspective, you know, we went from handshakes to hugs, you know, it was a huge transition, you know, and, I'm very grateful. Now it's like those awkward long hugs, you know, and it's like, it's beautiful, but that's why I say eating healthy foods has side effects too.

Zach: I've toured Australia quite a few times doing speaking tours down there. And Australians do not warm to long hugs easily. So you've done something fantastic. Yeah. It doesn't come easy. Long hug in Australia.

James: Yeah, it was a breakthrough. it's typically a Southern Californian thing, right?

Zach: Exactly.

James: The long hugs. Yeah.

Zach: Yeah. The only place that's more awkward to the long hug is maybe London.

James: There we go. Yeah, that's like the hard pat on the back of that one. Yeah. So I was fortunate enough to spend the best part of five years living mostly with indigenous people in a very remote pacific island nation called Vanuatu. And even traveling to remote outer islands there as well.

At one time, you know, during Covid I went to an island where I arrived unannounced on a boat, you know, after two flights and a long boat ride to an island that hadn't had a white visitor for over two and a half, three years. And there was many children that had never seen an outsider. And I arrived at sunset with no plans and just spoke to them and got a, you know, slept on someone's, you know, mud floor in a kitchen. And the way that they live with the ecosystem, they're just always dirty in a way. They're always barefoot. They're making cava, which is a natural brew. They're out in the forest hunting like nuts and seeds and small birds and everything.

You walk through the forest, you know, and it's like avatar this island. And you just walk through and then you'll see someone you know on the distance and they walk past you and there's no words exchanged. They just take something off their back, give you some of their things, and you give them some of your things. And then you keep walking and it's like a little bit of sugar cane or it's a little bit of a wild nut or a seed or something. It's an exchange. And, but ultimately they're just with nature, right? Every part of their body is covered in nature and they're just, your hands are always dirty. There's no getting them clean. Your feet are always dirty.

And then in the West, you go into a bathroom and you hear this like spray on the wall, you're like, whoa, what is that? You know? And then there's like the hand sanitizer, which is gone ballistic in terms of popularity since covid, right? And we're wearing shoes, we're clean every second of the day, right? And we lather ourselves in these like sulfate like laden, you know, SLS like, you know, that strip our like acid mantle off our skin. Like, and then you're, you are telling me that it's like, it's not, it's, it's the food, but it's the glyphosate. It's not really the food, it's the environment we're in. Yeah.

So what is it that people can do to start to sort of recreate that? Like obviously they're not going to be like an indigenous ne-Vanuatu person in a remote island and we're changing. How can somebody in the modern world start to interact more with the natural world to sort of rebuild their strength and develop more intestinal fortitude in a way?

Zach: Yeah, I mean, these are very simple technologies. Nakedness is one of them. And it's literally not just the sterile separation that that creates, but literally clothes on our back is the beginning of not just our separation from the dirt you're talking about. It's separation from the sun. And so when you start to drop both sun exposure and the microbiome, you've lost life force medially. And so our clothing is such an interesting thing, and we've seen this with the haa for sure. Like when, when they start to adopt western clothing, their microbiome can be seen to decrease as well. And, and I think that's twofold. One, you're blocking your direct contact, but two, you're also starting to poison the bloodstream with these microplastics.

And so the amount of plastic that's in a typical garment, will end up in the bloodstream quite readily. They pass through the skin surface quite readily. We inhale them, run your hand over your shirt and then you eat something, you're eating the microplastic. So we are consuming a very

high amount of these compounds that disrupt the endocrine system, which then in turn regulates again, the microbiome and its diversity. We've been able to show that high-stress states of the psychosocial stress. You're stressed out at your job, your financial stress, kid's sick. This has an immediate negative effect on your microbiome. And so the biodiversity within your gut drops when you are stressed, which is interesting because we actually do this at the macro level.

If you've got a friend that's just super depressive and a little bit psychotic because of their depression, like you just don't wanna hang out with then you're just like, yeah, maybe I'll call or maybe I'll text. Because even the call's too depressing. I'm certain I to go over and hang out all night on a Friday night because they're in the dumps. The microbiome was doing this to us. If you were the stressed out thing, they're always like, they're like, well, Zach was kind of good for a while, but you know, honestly I just, I'm tired of dealing with the amount of cortisol that's being secreted from his gut lining. Yeah, I don't think I'm going to go there this week. I don't even party else elsewhere. You know, it's the microbiome that retracts away from these chronic stress states. And it does.

