

THE MODEL HEALTH SHOW

EPISODE 755

How Gut Health Impacts Heart Health, Brain Health & More.

With Guest Dr. Steven Gundry

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SHAWN STEVENSON: Welcome to the Model Health Show. This is nutritionist and bestselling author Shawn Stevenson. On this episode, we're gonna be doing a real gut check. We're gonna be looking at the connection between our gut and our heart, our gut health, and our heart health. We're gonna be looking at the connection between our gut health and the function of our brain and cognitive function, and so much more. This is one of my favorite episodes of the year, the year is just kicking off, of course, but I know it's gonna be one of my favorite of the year because I have one of my favorite people, one of my favorite teachers, one of my favorite mentors on this episode, and he is ready to blow you away.

SHAWN STEVENSON: Our guest today is New York Times bestselling author Steven Gundry MD, and he is an award-winning cardiologist, and the founder and director of the International Heart and Lung Institute in Palm Springs, California. After a distinguished surgical career as a professor and chairman of Cardiothoracic Surgery at Loma Linda University, Dr. Gundry changed his focus to curing modern diseases via dietary changes, primarily because he knew that this was the biggest cause, and also potential treatment for our epidemics of chronic illnesses. On this episode, we're doing a deep dive into all things microbiome and gut health. Let's jump into this conversation with the incredible Dr. Steven Gundry. I'm so grateful to have you here. You've been to my old studio to my house...

DR. STEVEN GUNDRY: Yeah.

SHAWN STEVENSON: Now that you are here at the new studio for the first time. Dr. G is good to see you.

DR. STEVEN GUNDRY: Great to be here, Shawn. Thanks for having me back.

SHAWN STEVENSON: Of course.

DR. STEVEN GUNDRY: Seems like I just saw you.

SHAWN STEVENSON: I know, I know. It's just like, it's like a glitch in the matrix.

DR. STEVEN GUNDRY: That's right.

SHAWN STEVENSON: And speaking of the matrix, you are a distinguished cardiologist, research scientist, and you're well aware that heart disease has been the number one killer in the United States for many years. But your recent research is indicating that unfortunately, we tend to look right at the cardiovascular system when we're talking about heart health, but you're connecting the gut and the health of our gut to our cardiovascular system, to our brain health, and so much more. So let's start off by talking about that connection.

DR. STEVEN GUNDRY: Yeah. It's funny, I was on the phone to David Perlmutter, who's become a friend of mine, grain brain and drop acid there. I gave you a plug, dude. And who's a great neurologist, and we were laughing. I said, "Isn't it weird that a heart surgeon and cardiologist and a neurologist would be talking about the gut, the GI tract, as the real instigator of all the problems in our very different disciplines?" And it's, literally Hippocrates said 2,500 years ago, "all disease begins in the gut." And I spent, now 25 years, trying to figure out how I knew this, how he knew this... And I get closer every year, but yeah. And I use some examples in gut check about the cholesterol hypothesis of causing heart disease. And it's okay if you like that hypothesis, but it's a hypothesis and there's plenty of other ones.

DR. STEVEN GUNDRY: The interesting thing, and I tell the tale of two patients, one who's a guy in his late 60s, who is an administrator for a big, actually a surgical group. And he had horribly high cholesterol numbers. Total cholesterol above 500 LDLs. The so-called bad cholesterol of over 400. And his, the people he worked for said, "oh jeez, you're a walking dead man. You're gonna have a heart attack and you need to be on statin drugs." And he tried a few statin drugs, but they really had some bad effects on him. So he was off of them. And he's in his late 60s now. And they finally convinced him to get a CT coronary angiogram, a really nice 3D view of the heart, very, very accurate, looking for plaques that's very different than a CT calcium score.

