

LECTINS: Good guys or bad? A Top 10 Episode with Dr Steven Gundry

Announcer:

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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today's guest is a remarkable guy. He is... Let's see. He was a two-term president of the board of directors of the American Heart Association and served on the board of directors for the American Society of Artificial Internal Organs, and is a renowned cardiologist, a medical researcher, and a New York Times bestselling author who had a 40-year career in medicine where he conducted over 10,000 heart surgeries, developed different life-saving medical technologies, and then decided that he could advocate for a lifestyle change to avoid surgeries altogether.

You wrote *The Plant Paradox*. When I first saw this coming out, I was excited because your book is all about how plants protect themselves from being eaten. Some of the thinking behind the Bulletproof Diet is that there's a list of suspect foods, and one of the big things that makes things like garbanzo beans, and bell peppers, and pretty much all grains suspect is the defense mechanisms that are present in these things. What led you go down this path of looking at plant toxins versus all the things you could have done? You're like an artificial heart guy.

Dr. Gundry:

Well, about 17 years ago, my arc in life was changed very much like yours was. I was a very famous professor and chairman of heart surgery at Loma Linda University, and a guy from Miami who I called Big Ed was sent to me with inoperable coronary artery disease. All of his blood vessels were clogged up. You couldn't put stents on him. You couldn't do bypasses. He'd been going around the country to surgeons who take this sort of thing on, and I'm one of those. He finally got to me, and he'd been going around the country for about six months.

Now, this is a very obese guy, and I'm looking at his coronary angiogram, the movie of his heart, and I'm going, "You know, I'm really not going to help you. I agree with everybody else. There's just nothing we're going to do." He says, "Well, look. I've been at this for six months. I've gone on a diet. I've lost 45 pounds. I went to a health food store, and I bought this big bag of supplements. I've been taking these supplements every day. Maybe I did something in here." So I'm looking at him going, "Well, good for you for losing 45 pounds, but it's not going to change anything here. I know what you did with all those supplements. You made expensive urine."

So, anyhow. So this guy, we got another angiogram on him, and I was so impressed that I actually operated on him. If I had known what I know now, I would have said, "Hey, great going. Let's clean the rest," but I wasn't. I was stupid back then. So after we were done, I said, "Hey, tell me about this diet, and let me look at those supplements." So he starts describing the diet. So he started to describe this diet, and I'm going, "Wait, that's my thesis." So this is rather poignant because like you, I was a very obese individual. I weighed 230 pounds. I'm 5'10. I was running 30 miles a week.

Dave Asprey:

Oh.

Dr. Gundry:

I've been going to the gym one hour every day, and I could go on any diet known to mankind. The Atkins diet, I could lose 20 pounds, and then gain 25. I had high cholesterol and pre-diabetes, and I had such bad arthritis that I actually had to wear braces on my knees to keep running.

Dave Asprey:

Wow.

Dr. Gundry:

I got migraine headaches every day. Imagine doing baby heart transplants with migraines. It's not a lot of fun. I was told that this was genetic because my father was almost identical in all his lab works and about the same size, and there was really nothing I could do about it. So I called my parents when I listened to Big Ed. They sent my thesis up to me, and I put myself on my thesis. I looked in his bag of supplements. I was using a bunch of these supplements intravenously down in the lab to resuscitate hearts that had been dead for an hour, and then putting them in a bag ice water for 48 hours. It had never occurred to me to swallow the dumb things.

Dave Asprey:

With like carnitine and things like that or?

Dr. Gundry:

Yeah, like carnitine, like actually grape seed extract.

Dave Asprey:

Oh, yeah.

Dr. Gundry:

Like lipoic acid, like pycnogenol, coenzyme Q10.

Dave Asprey:

What led you to that? That's almost anathema to your profession at the time. What made you do that?

Dr. Gundry:

So what I decided to do was turn not only myself, but my patients into an ongoing research project because at my core, that's what I do is research. So I started doing this on myself, and I lost 50 pounds the first year. I did that on purpose, and then I subsequently lost another 20 pounds, and I've kept it off now for 20 years. So anyhow, I started doing this on patients that I operated on. So I set up an institute in Palm Springs where I asked anybody who wanted to play with me that every three months, we'd send their blood work up to the Bay Area, to Virginia, down to Texas, wherever I could find an interesting lab that could give me what are called inflammatory cytokines, and then we started tweaking foods, and we started tweaking supplements.