So immediately within minutes of that big cortisol surge of getting home and stressed out and you yell at your kids and the thing that's having immediate effect where nature is starting to pull back from your state of stress and it snowballs on you. So nature pulls back and now you have less coping mechanisms, you got less anti-inflammatories. Your gut lining is more vulnerable to leaky gut. And so it can snowball on you very quickly. And so all this chronic fatigue, chronic pain syndromes that we now see, so amp, you know, ramped up in our western societies and industrialized nations. That's the down, down downstream of this snowballing effect of you destroying nature and nature pulling back from that stress. And, and you starting to get this isolation. And at the cellular level, once you reach isolation, you become a cancer cell. And so any cell in the body that, that clips enough of those tight junctions and becomes isolated will, will become a cancer cell.

And so this whole question is maybe glyphosate is a carcinogen. No, glyphosate is absolutely a carcinogen because it creates loneliness at the cell level. Unfortunately, that's not the traditional way in which our regulatory groups consider carcinogen. That's why there's been so much bickering and why life state continues to get approved is 'cause they're relying on an old definition of carcinogen that's 50 years old that says that it has to directly damage DNA to be a carcinogen.

James: Geez.

Zach: That's not our understanding for 50 years of science. But that's where the regulators have been empowered to know this. And most regulators are not scientists that are, they're taught how to keep a bureaucratic, you know, track of what's going on, but that they're not keeping up with, you know, they're not running laboratories and keeping up with it. They probably learned

their biology 10, 15, 30 years ago. And so there's this paucity of, of new information there at the regulatory level that keeps us rubber stamping really bad decisions for the food system. So it's not like there's a ball sitting there doing this. This is just bad information.

James: Yeah.

Zach: Poor education, not the right information in the right place. And so I really believe that there, there's just an opportunity for us to bring the information to it to the right place. An example of this was the US Senate sat down with six senators, two of which are really critical to our agricultural system. One sits, as the chair of the AG committee that, you know, basically is responsible for among many other things, passing and, and writing the farm bill that allocates over the last 10 years, almost a trillion dollars. And then the other one was the director of the appropriations committee for that trillion dollars.

And so here you've got the person that's writing the legislation and the person, or she's not actually writing it, but she's the one that's in charge of getting that team together. And then the one that's appropriating the funds from that thing. Well, one of the two had not heard of glyphosate before and neither of them understood that glyphosate had any direct effects on human cells. And so here's the two women in the United States that could instantly change the situation.

And I had been under the impression that, you know, Bayer and Monsanto and all these lobbyists have been in there, you know, poisoning their minds. Nobody had come in. There's just no information available to the people that could change those things. That gets me pretty excited that wow, governments can change in an instant if we give them the right data sets. Governments thrive under a productive society. And you wouldn't know that in our current western economy 'cause we're sort of reliant on disease. And so this gets at the macro version of the problem we were talking about earlier.

You mentioned that situation where, you know, your dad was getting so much positive feedback for having an identity of disease. Right? And so there was the empathy and then you mentioned an important one. There was actually insurance benefits that were being wanted to, he gets the monthly check and the thing's there. So he needed to stay diseased to have the money. Our entire country of the United States is now in that situation.

James: Yeah.

Zach: Our entire GDP of $17 trillion relies on $5 trillion from the healthcare industry and another trillion dollars from direct consumer spending into the health and and wellness space. And so 6 trillion of a $17 trillion economy relies on disease. And so our country now has an identity and an economy built around that identity that it is disincentivizing us from actually getting healthy.

And so this is subconscious again, for a country as it is for the individual of like, it feels like you're doing the right thing by going to the doctor and getting your pills. And you know, you feel so good when you come home from the pharmacy and you did manage after three hours of line to finally get that little orange bottle from the pharmacy. And you're like, well, this is my health in a bottle. This whole country is taking the health in the bottle approach now. And for that we are collapsing our productivity just as your dad saw in his life.

James: Yeah.

Zach: And what must do is, so as we strip it, you know, strip away our real identity and start to layer on these disease identities, productivity's going to fall, creativity's going to fall. And increasing is the mental health instability and the oppressiveness and the failure of creativity in there. And that's, that's the United States as a whole now.

James: Yeah. And there's ways we can remedy that. And many people are doing it on an individual level, and I think that a groundswell of people doing it will, you know, will and can create change. I think the, a system as a whole, you know, if you think about it, we are living within fractals of an entire universe, and then from the smallest cell even to a quasi-particle, or a subatomic particle, to a cell. There's just these whole systems within a system. You look at the earth as a system too, you know, and as it diseases, it will self-heal. It's my belief at least. And it will learn and it'll grow.