DR. STEVEN GUNDRY: Totally different. This is literally an angiogram. And at the same time, he had made an appointment to see me, to see what I thought about all this. And we do blood work, that's a lot different than most folks do. So he gets the results of his angiogram and his arteries are perfectly clear. They're gorgeous. There's not a plaque anywhere to be seen. So when he brings that in and I look at his blood work and I say, well, I could have saved you the trouble because there's nothing in here in this blood work that would predict that you would develop coronary artery disease. And he goes, "whoa, whoa, whoa. What about my LDL cholesterol 400?" And I said, well, you're not oxidizing it and you got to activate cholesterol to be interested in sticking, and your blood vessels actually have to be sticky. They have to be lined with fly paper, and you have to have markers of inflammation and you have none of those.

DR. STEVEN GUNDRY: So I would've predicted that you would have no coronary disease. And he was kind of apoplectic. And I said, so after you got your clean coronary scan, what did your cardiologist want you to do? And he said, well, that's just it. He wants to get me on statins. And I go, huh. And he says, wow, we gotta keep you the way you are. Well, here's a 68-year-old guy with no plaque. Why in the world would you start a statin drug?

SHAWN STEVENSON: Prophylactically.

DR. STEVEN GUNDRY: I have another patient about the same age who's had multiple stents, coronary bypass, and his LDL cholesterol on statin therapy and another therapy. His LDL is 44, I mean 44. The other guy is 440. And this guy, when we look at his numbers, this little bit of cholesterol is ultra activated. His blood vessels are sticky and it's no wonder that this guy is, even with his little bitty nothing cholesterol is still clogging up his blood vessels. So it's kind of the tale of two cities. Cholesterol really had nothing to do with this guy's problem. It was quite frankly his diet and his gut microbiome and his leaky gut that was actually causing inflammation on the surface of his blood vessels and cholesterol's basically a spackling compound.

SHAWN STEVENSON: That's the part right there. I just gave this analogy. There was a young man who was concerned about having high cholesterol. His dad is on a statin and this kid,

he's like, he's in his early 20s and he's trying to eat his diet and avoid cholesterol like the plague. And I gave him the analogy of, first of all, cholesterol is one of the most vital nutrients in our bodies. Our liver makes it on tap every day to build our sex hormones, which is kind of important.

DR. STEVEN GUNDRY: Correct.

SHAWN STEVENSON: But also it's there for repair and to classify these forms of cholesterol. And I broke it down for him. HDL, high density lipoprotein, low density lipoprotein, LDL, "Did I say cholesterol in either of those terms?" He's like, "No, you didn't. I was like, "Those are carriers." Right? And your liver is shipping some places and some stuff is getting scooped up and sent back to actually recycle and use cholesterol because it's so important. And sometimes there can be damage in the artery, for example. And we find, okay, there's some cholesterol build up here, but it's kind of like there's a bunch of firemen at the site of a fire, right?

SHAWN STEVENSON: And then you blame the firemen for starting that fire. But the firemen are there probably trying to help out, but they get villainized. That's what's causing the problem instead of the inflammation, flame, that is really more of the culprit. And so connecting the gut and this potential catalyst for inflammation to our heart health is something we don't think about.

DR. STEVEN GUNDRY: Yeah. That's right. And what's really, I guess sad is that when we look at people with coronary artery disease, they have... 100% of them have leaky gut by our measurements, by blood tests. And as I talk about in the book, what's really shocking is that 100% of these people and other people have antibodies to the various forms of wheat, wheat germ, agglutinin gluten, non-gluten, wheat proteins. 100% of them have antibodies to these proteins in wheat. And you go, and he goes well, that's interesting. And a lot of these people are eating gluten free 'cause they're worried about gluten and yet they have antibodies to it. And like I've talked about in other books, but now we've got a huge patient series.

