

# The Dark Side of Gluten: New Perspectives on Celiac Disease and Wheat Intolerance

Presenter: Sayer Ji



*The following transcript and information is not intended to take the place of medical advice and/or treatment from your personal physicians.*

**Sean:** Sayer Ji, welcome to the Sessions!

**Sayer Ji:** Thank you! It's a great honor to be here.

**Sean:** I'm really happy to have you here because you have the most incredible website over at greenmedinfo.com. I love when you write—you're a fantastic writer—but I also like the fact that you—you cite everything with research. And it takes a certain type of person to actually sit down and read scientific research. Where does that passion come from with you?

**Sayer Ji:** Well, I have to credit to osmosis through my father. Because, really, I didn't really have a whole lot of scientific training. I went to college for philosophy. I did specialize in the philosophy of science, phenomenology, but it must've been epigenetic because my dad's like this geeky scientist and it just came naturally.

When I was 12 we did our first paper on Tylenol associated liver damage, because that was his specialty, so...you know, he was just always interested in me learning the basics. But I didn't formally go to school for science.

**Sean:** So you got it from your father, huh?

**Sayer Ji:** I guess so, yeah. My mom's a reference librarian, and that's a large part of what I do, you know; just gather all the research together, like a little squirrel, and index it and make it available to people. And that's something that's a real passion for me.

**Sean:** So you know how to find the research.

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**Sayer Ji:** Yeah, and that’s actually my nickname, when I was really young, was “Google Bug,” and that before Google existed because I’m like 41 now. So I don’t know what that was about.

**Sean:** That’s a trip!

**Sayer Ji:** Yeah. I guess so.

**Sean:** Yeah, that’s really weird. We’re talking about gluten today, and out there in the world, people are becoming more aware of gluten and the impact of gluten. But there’s also a lot of people out there who say there’s no research out there saying that there’s any problem with gluten. Is there really research out there?

**Sayer Ji:** Yeah, that’s what is so amazing to me, Sean, is when I went to MedLine, which is the national library of medicines, like massive database—23 million citations—you plug in a word like “gluten,” and you get 10 thousand studies, and when you start looking at the associated diseases, it just starts to expand exponentially. So I was able to index for GreenMedInfo—which anyone can see the research; it’s open-access—300 diseases that are linked to gluten consumption.

So most people think celiac disease or wheat allergy, some type of allergic reaction, but it’s anything from schizophrenia to IBS to cardiovascular disease. Yeah, it’s definitely established now in the literature, but, certainly in the mainstream media, there are a lot of industries that would like for folks not to know that this is the case. That’s why there’s, I think, a lot of resistance to knowing about that.

**Sean:** What does the research say about the impact of gluten on the gut?

**Sayer Ji:** On the gut? Primarily, that’s actually the first step in my own process of learning about gluten because, if you look at just the word origin, gluten literally means “glue,” and you think of applications like industrial adhesives and bookbinding glue, paper maché...you add water, you let it dry, and it’s just this solid, concrete-like mass.

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So, a lot of people are eating this pasty stuff. They're constipated, their gut's inflamed, they're bloated. They get anything from diarrhea all the way to being bound up. And so the primary adverse effect that we identify with eating wheat is really gastrointestinal. So, it really just messes the gut up in a huge number of ways. We can go down to more molecular descriptions about that process, but it's definitely a gut-destroying substance, in my opinion.

**Sean:** Has it always been that way? Because people have been consuming bread and wheat for a long time, but just recently these problems have been popping up. Has the gluten changed?

**Sayer Ji:** Yeah, there is definitely the argument, like Dr. William Davis makes in his book, *The Wheat Belly*, that hybridization techniques enabled a much higher gluten content. And the thing about gluten is it's a storage protein but it serves many functions, one of which is plant defense, so, intrinsic to the protein component are things like lectins, which inhibit and cause inflammation, as far as digestion.

So there's definitely a lot of changes that occur, and most people have a hard time understanding that in terms of biological time, 10 thousand years, which is when we all started to actually have the agrarian model, and you're starting to take these grasses and save their seeds up and then desiccate them for future use. And then you have technologies like cooking and pottery that's required to then access the nutrients.

That's like nothing in biological time—it's a microsecond—so our bodies haven't had time to adapt to a grain-based diet. And that's why the Paleo-ancestral movement is so powerful; it's acknowledging through an evolutionary lens that really wheat and grains in general are a novel new type of food that comes with a pretty profound price on our health, especially chronic diseases.

**Sean:** I want to make sure that everybody understands the difference between celiac and gluten sensitivity. Define those for us.

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**Sayer Ji:** So there's a lot of debate over that, because there's a resistance to looking at wheat as intrinsically toxic; that we have to have some genetic defect to be susceptible, and that's the model that celiac represents. It's like the tip of an iceberg. A very small percentage are considered to have this genetic susceptibility, which then causes an adaptive immune response where the body is actually identifying a by-product of the protein in wheat as an enemy once it's started to be broken down by the intestinal cells.