One of the things I wanted to touch on was that, you know, I think it's funny that, like I've always thought about like big pharma, you know, big ag, big this, now there's, I've got another problem. There's big gluten-free now, so that's a new one for me after you experienced it. That's pretty mind blowing. I didn't know that existed.

Zach: Yeah, and there's big supplement. And so yeah, the probiotic industry is $47 billion and we've known since 2018, I mean, we knew before this, but yeah, our top peer-reviewed, you know, science you know, periodicals in the country started publishing in 2018 that probiotics were, were suppressing the microbiome diversity just as potently as antibiotics were.

James: Geez.

Zach: And so, that was September of 2018. Three major studies got published at the same time and it was so damning to probiotics, we should have immediately stopped the probiotic industry.

Yeah. And yet it's doubled in size since 2018. So $47 billion just for probiotics. You start to realize, again, this disease identity drives so much economy that losing the concept of the disease is the last thing that, you know, the fed or, or somebody concerned about the US dollar wants. And so

it's, it's a really insidious thing that even these altruistic, you know, parts of our economies, functional medicine or the functional medicine industry is just like the allopathic medicine. It relies on your disease.

James: Yeah.

Zach: And this is one of the reasons I had finally had to close my clinic is I needed to find a way to engage the public in which they would want to engage with me when they were healthy. And if they did have disease, they, they were in it to find that health to make the clinic obsolete. But if I was still running a clinic and I was relying on an economy driven by disease, then there's this subconscious, you know, feedback loop. Well, why don't you come back in three months and we'll check again? Well, if, if I really believed that they could heal themselves and they were a healing machine, why book the three month return? You know?

James: Yeah.

Zach: And so there's just this insidious trap that we get into even as well-meaning doctors and, and the rest, we can be part of that codependence in this subtle, so conscious way. The more altruistic it looks, the more likely it's going to be hard to identify.

James: Yeah. It's very fascinating and, um, it's for sure an issue that needs rectifying. So I have maybe two questions in one here.

If gluten's not the issue, then what are the top five? Well, on its own, right? So on its own, but what are the top sort of five food groups that have the most glyphosate in them? Then that's probably the question to ask. Or five or 10. Like what are the most common glyphosate contributing foods to the modern diet that people could immediately go, okay, I want to like eliminate those?

And then the second part of the question is, what are the most natural gut supportive foods that you find are most accretive to health, or some of the foods that you eat on a daily basis that you as Zach Bush in your evolving wisdom now turn to as your staples?

Zach: Yeah. So the ones that are most toxic differ a little bit as to where you're at and what season it is. And so the environmental working group does, has a very active, wonderful resource for everybody. It's called the Clean 15 and the Dirty Dozen. And so the Dirty Dozen are those that are so toxic that you, you either are going to get that from, you know, your own backyard where you know where it's being grown or you get it, you know, from the best organic supply or you just don't eat it.

Yeah. Top of that list is pretty unchangeable. Strawberries are always number one strawberries anywhere in the world. Even if it says organic on it, I don't believe it. Like I, the amount of

antifungals and everything else, organic or otherwise that are used to grow a strawberry in that environment where you're going to pick it before it's ready and then, you know, ship it somewhere distant to be consumed, there's a whole setup for disaster there. So strawberries probably just stop eating. That's the easiest rule.

Number two behind that is, is typically apples. And so apples have become extremely chemical intensive. And then behind that would be some of the citrus and things like that. But I would say to tap in and start to kind of memorize at least those top five, the Dirty Dozen and have a sense of what that looks like for your–

James: I think also like celery and blueberries and spinach are often quite high up the list–

Zach: Kale

James: –On the Dirty Dozen. Kale. Yeah.

Zach: Brussels sprouts, like some of the best things. And so if you're going to, it doesn't mean you can't eat them. You know, some of these important things. Brussels sprouts being one of my favorite ones out there. but I did a lot of damage with Brussels sprouts before I found out in my clinic that they were carrying so much glyphosate.

James: So has to be organic.

Zach: Gotta be organic.

James: Has to be organic. So all of these foods you just mentioned has to be organic at the least, and ideally know where it's from and get it closer to source so it doesn't travel as far.