DR. STEVEN GUNDRY: There's this protein in whole wheat called wheat germ agglutinin. And

it is a little tiny lectin, and it's so tiny that it can actually get through the wall of our gut without leaky gut. It can actually go right through. And the weird thing is, this guy will attach to the lining of our blood vessels. And in fact, the lining of the blood vessels, which is called the glycocalyx, was first discovered and identified by radioactive labeling of wheat germ agglutinin and injecting it. And lo and behold, it lit up this lining of blood vessels. So every time we have that healthy whole wheat piece of toast for heart health, we're actually ingesting one of the biggest inflammatory molecules ever made. And it's sticking to our blood vessels. [chuckle] Like a splinter.

SHAWN STEVENSON: This should be front page news.

DR. STEVEN GUNDRY: It should.

SHAWN STEVENSON: It's crazy. This is crazy.

DR. STEVEN GUNDRY: The reason it's not front page news is because the cereal corporations would really, and the bread corporations would not like you to know that information.

SHAWN STEVENSON: That's pretty inflammatory.

DR. STEVEN GUNDRY: Oh yeah. It's very inflammatory.

SHAWN STEVENSON: Wow. We were talking about this before we got started about this. There's a lot more data coming out on this, but it's been going on for years and years and years with this contamination with glyphosate in relationship to a lot of these grains. So in some respects, it's not just the grain itself, but it's the compounds that we're using to grow these grains and mass today. And by the way, a lot of these crops are... The hallmark of them, they're utilized for primarily ultra processed foods that show up through the drive through window and on store shelves. But let's talk a little bit about that. Let's talk a little bit about glyphosate.

DR. STEVEN GUNDRY: Yeah. So glyphosate's been around about 50 years now, and it was

patented by Roundup. Glyphosate was patented as an antibiotic. It was not patented as a weed killer. And that should have set off alarm bells, but I guess it didn't. And so glyphosate, people still kind of associate glyphosate with GMO crops, and that was its original reason to be sprayed on soybeans and corn that would resist glyphosate. But now, factory farms are so big that when you get a harvester, which costs, now, millions of dollars, you want that harvester on a field on a particular day, and you want that field ready to harvest.

DR. STEVEN GUNDRY: You don't want to wait for weather, the crop to die. And then desiccate. So most commercial crops, oats, rye, barley, wheat, soybeans, corn are sprayed with Roundup to kill the plant. And a dead plant desiccated is a lot easier to harvest. Water is a pain in the neck to harvest things. So it's now used on almost all commercial grains to speed the harvest. And so you could have a harvester on field X on such and such a day knowing full well that that crop will be dead and ready to harvest, 'cause that's efficient. So two things happen. Number one, they don't wash the glyphosate off.

DR. STEVEN GUNDRY: Those grains then go to two places, they're either fed to our animals and glyphosate is incorporated into their flesh, or perhaps even worse, they're fed to us. They go into all of our grain products and they appear in our cereals, they appear in our breads, they appear in our pizza. And so we get basically a double dose of glyphosate with almost everything we eat. The problem with that is that glyphosate is, number one, an antibiotic and it kills our gut microbiome. But it's very specific, and I talk about that in Gut Check. It kills off the part of the gut microbiome that's involved in the tryptophan pathway, which is the feel-good hormone pathway that makes 5-HTP and serotonin. And we used to think that most of the serotonin that we get was from our brain, that was wrong. Then we said, no, it's in the nerve cells down in the gut, that's where it's coming from. No, we were wrong.

DR. STEVEN GUNDRY: It's actually produced by bacteria, for the most part. Those are the bacteria that glyphosate really kills. And so isn't it odd that over the last 50 years, we can blame social media and let's do it, but our epidemic of anxiety and depression directly correlates with glyphosate use. And these plants become more and more resistant to glyphosate, so every year more and more glyphosate is applied to them to kill them. On top of that, getting back to your original proposition, glyphosate causes leaky gut by itself.

DR. STEVEN GUNDRY: You don't need any other activity. I'll give you some great examples that I talked, examples that I talk about in the book. About 80% of my patients have autoimmune diseases. That's why they come to see me. And knock on wood, we're really good at reversing it. About 94% of people with an autoimmune disease in one year's time are in remission on no meds, no markers of their autoimmune disease, and they're really happy, obviously.