Very rapidly, a ton of people with autoimmune diseases started coming to my office, and they'd say, "What do you know about autoimmune disease?" I go, "I don't know anything about autoimmune disease, but I know a whole lot about the immune system because I'm a transplant immunologist, and I'm famous for having the longest pig-to-baboon heart transplant, survival 30 days, baboon with a pig

heart." So we looked at immune markers, and lo and behold, this set of plants came right up on the top of the list. For instance, our favorites, the grains and the beans appeared really very quickly.

Plants have a problem when animals arrive because they couldn't run, they couldn't hide, and they couldn't fight. But as you and I know, they're chemists of incredible ability. So what they do is they use chemical warfare, and one of their favorite attack mechanisms is the protein lectin, and lectins are so beautifully diabolically designed to wreck havoc on an animal predator. I couldn't have done it better myself.

Dave Asprey:

But isn't it true that our bodies naturally produce tons of our own lectins, like all animals are full of lectins?

Dr. Gundry:

Absolutely true. Lectins are a communication system, and lectins are patterns that turn receptors off and on.

Dave Asprey:

So we have our own onboard set of lectins, but plants have other lectins?

Dr. Gundry:

Correct.

Dave Asprey:

Okay.

Dr. Gundry:

One of the interesting things is the longer we've been exposed to a plant lectin, the longer we've had to adapt from not so much our genome, but our bacterial genome. So to give you example, there's lectins in leaves, and a lot of them are fairly nasty, but we're a tree dwelling ape. We came from treeshrews, so we've been eating leaves for 40 million years. We share 99% of our genes with chimps and gorillas. A gorilla eats 16 pounds of leaves every day, and a gorilla has more muscle than we'll ever have ever dream of, and all they eat is leaves. So there must be something to it.

Dave Asprey:

I mean, I believe that paleo recommends way too much protein because it's a terrible fuel source, and that said, if we ate only leaves, I've rarely come across a profoundly healthy vegan. So there's a comfortable middle ground. I'm like, "What should be low to moderate high-quality protein?" You should eat low anti-nutrients of all sources including lectins. I'm profoundly lectin-sensitive. I figured this out a while ago, and if I eat one bite of potato, especially the nightshades for me are just kryptonite, but all the greens suck.

So if I eat one of those things, I get the upper back pain that I had my entire adult life until I figured this out. It was always along the upper spine. I had arthritis in my knees since I was 14, and so I would never touch this stuff. My son who's seven, and they started putting one potato in the soup they make at school. Sure enough, he needs a massage every night in his neck for the entire week from that

one thing, but my daughter can eat a potato with no effects. Why the difference in responsiveness between two of my own offspring? What's going on there?

Dr. Gundry:

That's a great question. The really cool thing is there's usually a family history component.

Dave Asprey:

Yeah.

Dr. Gundry:

I do family trees, and it's fascinating that there's usually IBS, or there was diarrhea, or constipation, or lots of hypothyroidism, lots of rheumatoid arthritis, but... So there's clearly a genetic predisposition, and we look at all the markers that are known for autoimmune diseases. Clearly, a lot of people carry these. There are people who react to these almost instantaneously. So there are people like you and actually, people like me that react virtually instantaneously. I'm now absolutely convinced that every one of us is sensitive to the major lectins.

Dave Asprey:

You said something there. So I grew up in New Mexico where green chili, which is a member of the nightshade family that's very high in lectins, it's soul food, so I love this stuff. I used to slice habaneros and just put them on whatever I was going to eat and cry when I would eat. I tell you, I put a little bit of cayenne on my food, my joint symptoms returned. The symptoms started when I was 14, and I was diagnosed with arthritis. But my dad, mid-70s, he's had one hip replacement.

I said, "Dad, could you just stop eating cayenne pepper and just try this just for two weeks?" He goes, "Nah," argues against it, and eventually says, "I'll give it a try." He calls me two weeks later, and he said, "You know what?" He said, "I don't think I'm going to have to have my other hip replaced," after two weeks of just not eating these things, and he was already avoiding grains and mostly Bulletproof. But yeah, you can't give up green chili because that would... Life isn't worth living without green chili, which is what any New Mexican will tell you, but can you explain Greece?