So it's this really complex process, but ultimately what happens is the intestinal wall flattens, it can't absorb nutrients. There's a lot of associated issues that go with that. And so, versus the non-celiac gluten sensitivity, the concept is you don't have to have an intestinal biopsy and have specific blood markers or genetic types to be able to have an adverse effect. It's a broader concept that extends out of intestine manifestations. Again, anything from neuropathy to cardiovascular disease to type 2 diabetes.

We're seeing now that there's a submerged part of the iceberg, which is massive. Because even in celiac disease, the genetic locus of disease susceptibility on chromosome six occurs in between 10 to 40 percent of the world's population. So why does a very small percentage get classical celiac? It's multi-factorial: breastfeeding duration, chemical exposures, viral infections, other issues with things like cow's milk all contribute to increasing risk in certain individuals.

But it's my understanding that instead of looking at gluten intolerance or sensitivity as a rare disorder, we should actually look at the thing itself, wheat. It's toxic, and just instead—it's almost as if we're having a healthy response to an unhealthy food. The symptoms associated with gut reactions to infectious agents—diarrhea, for example. You're expelling the offending agent. Well that's what happens with intolerance to certain food antigens like wheat.

So, I think we need to start understanding that, when you're having these symptoms, instead of blaming the victim it's actually the thing itself: wheat. It's not really a part of our evolutionary history. We're not biologically compatible with it as a food. We can get around it in ways. You can do sourdough processing to break down a lot of the antigens. I mean the interesting thing, Sean, is

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there's a lot of new research shows that we have about 95 different bacteria in our gut that are capable of degrading the very hard to break down proteins in wheat.

These are the same protein bonds, called disulfide bonds, in vulcanizing rubber and human hair. They are exceedingly difficult to break down. So we elect, from this massive background of microbiota, certain strains, including clostridium, which are able to break down the gluten for us. But, of course, clostridium botulinum is extremely deadly. So there's something that you pay as a result, because you may be more prone to infection.

That bloating phenomenon, that's really us trying to break down an intolerable type of food protein. So yeah, the gluten sensitivity, I'd rather look at it as gluten toxicity. And then you can see the research on GreenMed to confirm that this is real, not just some kind of imagined concept about wheats harmful role in the human diet.

**Sean:** So would you say it's toxic to everybody? Like, everybody should not consume gluten or wheat?

**Sayer Ji:** Yes, I would say that is true. I would make allowance for cultures that had developed culturing technology such as sourdough. For their genotype, it may be that it's an appropriate type of food. And even in celiac disease, there's an argument that this genetic susceptibility to adverse effects may also confer as a survival advantage against certain infectious agents. This has been found with cystic fibrosis as well, and other diseases like sickle cell anemia, they protect from malaria.

So even if you're looking at a certain type of genetic aberration, it may actually confer survival advantage in a different context. So, I like to de-pathologize the symptoms. And if someone with celiac disease has an intestinal wall that's completely flattened, no longer can absorb the 23,000 plus proteins in the wheat proteome, those antigens can't get in and cause systemic issues such as a seizure, or contribute to failure of the kidney, which could take their life sooner than chronic, low-dose exposure that causes this degenerative celiac kind of body type.

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I do like to look at—instead of looking again at these wheat sensitivities as unhealthy responses to an intrinsically healthy food, I like to turn it around and the wheat is intrinsically unhealthy. That's where I go with my basic assumption.

**Sean:** The wheat is the problem.

**Sayer Ji:** Exactly.

**Sean:** Talk more, just in case this is the only presentation someone's gonna watch in this entire event, talk more about that flattening of the wall. What does that actually mean?

**Sayer Ji:** So what happens is, the intestinal wall has these villi, which is this massive absorptive surface. In fact, if you were to stretch it out into a plane it would be the size of a tennis court. That's also why humans are so—we have this proclivity towards gaining massive amounts of weight, is because it's very easy for us to absorb a lot of amounts of nutrients. But with celiac, the villi start to atrophy, and then the little valleys, the crypts between go through something called hyperplasia, it's almost like a tumorous growth. So it fills it in, so it's completely flat.

**Sean:** So this would be like the villi, and when they start to atrophy they—

**Sayer Ji:** Yeah, they start to shrink and the little crypts start to fill up with non-functional tissue so that there's just this flat space.

**Sean:** So your structures there for the absorption of nutrients just kinda go away?

**Sayer Ji:** Exactly. Because when you have villi, you exponentially increase the surface area. So now they're completely flattened. So that's what happens with celiac proper, however, there's research that was performed a few years ago and published in *The Journal of the Gut* where it took healthy enterocytes or intestinal cells, and celiac intestinal cells, exposed them both to gliadin, one of the most immunotoxic proteins in wheat, and both experienced an inflammatory pathologic response.

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Only, in the case of celiac, it was both an adaptive immune and an innate immune response, whereas—

**Sean:** What does that mean?

**Sayer Ji:** Well there's different types of immunity and, in celiac disease, characteristically, there are B cells producing antibodies against self proteins. So that's a more complex type of immune response that's harmful, whereas innate immunity is more like the frontline soldiers saying "wow, this is a bad thing, and we're gonna cause all this inflammatory hormone release or we're gonna cause inflammation right at the intestinal cell, once the wheat is exposed."