Zach: But, you know, one of the, the issues that, I'm so glad you asked the question, what should we eat then? Because we spend too much time saying what we shouldn't do. And you know, I think that this is where the vegan industry kind of collapsed health and inadvertently, is that telling people just not to eat meat is not, is not helpful. It then sets you up for a situation where, well, as long as I'm eating processed soy, I, I'm a good vegan and I've been told that vegan extends health, prevents cancer, all kinds of things. And all of that is true. John Robbins and all of his contemporaries coming out of the seventies proved that we could eliminate chronic seed, the plant-based diet.

The thing that started my clinic was a plant-based diet clinic, and it was Gabe Mirkin out of the seventies and then Esselstyn out of Cleveland Clinic and then, you know, Cornell with its university-based program there. And so 40 years of good clinical science out of some of the best

university in the world proved the plant-based diets were working. And I launched that in, in 2010, and by 2012, I was convinced that the science was wrong.

What I found out, you know, a year later after starting my own biotech laboratory in that clinic was, oh my gosh, it's the glyphosate that's been added to those foods that's now making this science not work. So food still worked, but the, the way in which we're growing it now had radically undermined that reality. And so the vegan of the 1980s is not the vegan of 2015 or 2025 here, so.

In the same way, the meat industry has become more and more increasingly toxic and has less and less nutrient density available in those meats as we went into higher and higher intensity feeding systems for processed, you know, genetically modified feed inputs to poultry, to the, to the pigs and to the cattle. And so that this decrement health and the animals is leading to the fact that, you know, a paleo diet on, you know, Tyson chicken is going to freaking kill you.

James: Yeah.

Zach: You've got so many, you know, drug resistant bacteria for one thing that are all over that chicken and everything else, like you've got, you're eating a net nuclear bomb to the microbiome, whether it be that highly processed meat that's raised in these stressed out environments. One third of the flock of the American chickens are dead by the time they're, they're six weeks old.

James: Geez.

Zach: From invasive e. coli salmonella and like one third of our flock. And that flock, my numbers should be pretty close. I think there's seven or numbers actually larger than that, but there's a hundred million cows in North America at any given moment growing for our food system. And it's seven times more per pound of chickens versus cows. So you can imagine how many hundreds of chickens to make up, you know, the, the meat in a single cow and then multiply that by seven. So the amount of animals being grown in this country is just staggering. And then to find out that one third are, are dead before they're six weeks old from the noxious environments, they're born into failure of their immune systems is fundamentally across the entire flock.

The amount of stress in those organisms is, is immeasurable at that point. And that's your chicken salad the next day. So two thirds of the flock that survives that first six weeks is on such high levels of antibiotic to try to help them survive that they have absolutely no gut microbiome. And so that meat is so deprived of nutrients. The chickens are just pale ghosts. They have no coloration in their feet, they have no coloration in their beaks. Their cartilage never in their body actually forms into bones. So they're floppy, they have no muscle tone. They live out their lives in these closed cages where they can't even turn around and they're being shat on by the chicken

above 'em. I mean, it is just a horror show. And then you think, wow, what, what's the ramifications of eating that genetically? What's the epigenetic damage to that animal? And then what's–

James: What's the energetic, the energetic damage?

Zach: Right? And so you just have these levels, you got toxins, gene epigenetic stress, and then energetic stress.

James: Yeah.

Zach: You can't believe that humans are even surviving for a moment in this toxic food environment we've created.

James: Yeah.

Zach: And I guess the answer is we're really not. This is, this is the extinction process we're in.

James: So when you eat on a day-to-day basis, you're eating organic, you are less concerned with things like gluten and that now. **And like what are things that you do on a, like, a frequent basis in terms of your food rituals to support health?**

Zach: So glad because I didn't come back to that. So Clean 15 was the other side of the EWG.

James: Yeah.

Zach: The top five in there. The nice thing about the Clean 15 is it doesn't matter if it's organic or conventional or however it's grown, it's clean. So there's just some crops that simply don't need chemical inputs.

James: Yeah.

Zach: And if chemical inputs are used, they don't end up in the food. And so a great example of this is the avocado, avocados do not carry, or, you know, pesticides. So that typically number one on the cleanest foods on the planet are avocados, which is such a relief 'cause I eat those as a main food group.

James: Yeah.

Zach: So avocados and then my second biggest intake, especially when I'm home, I cook every single day with it. Red cabbage. Red cabbage is freaking miraculous. It's super low in herbicides, pesticides for reasons people don't even understand what the red cabbage is doing to transmute

toxins. But it transmute toxins into my body. I know after, you know, seven weeks of travel internationally, I can get home and eat my red cabbage meal that I could prep, prep at home for three or four days and I just, I, it is the best detox on the planet.