Okay. I went to Greece recently, and there was almost nothing. I'll have the fish and don't put anything on it because every single vegetable available in Greece is an eggplant, a tomato, a potato, or a pepper, and those are all super-high-lectin nightshade family foods, and maybe a grape or something if you're lucky. But why is everyone in Greece not just falling dead from heart disease early on? In fact, the Mediterranean Diet is from there.

Dr. Gundry:

Interestingly enough, the arthritis rate in Italy, and Greece, and Sardinia is incredibly high.

Dave Asprey:

Ah.

Dr. Gundry:

Yeah, and it was one of the things... The Sardinians actually have one of the longest lifespans of any... but they actually have one of the highest autoimmune disease rates in all of Europe, and I'm convinced that it's actually these healthy foods that have been blocked by the other healthy foods eat.

Dave Asprey:

Now, you mentioned something about kids with strep throat and antibiotics. That describes me to a T. I was obese as a teenager. I was on antibiotics for more than 15 years. Every month, I had chronic strep throat. But I lived in a basement that had toxic black mold in the walls, which also triggers autoimmunity. What interactions between the autoimmunity or just between the lectins and these other poisons made by fungus ends in some cases, bacteria in water-damaged buildings? What have you seen in your practice?

Dr. Gundry:

There's a wonderful woman. I didn't put her in the book because she's actually a very private individual. She came to me. she was from San Diego and had been building... bought a house that was newly constructed, but she didn't know that it was constructed during a lot of wet weather in Southern California.

Dave Asprey:

Yeah.

Dr. Gundry:

She had a ton of toxic black mold in her house, and she moved out, and she... You would know her name because she come a bit of a world expert on toxic mold. She moved out to the desert, and she literally could not go anywhere. She couldn't go to doctor's offices since it. So she came to me. She said, "I hear you're different," and I said, "I'll tell you what, I think the fundamental problem is lectins are sensitizing you, your immune system to fire at any foreign substance, kick ass, and take names, and we'll figure out who everybody is later."

So I said, "Humor me. Take lectins out of your diet, and let's see what happens." Sure enough, within two months, she was back. All of her immune system activation that I measure was down to normal, and she says, "Oh, you're a genius. It was the lectins." I said, "Well, no, no, no. The molds were getting you, but it was... I took away the other primary signal, so your immune system calmed down."

Dave Asprey:

How do I know which lectins matter most for me? Like you're saying cucumbers. Most people tolerate cucumbers pretty darn well, and the overall scheme of lectin-containing foods, I would put them at the bottom of the list. White rice is another one. It's interesting. I totally recognize that some people are going to react to cashews, and so I use cashews in the Bulletproof Collagen Protein Bars because you basically need a binding agent. I looked at immune reactivity to nuts, and cashews are one of the lowest nuts. Macadamias are too oily. You can't use them for that purpose. Otherwise, they would have. It was a tough call because I'm like, "I'd rather use no nuts so everyone's happy." But I mean, almonds. How are almonds from a lectin perspective versus cashews?

Dr. Gundry:

They're pretty nasty.

Dave Asprey:

Yeah.

Dr. Gundry:

But it's actually the peel of the almond that has the problem, and actually, cashews, it's the outside peel that has the vast majority of the toxins, so.

Dave Asprey:

They're steamed. The reason I chose them is that you have to basically cook off the outer layer of the cashew, and you're just getting the inner thing. It's just like polished rice, but I agree. If someone is really tough on lectins, cashews might not be right for you, but man, they're probably one of the better nuts. Do you agree with that or no? It's okay to disagree.

Dr. Gundry:

Yeah. I mean, the really sensitive folks, the guys with autoimmune diseases, I can't tell you the number of folks that peanuts and cashews are real problematic.

Dave Asprey:

You are one of the top event correlation doctors as far as I can tell from your thought process. You were saying... You draw lab panels for inflammation. You don't have to draw a lab panel. All you have to do is wake up in the morning and make a fist. If you have a harder time making a fist, your grip strength is low, or you have a pain in your feet that you didn't have before, it's a pretty sure sign that you were exposed to something, and it's usually a lectin.