So with celiac it's a more complex process, but what that study showed us for the first time was that everyone has an adverse effect to gluten. You don't have to have a genetic susceptibility.

**Sean:** Is it a slow wearing-down of those villi, those structures, or is it something that happens immediately?

**Sayer Ji:** It can depend on the person's situation. For example, if you have a co-infection. Let's say you get an infection—it's so fascinating, but—these viruses, for example, like influenza, they actually secrete an enzyme that degrades the slippery mucus coat on the intestinal wall called the glycocalyx. Well, wheat happens to contain these little invisible thorns called lectins that specifically bind to the same, exact structures.

And so what happens is we look at wheat in many ways like a pathogen, in that respect, because it's actually binding to the same receptors as bacteria and viruses, and so there's definitely a parallel. Why is this? Because nature didn't necessarily intend for us to eat the little babies of the grass family. The seeds are there to perpetuate their species, not ours, necessarily. So certainly there's benefits to getting the starch, the protein, but we are gonna also pay a price if we just exclusively eat wheat all day long.

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So yes, the process can be very quick, but it can also be very slow. Sub-clinical, you may never know it's affecting you. Which is why I always advocate for complete removal, to feel it out, and then you can reintroduce it, if you don't think you've benefitted. But often people get a more immediate result, like they get an adverse effect when they do that—when they reintroduce.

**Sean:** I want to go back into lectins in just a minute, but first I want to understand, how does somebody know if they are celiac- or gluten-sensitive? You mentioned removing it for 30 days and bringing it back in. I've done that as a practitioner. People bring it back and are like, "oh, I feel like I got hit by a bus." Right? They feel terrible, so they know they have a problem with gluten. What about somebody who wants to see it on paper? What kind of testing is out there for them?

**Sayer Ji:** Well, there's a great number of tests: a blood test that will identify antibodies that are formed in reaction to wheat, that basically show that your body is now attacking its cell structures. So, anti-transglutaminase and anti-endomysium. There's even antibodies that are formed against the brain now that can be identified. That's the beauty of where we're at now, is that you have the celiac, the tip of the iceberg, you get this intestinal biopsy to see if the villi are flattened—that was the gold standard.

But there's this larger mid-portion, which is now open through serological testing, blood testing, which show that so many people are suffering from these antibodies. And, different conditions. It could be type 1 diabetes, it could be multiple sclerosis. Now we're seeing this overlap, and so, the whole model of celiac being very rare and it's just, you know, gastrointestinal.

It's completely exploded. And then there's the even more submerged iceberg portion, massive, which is basically everyone, which all they have to do is remove it and see how they feel. There are quite a few reasons why you should see a dramatic effect, because of the psychiatric aspects of the proteins within wheat as well.



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**Sean:** I want to talk about that, too. You know what, I want to make a note of that, because I really want to come back to the psychiatric stuff. But while we're talking about testing, are you a fan of the Cyrex Labs testing?

**Sayer Ji:** Yeah. Actually, I am. From what I can tell, it's one of the best available testing services because they even test for things like wheat lectin—antibodies to wheat lectin, which, 10 years ago, was pretty much off the radar, and now we know...that forms a whole other part of the problem because even sprouted wheats, which is relatively gluten-reduced, has significant levels of this anti-nutrient that's separate from gluten. And recent research has identified it as playing a causative role in celiac disease separate from gluten as well.

**Sean:** So it tests for different components of wheat. The gluten, the gliadin, the WGA, the other anti-nutrients that are in there.

**Sayer Ji:** Yes.

**Sean:** The different types of gliadin—isn't there alphagliadin, and beta and...

**Sayer Ji:** Yeah. And even alphagliadin has a number of subtypes, so it's such a complex...what people, often, are surprised to find is that it's a hexaploid species, modern wheat. What it means is that instead of us, where we have chromosomes inherited from our parents—mother and father—it's basically they have six sets of chromosomes from three different species becoming one. So, plants sometimes do this. It's kind of strange.

So in total, modern wheat has 6.5 times more protein-coding genes than humans do, and when you look at all the proteins that are in wheat that you have to degrade into very small peptides for them not to cause an immune reaction, it's almost an impossible feat. 23,000 have been identified. That's why, again, to look at gluten as a monolithic entity, it's really much more complex and much more of a problem from the perspective of digestion and immunity.

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**Sean:** So you're saying that the molecule itself is just too darn complex for the digestive system to figure out. Like "what the heck do I do with this?"

**Sayer Ji:** Totally. Because, in terms of our genetic inheritance, it doesn't appear that we have the ability to produce the enzymes necessary to break it down. So that's what happened, even with things like, you know, northern Europeans were consuming cow's milk late into life. Around two years of age is when we lose the ability to produce lactase, the enzyme that breaks down lactose.