DR. STEVEN GUNDRY: And a lot of these people will go over to Europe, and how can you resist? They have croissants, they have baguettes, they have pizza, they have pasta, and they don't react to it, and they don't flare their psoriasis, their Crohn's doesn't flare, their rheumatoid arthritis doesn't flare, their Hashimoto's, thyroiditis doesn't flare. And they come back and they go, oh, Dr. Gundry, you've cured me. Thank you, I can eat these wonderful foods. Two weeks later, they're on the phone going, what the heck happened? My psoriasis just popped out. My rheumatoid arthritis, my gut feels awful. And I said, I bet you started eating our bread and our pizza. " And they said, "well, yeah, 'cause I'm cured." No, our stuff's got the glyphosate, and that's what started. And we see it all the time. I just saw a patient this week, the exact same thing happened to him.

SHAWN STEVENSON: Yeah. I've heard that story again and again from people as well. They go to other countries and can have all these things, and then they come back here, and it's just not the same. And on top of that, the WHO has this huge list now, it's just getting longer and longer, of known carcinogens in our personal care products, in our food supply, just in the environment in general. Glyphosate is categorized as a group 2A carcinogen, which is a probable causing cancer agent for humans. No big deal, it's probably, it's not for sure.

DR. STEVEN GUNDRY: Dont worry about it.

SHAWN STEVENSON: But it's just like, if we think about the mechanisms behind it, and how it's damaging our protective entity, really, our gut is like the front line of our immune system in many ways. And I love this book so much, and I got to read an early copy, of course. And it's really pointing to how all this stuff works, like you're really demystifying this incredible

connection. And we talked a little bit about heart health, that connection, I want to talk a little bit more about the brain, because you mentioned serotonin, and we think it's a brain thing, because we kind of live upstairs. But this also ties back to something with the cardiovascular system and statins that I want to point out.

SHAWN STEVENSON: What we see when folks get on to a statin is some interesting side effects typically pop up. One of them, this was published in the journal Current Diabetes Reports, and the researchers, and this was a big meta-analysis, they're looking at a lot of different studies, and this is what they stated. Statin therapy increases the risk of diabetes by 9% to 12% in the two meta-analyses. This is multiple studies of multiple studies...

DR. STEVEN GUNDRY: Correct.

SHAWN STEVENSON: Of statin trials, and listen to this, statin therapy increases the risk of diabetes by upwards of 99% in five population-based studies. They stated, "Statin therapy impairs insulin sensitivity and insulin secretion based on clinical and epidemiological studies." That's bananas in pajamas. Not only do we see increased risk of diabetes, we see muscle pain and weakness, we see cognitive dysfunction. And so to proactively or prophylactically put people on to a statin, it's like, "Oh, just to be safe without informed consent about these other things is a huge problem." And to circle all this back, let's talk about the real connection here with improving our cognitive function, our brain health by focusing on a Gut Check.

DR. STEVEN GUNDRY: Yeah, there's a chapter, leaky gut equals leaky brain. And what's sad to say is literally close to 100% of patients who report to my clinic for whatever they're there for will have leaky gut by blood test. And those who report a cognitive issue, whether it's brain fog, whether it's mommy brain, whether it's Mild cognitive impairment or whether it's Parkinson's or beginning Alzheimer's, every one of those people have markers of a leak in the blood-brain barrier. Now, the blood-brain barrier is this really amazing tight barrier between everything in the bloodstream and the brain. The brain is this sacrosanct organ and it's this blood-brain barrier is so impenetrable that if you had a brain tumor and I wanted to give you chemotherapy, I could put all the chemotherapy in the world into your veins and it would never get into your brain. It would not get past this barrier. In fact, you have to put it in the

spinal cord, in the spinal fluid to actually get it to where it needs to go.