Dr. Gundry:

Correct.

Dave Asprey:

It was moldy food. It might have been histamine-containing food. It might have been oxalic-acid-containing food. It's usually one of those, and it might be something else, but it's usually one of those. Oh, or you drank some beer, which had [over-toxinated 00:17:49] or something. Those are primary things. But if you have no inflammation, you wake up, and your muscles all work really well, your grip strength is strong, there's a pretty good... pretty good correlation with no inflammatory markers, at least in my experience, and you have a little bit more clinical experience than I do given that I'm an unlicensed biohacker, but do you buy that, that [crosstalk 00:18:09]?

Dr. Gundry:

Yeah. Actually, I do.

Dave Asprey:

Okay.

Dr. Gundry:

The amazing thing is what I wanted to do because I'm a researcher is I wanted to prove this with biomarkers.

Dave Asprey:

Well, you have the great scientific background, the real medical background, and correlating this stuff to inflammatory markers is really important and also understanding pathways. So let's go into pathways for a little while. So are we looking at correlations between mitochondrial DNA because this is the power plant wiring of the body and specific lectin sensitivity, or are we looking at nuclear DNA, which is like the physical hardware, the walls and the foundation, the meat of your body? Do we know?

Dr. Gundry:

No. I'm actually even more interested in bacterial DNA because as you know, we get all of our mitochondria from our mother.

Dave Asprey:

Yeah.

Dr. Gundry:

All mitochondria are female.

Dave Asprey:

And they're all bacteria by origin, right?

Dr. Gundry:

That's exactly right. They are all bacteria by origin. Cells engulfed them millions of years ago, billions of years ago. There's a really cool theory, which I ascribed to that we get all of our initial bacterial load from our mother.

Dave Asprey:

Absolutely.

Dr. Gundry:

She craps on us. There's a theory that the president of the Microbiology Society has that we get our female bacteria to talk to our female mitochondria, and they actually text message each other.

Dave Asprey:

Yeah.

Dr. Gundry:

One of the problems with early antibiotics that probably screws this whole thing up is our original female-to-female connection. No offense to guys. Our mitochondria are female. They're not...

Dave Asprey:

Oh, yeah.

Dr. Gundry:

it's that early connection. The wires get caught. When a new population of bacteria move in, then they don't have the intimate connection to talk to mitochondria. So what I think... Yes, lectins can target

mitochondria. There's no question about that, but I want to get them closer to the source where I can manipulate them, and that's in our microbiome. What I want to do is I want to re-establish those connections between the microbiome, a healthy microbiome, and not only our immune system, but mitochondria. So that's where I like to do my hacking.

Dave Asprey:

The text messages, the signals between the gut bacteria and the mitochondria, what's your theory for how the message is sent?

Dr. Gundry:

So we've got it all backwards. The cellular membrane is where all the hacks or all the communication goes on, and that's how it happens. So these bacteria produce hormone-like substances that enter either our lymphatic circulation or enter our blood. They then attach to membranes, either the cell membrane or they're quite capable of passing through the locks in a cell membrane and attach to a mitochondrial membrane, and they exchange information.

Dave Asprey:

There's definitely the whole... the chemical and hormonal communication that happens, and one of the things that came to light, so to speak, when I was doing the research for Head Strong is the effect of biophotons, where your gut bacteria make 5,000 times more photons than your mitochondria make, and your mitochondria listen to these and send from these things. It's one of the reasons that I'm all over sleeping in a dark room. In fact, I'm going to have to talk about these things. I did some research on mitochondria in the eyes, and I don't know if there's a lectin connection here, but I'm asking you. It turns out that 5% of the retinal cells are melanopsin sensors. They have extra mitochondria, but they take light, and they don't send it into your visual processing at all. They send it into the SCN in the brain, which controls your daylight cycle.

Dr. Gundry:

Yup.

Dave Asprey:

So what do lectins do for biophotons? What do lectins do for sleep? What do they do for vision? Take me down that road.

Dr. Gundry:

Okay. So one of the guys I talk about in the book whose name is Tony, Tony had alopecia, and he had huge white spots on his hands, and his arms, and some on his face. Michael Jackson had alopecia.