But then, instead, we just have all these bacteria through culturing that are now in our gut, the lactobacillus strains that got their name because they break down lactose into lactic acid with the lactase that we don't have. So the same applies to gluten; there are gluten-degrading bacteria in our gut now that we had collaborated with—which, yes, are helping us to break down and get some benefit, in theory, and reduce the "antigen-icity," the ability of it to cause immune reactions—but, there are a lot of things we pay as a result of that, chronic colitis and all kinds of serious health effects.

**Sean:** I don't want to continue to keep harping on the testing side of things, but I'm sure there are people in our audience who have been tested by their doctors for celiac, and from what I understand, those villi need to be really worn down in order to get a positive result on that. So what are your thoughts on that?

**Sayer Ji:** That's the problem; even the celiac associations out there are so entrenched in the view that this is their condition, that you have to meet these criteria, and then you have an illness. And this concept that there is this universal toxicity associated with wheat, this massive, burgeoning, multibillion-dollar gluten-free industry is a threat to them, because they don't feel that they can control any longer the definition.

And the medical establishment does enjoy—the reality is that we get sick from the food we eat, and we take drugs to suppress the symptoms of those sorts of poisonings. It threatens quite a lot of the model that predominates, when it comes to disease care. So, yes, I think anyone who's had a false

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negative needs to look at the problem or the thing itself. There's nothing intrinsic about wheat that we need. I really am a fan of Dr. Rosedale because he points out that, even the moment before we die, we're still producing glucose from protein.

Our body are made of fat, protein, micronutrients, minerals...where's all the carbohydrate? We have glycogen, but the massive amount of carbohydrate we think we need in plant protein...I just think that people need to start looking at it for what it is. And the veil is there because of the addictive properties of wheat and its cultural enmeshment, even with religious glorification. "The body of Christ." How do you say it's no longer a sacred, important grain, right?

**Sean:** "The Staff of Life."

**Sayer Ji:** The Staff of Life, but more of a crutch propping up a very diseased body. And it is certainly causing a great amount of control. The addictive properties; the bread and circus model of the Roman Empire was based on giving out free bread to the masses, and then you entertain them to death with the circuses, and that's how you control. It's a political strategy. And it's still predominant, largely, I think.

**Sean:** The addictive properties of wheat. Is that why it's so darn hard to get off of it? I remember, working with clients it's like, "I've gotta give up wheat? I've gotta get off of grains and gluten?" like it was a big deal to them. They really hold on to it. Talk more about the addictive properties of this.

**Sayer Ji:** The amazing thing about the agrarian transition was the theory of "oh, why would anyone sit down and start gathering up the little seeds of these grasses? What was the motivation?" And the idea—this was put forth by some Australian biologists—that it's the intrinsically narcotic properties of the—

**Sean:** I had that in my notes. I was just gonna say that! You used that word "narcotic" when I read your article.

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**Sayer Ji:** Highly narcotic, yeah, because of these things called gluten exorphins, which basically interact with the opioid receptors in the brain. Which is not uncommon; you know, fructose is the same type of chemical, really, in terms of alcohol. Metabolized along the same pathways, induces the same hedonic responses. So, much of what we eat in the west is truly just drugs. We're also self-medicating, but with wheat what happens is that it motivates us to continue to go through that cycle.

There's an endocrine cycle—I like to call it the neuroendocrine sort of roller coaster—because you have the blood sugar elevation, then the insulin is released, and then you get a crash, and your brain can go three minutes without freaking out if it doesn't have adequate glucose unless it's using ketones and basically by-products of saturated fat to keep itself running optimally.

So, these peptides have been shown to basically be very similar to morphine, and they cause us to crave and love bread. It's to die for. And there's even this sensorial aspect to the smell of bread. It's so imprinted in us that we don't even think about it anymore. It's only when you remove it suddenly, that you almost can go through a heroine-like withdrawal. You don't foam at the mouth, but you certainly can feel a little crazy.

**Sean:** And people go through that and they feel like, "well this is...I feel like this because I *need* wheat. I *need* my gluten in order to feel good." That's a trip.

**Sayer Ji:** That *is* a trip, right? To identify it as a biological need, because we do outsource some of the neurological capabilities to things like coffee. When I wake up in the morning it's part of my brain that I sometimes feel I need for my brain to function, because it's inducing dopamine and all these catecholamines.

But it's the same with wheat, and it's well established now. Dr. Tom O'Bryan actually pointed this out, in that great video of his, that research shows that gluten will cut off blood flow to the cortex—you know, the higher faculties of our brain. So even just on a physiological level, we can see how it adversely affects neurological health.

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One of the interesting things that I wrote about in my essay about the dark side of wheat is the Roman Empire, which was known as the “Wheat Empire,” they used a form of biological imperialism, because what they would do to expand their dominance of the ancient world was they would convert folks that were still living more of a “Paleo” type of life to their wheat economy, and force them to be part of this massive system.