DR. STEVEN GUNDRY: It's that tight. And yet when we see people with leaky gut, we see that they are attacking this blood-brain barrier and it's become porous. And then we can see actual neurons inflamed in the brain, and it's called neuroinflammation. And so, holy cow, this whole process of these neurodegenerative diseases, which are now an epidemic, you can tie directly back to their source, which is actually the gut and not the problem with the brain. So we've been looking in the wrong places and it's shocking to these patients who go, what the heck, my brain's on fire. And all the guardrails are down. And this stuff is getting right through my brain. And we're seeing, I see a number of patients now with early onset Parkinson's disease. A couple months ago I saw a woman who's 37 years old with active Parkinson's and I just started treating a 46-year-old gentleman with active Parkinson's.

DR. STEVEN GUNDRY: And when you look at these folks, the gut is wide open, leaky their blood-brain barrier is down and we can actually see an attack on the motion centers in their brain. Now the good news is and the reason I see them is we conceal their leaky gut. And the exciting thing is when we do that their leaky brain stops and the neuroinflammation goes away. This 37-year-old woman had a horrible left sided tremor, would be like this the entire time. And now she has... You can kind of see a little twitch in one finger but everything else is gone. And almost all of her neuroinflammation and in six months time is all quiet just by sealing her gut, just by changing the food she was eating. Pretty exciting.

SHAWN STEVENSON: Got a quick break coming up. We'll be right back. Hippocrates, the father of modern medicine, stated that all disease begins in the gut. We often think of this in terms of chronic diseases but this holds true for infectious diseases as well. He had a plethora of nutritional treatments for his patients. And according to a study site in the journal *Frontiers in Pharmacology*, one of his most notable treatments for preventing infections was Propolis. Propolis is time-tested immune support from the world of bees. And today, numerous peer-reviewed studies are affirming its benefits. One study published in the peer-reviewed journal *antiviral chemistry and chemotherapy*, revealed that propolis has significant antiviral effects specifically in reducing viral lung infections. Now, a little fun fact is that Hippocrates used propolis both internally and externally for his patients. And again,

today the external benefits are being highlighted in new studies as well. This study published in Phytotherapy research found that topical propolis that was applied a few times a day it was three times a day in this study accelerated the healing of cold sores faster than the placebo group.

SHAWN STEVENSON: The researchers found that topical propolis not only reduced the amount of herpes virus present in a person's body, but it also protected the body against future cold sore outbreaks. One other study and again, there's so many, this is a meta-analysis of multiple studies published in the evidence based complementary and alternative medicine and it found that propolis has antiviral, antibacterial, antifungal, and anti-tumor properties. It is well-noted to be an immunomodulator that increases the body's resistance to infection. This is one of the most supportive things that you can do for your immune system. And it's one of my favorite Go-to's that I use on a regular basis. And I'm talking about the propolis immune spray from Beekeepers Naturals. Go to beekeepersnaturals.com/model and you're going to get 20% off their propolis immune spray and also storewide on their other incredible bee products, including their Superfood honey and their Royal Jelly supplement.

SHAWN STEVENSON: That is incredible. For our cognitive function, go to [B-E-E-K-E-E-P-E-R-S naturals.com/model](https://B-E-E-K-E-E-P-E-R-S-naturals.com/model) for 20% off. Get yourself hooked up right now with their incredible propolis immune spray. It is something that I always have on hand. I travel with it. It's actually in my bag right now, but whenever I'm traveling and on the road and also just keeping my family healthy proactively, especially during cold and flu season, hop over there, check them out. Beekeepersnaturals.com/model for 20% off. And now back to the show.

SHAWN STEVENSON: Dr. G, you're a gift to humanity. Seriously. You've been in practice for decades and helping so many people, it's just like, this isn't just theory, this is what's possible. And you've got case after case after case, and still the mission is so big because unfortunately even in the age of the internet, a lot of people aren't aware of this information. And the fact that you've consolidated this into gut check and also just such an attractive title, right?