So red cabbage and then behind that, sweet potatoes. So those three are actually really clean, both conventional and organically grown. And those are the three that you can just eat worldwide all of the time. Red cabbage, avocado, and a sweet potato. And you're pretty golden. I do like adding Brussels sprouts to that pattern. So, because if you get a sweet potato and a Brussels sprout that's grown organically. I mean, you've really got every single, not only nutrient, macro micronutrient, 'cause the skin of the sweet potato has got every mineral on the periodic chart.

You also have the medicines within the food within those two. So the alkaloids are very high within the sweet potato and the Brussels sprout there. And the sweet potato is carrying the starch. And the starch is a big secret to micro gut microbiome. We're afraid of starchy foods. Oh, everything white's bad for you, all that stuff. No starch is phenomenal. I think it's McDougall that wrote the starch book, right? There's a great book on the secret of starch is as your kind of health rebuilding thing for chronic pain, chronic fatigue, all this stuff.

So starch is a magic thing when it's grown well. And, and sweet potatoes are an easy way to get that. So sweet potatoes and Brussels sprouts, it makes a whole meal in and of itself. You've got more protein per calorie in a Brussels sprout than you do in a steak. It's just an insane amount of protein resources, mineral resources, nutrient resources.

So those are some of the magic ones out there. But I, I can't overemphasize red cabbage because you remember all the other ones. You're going to forget the red cabbage. Get that red cabbage into your diet. And then the other thing that I need to recommend is just get more herbs on your plate. We so undervalue herbs, we've forgotten what it tastes like to have fresh herbs in your diet. But if you've got coriander, or often called cilantro in your diet on a regular basis, combine that with parsley. So my favorite dish right behind my red cabbage one is what I call a summer pesto. Summer pesto has a little bit of, of basil in it, but it's actually mostly like a flat Italian parsley and cilantro, a tiny bit of cilantro in there to give it a backbone.

And then pine nuts are great, but you can also just use an avocado in there. And a magic ingredient in there is actually an organic broccoli. So organic broccoli floret within your pesto gives a whole nother dimension to the pesto. It'll be the best pesto your friends have ever eaten. So get these, this combination of herbs and fats into a pasta or whatever you're doing. I don't eat gluten-free. I, I eat gluten quite regularly in my life, and I'm always going after those organic gluten sources, especially the ones that are fermented. And so a sourdough has an incredibly wonderful, you know, friendly relationship to the gut microbiome. And my patients that would leave the United States with severe gluten sensitivity would experience this. They'd go eat croissants on the streets of Paris and with absolutely no ramifications. And they'd come back so

excited. I think my gluten sensitivity's gone. And then they would come and eat a single bun on something in the United States and take 'em a week to recover from the brain fog with non-glyphosate.

So eat, clean, get the it, because again, that croissant is not just the wheat, it's that ancient technology of butter with the wheat. And so that fat with the carbohydrate completely changes its dynamics as it goes through the gut. And so all the things we were taught were bad are, are are getting good again, right? So butter was causing heart disease and everything else. Now we find out you just add some butter to the damn wheat, you're going to end up with a croissant and not, not death. Um, so there's just this exciting revolution in Renaissance going, I think of whole foods and, and real artisan foods. The amount of sourdough bread that was baked during the pandemic is probably more than an entire history of mankind. I mean, everybody suddenly was like, I'm bored. I'm at home. I'm going to try this sourdough thing. I mean, it just went berserk worldwide and it made me so happy. It was just the most unexpected cure to our, our dedication to the gluten sensitivity was just lock people up and tell 'em they can't go anywhere for a while and they're going to get so poor with Netflix in five days. They're going to have to start making sourdough and they're going to find out they're not gluten sensitive.

James: There's a saying from one of my main spiritual teachers, and I remember it by using my fingers. It is, everything is absolutely always unfolding perfectly. And it helps us to see that the biggest challenges are the most beautiful perfections that can open up, you know, incredible opportunities. And yeah, I think that's a great way to finish this chat, Zach. You're such a great philosopher and harboring of information that is really important for the world. And I'm so grateful to support your story and your message and I think it's such a Buddhist path, what you're teaching here. It's a middle path. It's not extreme. It's like, hey, these toxins are not natural and not good, and let's not vilify food groups that are not inherently bad. Let's take a middle path and let's connect more with nature. It's beautiful and all the power to you. And thanks so much for your time today. I really appreciate it. Thank you.

Zach: Good to be with you.

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