What happened is, the Irish, the Fins, some Germanic tribes very resistant to being part of that—think of “Braveheart”—they still have some of the highest incidence of celiac disease, because they didn’t go through the die-offs and bottlenecks that occurred from being forced into the wheat-based diet and economy. And so, the addictive properties that are fundamentally what I think enabled them to establish this kind of dominance...you dominate people biologically. Put fluoride in their water unnecessarily. Give them gluten. Same effect, basically.

**Sean:** I want to go back into lectins. A lectin, we’ll say, is an “anti-nutrient;” I see it referred to in a lot of the books that I read. Now, a lot anti-nutrients can be neutralized by the proper preparation of the food. Can we do that with lectins?

**Sayer Ji:** Yeah. With wheat lectin it’s a fascinating subject because glucosamine is a quarter of a billion-dollar industry in this country. And what they’re doing to make glucosamine is they’re taking the exoskeleton of shrimp and crab, which are basically sea-bugs made of chitin—just long chains of N-acetylglucosamine—and that’s what wheat lectin attaches to. Now that same biopolymer, N-acetylglucosamine, is part of the lining of the glycocalyx.

It’s what makes it slippery, and that’s what the lectin’s been designed to attach to and, in theory, gain systemic entry into our body with. So, lectins are actually plant defenses, primarily, and they’ve basically attach to the fungal, bacterial cell wall. Worms, pretty much anything with tissue has this antecedal glucosamine. Blocking it has been one reason why—I think that’s why glucosamine has been so powerful.

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Because it's not like you get osteoarthritis from a *lack* of the exoskeleton of sea-bugs. It's from the fact that everyone's eating lectin-rich foods like wheat and it's causing inflammation, it's getting into cartilage, it's affecting neurotransmission, gets into the brain...wheat lectin is exceedingly nefarious in its ability to adversely affect a wide range of tissues. It's able to go directly into cells and change their phenotype, marking them for autoimmune destruction—the thyroid cells, for example. There's so many things about lectin that are under the radar, still.

**Sean:** So you're saying that someone who's experiencing pain and inflammation, they're eating a lot of lectins with the meals they're consuming. They're taking glucosamine—they start taking it—and that glucosamine binds to the lectins and carries them out of the body, and that way the person doesn't feel the pain and inflammation anymore.

**Sayer Ji:** Exactly.

**Sean:** That is some crazy stuff.

**Sayer Ji:** That is some crazy stuff, because people still don't know how it works. But we do know glucosamine—in itself, glucosamine is an atypical neurotransmitter, part of the nociceptive pain pathway, so there are other ways it might be an analgesic, but certainly, if lectins are permeating our body, really kind of corrupting the self-other boundary we need so our immune system doesn't attack itself, that's what it's there for, truly.

And the fascinating thing about wheat lectin is it's actually—a similar lectin exists in tomato, barley, rice, potato, and a lot of the gluten-free products use those ingredients, so technically, people who go on a gluten-free diet, they do get the gluten out, but they're still feeling some osteoarthritis or whatever associated symptoms and they don't know why. It's because we're still eating foods that really aren't...we didn't adapt long enough to, which would include rice and things like that.

**Sean:** So lectins can be neutralized through proper preparation, or they can't be?

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**Sayer Ji:** Well, that's one of the issues. Yes, they probably can be neutralized at high heat, in some cases. But the pH in the stomach doesn't seem to adversely affect wheat lectin. So ultimately no, it's actually very effective in getting through our own defenses. And that's why I think it's so insidious. You have wheatgrass, for example, which has profound benefits.

It can reverse cataracts, in the animal model—the aging animal model. But it also contains significant amounts of wheat lectin 34 days after sprouting. Two thirds of it goes to the leaf tip, because that's where the birds and the cows are trying to eat it, and the one-third goes to the root because that's where all the bacteria and the bugs and whatever try to eat that plant. So it's a great defense, but again, wheatgrass has profound benefits but it also, in some people, makes you sick. You could get inflammation from it.

**Sean:** I was reading your article about this and you said that “lectins share similarities to viruses.”

**Sayer Ji:** Yeah, it's fascinating. Because of their size—several orders of magnitude smaller than just the human cell—they have, just on sizing level, very similar properties but they do tend to attach to similar receptors. Like sialic acid; this component of the slippery coat that protects cells. You know when you get a cold and you get all this mucus?

Well part of that is so that you protect from further attachment of the hemagglutinin part of the influenza virus. And then you have the neuraminidase enzymes. You have H1N1, which is hemagglutinin type 1 and neuraminidase type 1, the enzyme that breaks through the slippery coat. Well that's what lectins do. Wheat lectin specifically attaches to sialic acid and makes entry through it, as well as the viruses.

**Sean:** So lectin kinda opens up the door and...

**Sayer Ji:** Exactly. And then they go into the cell—they do have the ability to attach to a cell surface and activate nuclear protein production. So it can actually activate the DNA, change the cell type just as what viruses do, and by doing so they've now just caused the immune system to identify that

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cell as others, which has to attack it, which causes inflammation, and a lot of the associated symptoms that are caused by infection. There are a number of parallels for certain, and there is actually a new paper that came out that identified wheat as a pathogen and thinks that it should be reclassified as a pathogen.