SHAWN STEVENSON: Because it's like the, you're the king of the double entendre as well, but this is really a gut check for all of us to get educated and to share this information because

there's too much senseless suffering that's taking place. And now to steer this conversation to, "Okay, even though we might not relate our heart issues to our gut health or our cognitive decline, or a neurodegenerative condition and many other conditions," you said it, you kicked the show off with this Hippocrates, thousands of years ago. All disease begins in the gut. Like, we've got to get this memo. Now the question is, how do we do it? How do we give ourselves a gut check? How do we improve the health of our gut? I want to talk about.. are there some specific foods, is there some specific tenets? We'll get to that in a moment. But one of the flagship things that you talk about is the importance of diversity. So let's talk about that first.

DR. STEVEN GUNDRY: Well, one of the things that if you look at super-old people, late 90s, actually 105 and above, and you look at their microbiome, and the microbiome should be a 100 trillion organisms in our gut. And to give you an idea of how big that is, was recently discovered there was a count. There are 8 trillion trees on planet Earth. 8 trillion. There are 92 trillion more bacteria in each of our guts than there are trees on planet earth. That's a big number.

DR. STEVEN GUNDRY: So this is a tropical rainforest that we didn't even know existed until the human microbiome projects started in 2006. We didn't know these guys were there. We had no idea of how important they were, what they did. And because of that project, we now know there are at least 10,000 different species of bacteria in our gut, and we can categorize them as good guys and bad guys. And a lot of companies are trying to convince you that the bad guys are really bad. And all we want is good guys. But one of the foundations of Gut Check is, believe it or not, and I hate to use the expression, it takes a village, that you've got to have bad guys and good guys in your gut, and they actually play important roles. The other thing that's important is that we used to think, well, you gotta eat fiber and fiber really important and soluble fiber is the key to health. And there's a lot of truth to that. But one of the revelations of Gut Check is you could eat all the fiber you want. You could take inulin or inositol and you will never improve your gut diversity, and you will never improve your inflammatory markers.

DR. STEVEN GUNDRY: And this was done by the husband, Weiss-Sonnenbergs team in Stanford. But if you give that fiber, soluble fiber to volunteers along with fermented foods,

things like yogurt, kefir, vinegars, then and only then will the gut become more diverse, different species, and will inflammatory markers go down. So what's up? Well, as the book says, you've got a whole assembly line, a car assembly line of pieces to make the final product. And the final product in a lot of cases is a short chain fatty acid called butyrate. And butyrate is one of the most important things all of us need for you name it, you need butyrate. There are butyrate-producing bacteria. The problem is, most of them have to have some products from other bacteria to make butyrate. So you could give these guys all the soluble fiber you want, but if they don't have precursors for making butyrate, it'll be never be made. So this gut diversity is huge.

DR. STEVEN GUNDRY: Alright, so now let's go back and look at these 105-year-old people who are thriving. Number one, one of the hallmarks is that they have an incredibly diverse gut microbiome, much like actually a 30-year-old would. The second thing that's really cool, which is really probably most important, is that these microbiomes love to eat xenobiotics. Now what the heck is xenobiotics? I've heard probiotics, prebiotics, postbiotics, xenobiotics are all these xenoestrogens, artificial plastics that are in our environment, fragrances that are toxic, as most of us are beginning to find out, this set of bacteria is really good at eating all of these toxins. In fact, I was just on one of the big mold shows, and if molds were the problem that everybody seems to think they are, then everyone in New Orleans should be dead. Right. And they're not. What's happened? Well, bacteria, believe it or not, compete with fungus and mold. They actually don't like each other very much. They're after the same stuff.

SHAWN STEVENSON: The socials and the greasers.