Dave Asprey:

Isn't it vitiligo, or alopecia, or both?

Dr. Gundry:

Vitiligo. Sorry, sorry.

Dave Asprey:

Okay.

Dr. Gundry:

I'm seeing a patient with alopecia earlier today. Yeah, vitiligo.

Dave Asprey:

Okay.

Dr. Gundry:

Loss of pigment. When he went on my program years ago, his vitiligo disappeared. All of his cells were back, and he said, "So, how'd that happened?" Now, I could have been a wise guy and said, "Well, my diet is very anti-inflammatory, and so that's how it happened." I went, "No, no, no, no. That's too easy." So I looked into melanocytes, and melanocytes are modified nerve cells.

Dave Asprey:

Yeah.

Dr. Gundry:

Now, the original predator of plants were insects, and lectins were designed to paralyze insects by stopping the communication between nerves. it makes great sense.

Dave Asprey:

Mm-hmm (affirmative).

Dr. Gundry:

So I said, "Wait a minute. These are modified nerve cells, and lectins targets our nerve cells. So it was the lectins that were doing this." Fascinatingly, I lost touch with him, and he saw me at a conference about four years ago, and his vitiligo was back. I said, "Hey, what's the deal?" He said, "Ah, you know, I'm eating sloppy." I said, "Well, let's do this experiment. Let me give you a two-page list again. Come back on it, and let's see what happens." We were just on a panel at Harvard three weeks ago on a wellness symposium, and he was sitting right next to me. He held up his hands, and they were clear, and he says, "I got to tell you. I'm a living proof that lectins target melanocytes." So I've been fascinated that lectins have the potential to target the melanocyte receptors in our eyes and screw well our deep sleep cycle.

Dave Asprey:

Talk about fertility and lectins.

Dr. Gundry:

From a plant standpoint, having compounds that interfere with reproduction of your predator would be really high on your priorities. People say, "Well, wait a minute. You say that plants think." Well, plants definitely think. Not in the way we think of thinking, but they are sentient beings. Even if they weren't, evolutionary pressures affect plants equal to animals. These guys not only think, but they... The evolutionary pressures are that if you come up with a compound or compounds that either make you

less edible, but more importantly, make your predator either leave, or die, or not reproduce, then that compound will be selected.

They've had 400 million years to do this, and we've been around 2 million, maybe. Boy, practice makes perfect, and the more we realize that this has been an ongoing battle from the day the first insect crawled on the land and said, "Man, this is the garden of Eden. Look at everything there is to eat." The war started right then, and people have to realize that it's an ongoing battle, and they're really clever.

Dave Asprey:

They are really clever. So they're going to inhibit fertility for that reason? All right. I've got a hard question for you. If you had to eat a plate of french fries made with potatoes fried in canola oil from a restaurant or smoke a cigarette, which would you do?

Dr. Gundry:

I would choose to have neither. I've actually never had a cigarette in my life, so.

Dave Asprey:

Me either. I don't smoke.

Dr. Gundry:

So I don't intend to take you up on that bet.

Dave Asprey:

But it sounds like your answer is you would say the lower harm is the cigarette.

Dr. Gundry:

Correct. Yeah.

Dave Asprey:

So I'm in agreement with that. Dr. Cate Shanahan was on, and we did that. Okay. You're a former president of the American Heart Association, right? We all acknowledge smoking is a crappy habit, right? It's just that fried high-lectin foods fried in bad oils are even worse. Yet, we have so many people, "Oh, I would never smoke a cigarette," and they're munching on like death in a little wax paper wrapper. So I'm like, "Don't do either one either." Who knows? Nicotine actually has some health benefits in low doses, right?

Dr. Gundry:

Oh, got you.

Dave Asprey:

It is true that fasting is a low-lectin diet. All right, Dr. Gundry. Where can people find out more about your work other than picking up your book online or wherever books are sold called The Plant Paradox?

Dr. Gundry:

So they can go to gundrymd.com, and they can sign up for a free newsletter. I post tons of recipes on my YouTube channel, and I post tons of blogs, but best place to start is gundrymd.com.

Dave Asprey:

Awesome. Well, thanks again for being on Bulletproof Radio.