**Sean:** Really?

**Sayer Ji:** Yeah.

**Sean:** Food should be classified as a pathogen, huh?

**Sayer Ji:** Yeah, it's fascinating because, although it's not self-replicating, there is an argument to be made that the confirmation, the folding structure of a protein itself can transfer over to a neighboring protein—this is the case for prions—and then cause pathological change. And so that's also an argument that can be made for wheat that ties it directly to classical pathogens.

But, yes, there's definitely an argument to be made in terms of how it enters our body, what it does once it's inside our body, what our immune response is to it, how it evades the immune response by corrupting the self-tolerance within our body.

**Sean:** I bet you haven't had wheat for a really long time, huh?

**Sayer Ji:** No, I haven't. I don't mess with wheat. It's scary to me, you know, on some level. And actually, I am of the mindset that, "yes, in moderation," and actually, almost you could look at it as a vaccine. A little bit might just induce some type of sensitivity or immunity to it. But, yeah, I'm pretty wheat-free. And in regard to that, I think the ancestral diet implies that we're just gonna eliminate grains anyway, so I'm not big into rice or any kind of gluten-free grain.

There are the alternatives, of course: you have quinoa, amaranth, buckwheat, which are more in line with the forageable-type plants because they're the dicotyledons family, which is different from the



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cereal grasses, which grains are part of the monocotyledons. Those are more consistent with—we would've harvested them directly without having to cook them. So there's definitely something to be said for them. They're called pseudo-grains, sometimes, but they're really not grains.

**Sean:** So those are okay, in moderation.

**Sayer Ji:** Yeah. I would say so. If you feel like you need something to transition, go for it, but even they have lectins and other problems.

**Sean:** There're a lot of people out there who are consuming or buying sprouted wheat bread. From what I understand, that's loaded with WGA, right, which is a lectin. Problematic?

**Sayer Ji:** It is. Yeah, I actually called Ezekiel 4:9 Food for Life and tried to talk to the nutritionist, because I was doing my little investigation on the opening of Pandora's box, the critical role of wheat lectin and human disease, and yeah, it's implying that it's the Biblical wheat.

You know, when Christ was snapping his bread, it was relatively gluten-reduced, and it was also sprouted but, yeah, they don't seem to—it's the poster child of the health food industry, but absolutely pro-inflammatory. The lectin is all throughout that, and it's certainly gonna contribute to, I think, arthritis-like symptoms and associated lectin problems. I would avoid that, for sure.

**Sean:** Stay off the Ezekiel.

**Sayer Ji:** Yeah.

**Sean:** So from what I understand, WGA, wheat germ agglutinin, can reduce brain-derived neurotropic growth factor or some big word like that, right? Talk more about that gut-brain axis.

**Sayer Ji:** That's one of the really profound discoveries of our time is that, in many ways, the enteric nervous system, stomach-based nervous system, is more of a contributor to our general sense of

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neurological health and even our own brain, because most of our neurotransmitters are produced in our gut. Like serotonin. I think it's about 90%. So what that means is, whatever happens in our gut directly affects our mood, our consciousness, our perception.

With wheat, obviously, what happens: you start eating this food and, in order to survive it, literally, your body has to shift into this almost pathogenic selection of bacteria, which are no longer serving this ancient commensal background of millions of years of us outsourcing all that we need for immunity and even neurotransmitters to the gut.

Suddenly we're having to try and survive this gluten onslaught, so these bacteria are proliferating. The other ones are not doing their job. It just becomes a mess. And you know, the new definition of our humanity is actually, we are a metaorganism; 90% of what we are, at the least, is the cells in our gut because they outnumber us and they provide way more genetic material than our own genome. So we have to start looking at what we put in our body and the effects on our microbiota as being essential to our definition of selfhood, and our humanity.

**Sean:** Dr. Kharrazian's going to cover this topic in-depth. I'm pretty excited about that. The gut and the brain, they're just like...go together. They're one. It's a trip.

**Sayer Ji:** It's amazing. In fact, you can communicate through the vagal nerve to the brain. The bacteria will actually communicate this way, so it's a trip.

**Sean:** I'm really fascinated by the brain and psychology, and psychiatry as well. What other psychiatric disorders are linked to gluten?

**Sayer Ji:** That's a fascinating question because in my indexing project, when I was working on all the research on wheat-associated conditions, what kept happening were all these neurotoxicity-associated problems. Starting with neuropathy, of course, but also looking at psychiatric conditions that range from autism to mania to ADHD, and then schizophrenia was the first that was discovered.

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Sixty years ago, the first case reports started coming out about full remission from schizophrenia with a gluten removal from the diet. And then during World War II what happened is, there was observed globally, a reduction in new psychiatric patients in hospitals throughout, especially in North America. They did a retrospective study to determine if that was linked to the rationing of gluten-containing grains, and they found that was the case.

It's fascinating; you look at the history of St. Anthony's Fire, in the Middle Ages, the villages would have this bread go bad. There would be a type of fungus—ergot, for example, would grow on it, and they would experience this...being burned by hell flames, and they would foam at the mouth and have seizures and die. So there's already an established history with wheat and grains, with gluten having a propensity towards causing some type of reaction. In fact, LSD 25 came from ergotized rye, as one of the by-products of that fungus.

So, the psychiatric connection is sort of under the radar, but it's profound, because there really isn't much we can do right now with medication, if anything, in ever measuring. There's no objective measurement for whether you have schizophrenia or in the brain, what severity. It's all based on presentation. So removing gluten would seem like baseline thing you could do, given the weight of the evidence for the benefit...

**Sean:** If there was a study 60 years ago that got schizophrenic people off of gluten, and there was full remission, why isn't that done now?

**Sayer Ji:** That's just the problem is in psychiatry it's really about, still, symptom suppression, of course. Looking for the root causes, which you advocate for every day, has just really not been on their radar. But it is certainly, I think, something that the literature says is real. And it's very compelling. It's not just theoretical. It's not a few case studies any longer. There's actually a lot of research on it being a causative agent.

**Sean:** So people with psychiatric disorders should strongly consider getting off of gluten.

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**Sayer Ji:** Absolutely. And it's interesting because my whole understanding of it, it's part of the endoparasitism concept, okay? There's this type of ant that gets—a spore lands on it from a fungus, and it starts to actually infect its nervous system and cause it to walk over, far off, to a specific type of plant, attach to it, and it turns into a mushroom. That's kind of what I see wheat doing as a human species; we think we're raising wheat, right?

It's now covering a good portion of the arable surface of the land. We've destroyed all of its competitors, taken over its reproduction. It can't survive without us. We've killed all its pests. And we think we're the one that are benefitting, and we're raising this. They're raising us! It's almost like this Matrix-like phenomenon.

**Sean:** It's an interesting way to think about it!

**Sayer Ji:** It's true! Because monoculturing has taken over. The biodiversity is almost gone, you know. Corn and soy and wheat. What are we getting from it? We're dying slowly. Chronic diseases. Multi-trillion dollar medical industrial complex is taking advantage of the sickness, and we're all not experiencing our true vitality. So when you do remove it, it's like you're going back in time.

You go back to hunter-gatherer type of energy and vitality. The ketones are activating in your brain. You're full of energy, versus just eating something with your standard American crap, and then you get this buzz. It's like food sex, and then you're crashing, and all you can think of is self-medicating with a cigarette or a drink or whatever, fight with your partner, and then you're thinking about your next meal. That's how people live. So I think the food has a lot to do with that.

**Sean:** Talk about healing the damage that's been done to the gut by gluten.

**Sayer Ji:** So the amazing thing is, the intestinal membrane regenerates like every three days. And that also means that, if you're in a high-stress situation, you're evaporating glutamine, that's its primary fuel source. You can also just induce a complete destruction of the lining, as well.

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But when it comes to healing from gluten, there are certain aspects of the adaptive immune system that are gonna remember and not be able to promote the healing process right away, but generally I think, when you're removing the offending substance, within a matter of days you start to see some type of recovery. My whole approach is to focus on introducing the foods that are very nourishing that contain natural probiotics to re-implant the system.

**Sean:** Like what?

**Sayer Ji:** A lot of the foods that I like to focus on are vegetables that are—could be squash, could be kale—instead of having toast with your eggs, you could have sautéed kale. And it's such a good complement. Trying to get back to high-nutrient, low-carbohydrate vegetables. Even Atkins advocated for that in his program, the whole low-carb approach. People didn't really listen to that part, but the vegetables, high-quality protein sources.

Staying away from lectin-rich foods, so nightshades—tomato, potato, chilies, eggplant. They're all in the same family. Cow's milk products, I know there's subtleties to this talk. There are some forms that are beneficial—

**Sean:** Which would be?

**Sayer Ji:** Goat's milk products, I allow for. I think that they actually have a lot of benefit, especially cultured. And then there's the beta-casein alpha 2 protein that some cows produce, which supposedly makes cow's milk much safer. But I still am not an advocate of it. Now if I have blue eyes and blonde hair and my ancestors ate it, maybe it would be different. And then, of course, eliminating grains—

**Sean:** I want to back up to the beta 2. Is that labeled with the milk at all?

**Sayer Ji:** Unfortunately, no. There's been efforts to produce a product for the market in New Zealand, and then there's—Jordan Rubin, actually, who was also producing milk through that

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particular type of cow. But at this point, in this country, I don't know that you can even purchase it, unless maybe through a connection with the Amish and you know the cow. But I still do not believe that it is an ideal food for us.

**Sean:** What about fermented dairy products?

**Sayer Ji:** Much better. It's just like fermented wheat bread, like sourdough. It's a way of overcoming the casein, which, just like with the gluten being an industrial adhesive, casein was formerly used in Elmer's Glue, and it's definitely like gluten in a sense that we don't have the ability to break it down effectively, so we elect these bacteria to do it for us so it's not a bad idea. But unfortunately, a lot of problems can occur from these proteins linked with autoimmunity. Obviously, type 1 diabetes. Even MS. Quite a lot of problems with cow's milk, in my opinion.

**Sean:** Any other foods?

**Sayer Ji:** To heal with?

**Sean:** Yes.

**Sayer Ji:** I'm a big fan of curcumin, which spices turmeric, basically. Provides such a broad range of beneficial effects for inflammatory gut issues that I would consider incorporating it as a supplement or as a food extract. I'm a big fan of smoothies where you might take flaxseed, mix it in with coconut milk, blueberries, and the mucilaginous fiber has so many benefits for healing up the gut.

It's very soothing, very good for regularity. So that's another tip that I think works well. But in terms of clinical research, we have an article on it on GreenMedInfo, but B complex has been clinically studied for accelerating recovery from full-out celiac disease. L-carnitine has been used. There are quite a few substances that can be utilized, even as supplements.

**Sean:** Good stuff. Any other pearls you want to share with our audience, before we wrap up?

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**Sayer Ji:** Pearls...Well, I guess the thing about it is, once you make the commitment to eliminate—I'd say grains as a whole, what really does happen, and it's almost like a neurological straitjacket is removed. You start to experience food very differently, and also your body. I also would argue that exercise and experiencing that peak level of exertion where you feel like you're gonna die, high intensity is fundamental to awakening regeneration within the body.

We already know, obviously, human growth hormone and testosterone and all these other things for men and then for women are stimulated, so I believe that we have the most profound pharmacopeia within our body. The types of substances you can produce through that kind of effort, and then optimizing with nutrition, will put you in place of joy and vitality that is just amazing. That's really what we're all looking for.

So, yes, get the wheat out of the diet, number one. If you can do better, just get all grains out. And then just really focusing on quality and ancestral nutrition, whatever that might be for your ancestors.

**Sean:** Getting off the gluten and the grains in general is not an easy thing to do. It's much easier said than done. Because people do, as we talked about earlier, go through that withdrawal period. Most people do. Do you have any tips for getting through that?

**Sayer Ji:** There are ways you can do this. One example is even coffee. There's a lot of changes in our way of looking at it now. Beneficial aspects. A lot of research showing that. There's a component in it that is called cafestrol—it's even in decaffeinated, it's an oil—that has about five times the potency of morphine. So we're using opiates already to kind of navigate through our twisted health. Psychological health, too. So you can kind of use those things as leverage.

Like you're getting gluten out, you might, you're feeling down, try using coffee to self-medicate. There's little things you can tweak. Also, even incorporating the ketone-generating food. So coconut oil is a great way to start the morning off, just to get the brain used to accessing its energy source from other means. But yeah, I'd say—and some people, they do go through withdrawals, and

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then others actually get the opposite response; it's like the moment they stop, they actually start feeling wonderful. So it is definitely a mixed bag.

**Sean:** Depends on the person.

**Sayer Ji:** Yeah.

**Sean:** I got one more big question for you. I asked this to Dr. Tom O'Bryan and he went off. So check it out: a couple months ago, there was a story that came out in the news saying that the whole gluten thing was a fad, and there's a research study, and all this stuff, right? What were your thoughts, when you heard that?

**Sayer Ji:** Well, there is an aspect to it that is a little ridiculous, in terms of being like "gluten-free water," right? It's being used as a way to just be the new "cholesterol-free," right. So there's an aspect to the gluten-free movement that's a little bit faddish, but when it comes to the research—it was upsetting to me, too—I know the studies.

It's so clearly available to anyone with Internet access. So for them to claim that it's not based on any kind of solid, clinical foundation or physiological, is completely obscene and absurd. It's like a lot of the mainstream media; it's really just an excreta. It's just propaganda that serves some industry's function. Even if it's just sensationalistic, like I need to get some kind of ad revenue or get people to visit their article, but no, it's here to stay.

I think Dr. Tom O'Bryan and yourself have done incredible work to get the word out as to the reasons behind why it's so popular. People feel great. It's doing a great thing for their bodies, their minds, their spirits, and the proof is in the gluten-free pudding and people need to just try it if they're haters or if they're doubting.

**Sean:** The gluten-free pudding!



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**Sayer Ji:** Yeah...

**Sean:** Your website is greenmedinfo.com. Tell our audience about your site and about the free PDF, “The Dark Side of Wheat?”

**Sayer Ji:** “The Dark Side of Wheat,” yeah. So our site is basically an open-access database. We have 23,000 abstracts on 3,000 ailments and 1,500 substances that people can go to see the research itself that everyone claims doesn’t exist to support our advocacies, which is natural medicine. And then we have a free PDF, “The Dark Side of Wheat,” that’s been downloaded like 50,000 times. It’s all about the topics we’re discussing, and it has all the hyperlinked research as to the adverse of wheat beyond celiac. It’s available there.

**Sean:** Fantastic. Go check it out. Sayer, thanks so much.