DR. STEVEN GUNDRY: Yeah, yeah, exactly. So they each will eat the harmful compounds that each produce to... As a defensive mechanism. And we used to have a great set of microbiome that would eat all these fungal toxins and yum, yum, yum. We got you. They're all gone. They've been wiped off the face of our earth. And so you look at these super-old guys, they got a diverse microbiome. They've got a microbiome that's really interested in protecting their home, which is us. And another exciting thing is that you need a bunch of different bugs to produce something like butyrate, something like Urolithin A. And we can get into that if you want, but you got to have a set of bugs to do this. It can't... You got to have a village to do

it.

SHAWN STEVENSON: Ah, I love this. Listen We need to stop with this. Very simplistic, good or bad. Especially when it comes to human health. Bad cholesterol, bad bacteria. I think sometimes more appropriate labels can be potentially pathogenic, can be opportunistic, but to call any of these bacteria even E.coli. We... There's a certain amount that we actually need.

DR. STEVEN GUNDRY: Absolutely.

SHAWN STEVENSON: So, with this being said, what we're looking for is diversity as a hallmark and being able to have a good balance of these things. And now we've got to talk about what is disrupting this balance in our modern society. And with that being said, I also want to ask you about the current state of affairs of our gut health here in particular in the United States. How's our diversity looking when it comes to our microbiome?

DR. STEVEN GUNDRY: Oh, it's a disaster. I mean This was supposed to be inside of us, a tropical rainforest, and it's been burned down to the ground. We've done two things simultaneously. We've napalmed our tropical rainforest with broad spectrum antibiotics. Now, broad spectrum antibiotics have only existed for 50 years. I was actually in medical school back in the dark ages when these were introduced. And they were miraculous because you could just literally cluster bomb any infection. You wouldn't have to figure out who was causing it, what was doing it, what antibiotic would work, what one wouldn't. You just, wham! You dropped a nuclear bomb. And that was great. It was miraculous. What we didn't know, 'cause we didn't know those guys were there, is we were killing all the villagers while we were after the enemy. And we see that playing out right now.

DR. STEVEN GUNDRY: We didn't know that these broad spectrum antibiotics killed our microbiome, just wiped it out. And so many of... And now we still use them willy-nilly for anybody who's got a cough, a runny nose, a scratchy throat. These things are dispensed like candy, still any woman has a urinary tract infection, bam, antibiotics. And what I talk about in gut check, these antibiotics, depending on which ones and how often they're used, can wipe out our gut microbiome for up to two years. It can leave you with maybe one or two single

species instead of 10,000 different species. And just like we know in California, forest fire burns down a forest. We can go plant some little seedlings, but it's gonna be 20-30 years before that becomes a functioning forest again.

DR. STEVEN GUNDRY: And this is number one. And those antibiotics are fed to our animals that we eat 70% of all the antibiotics produced in the United States are given to animals, not humans. And they are a conduit directly into us. And we are talking off camera. They're given to animals to make them grow fatter and faster. And believe it or not, it's really good to make us grow fatter and faster. So we're inadvertently eating this every day. Now, that's number one. We're killing them. Number two, we're starving them to death. And that's part two. So these guys, our great-great-grandparents lived around the world, lived on fermentable starches, root vegetables, things that would keep through winter. And all of these are collectively resistant starches. They're called resistant 'cause we don't digest them very well. We don't absorb those sugar molecules very well. And a lot is left over as it leaves the small intestine where most everything's absorbed. And it goes to the colon where the vast majority of our microbiome is living.

DR. STEVEN GUNDRY: And they're down there going, okay, here it comes, here comes dinner. And so there's all this delicious soluble fiber that these guys are used to getting. So every time we would eat, our gut microbiome would go, okay, you know, two or three hours from now, dinner's gonna arrive. It's gonna be fine. So now all of our foods, our processed foods are ultra processed foods, have been devoid of fiber, and they're now super concentrated and easily absorbable sugars and easily absorbable.

DR. STEVEN GUNDRY: We've actually broken down all the proteins into individual amino acids and peptides so that bam, everything is instantly absorbed and there's now nothing left for our gut microbiome. And one of the interesting theories, which I like a lot about where hunger comes from your gut microbiome is actually what drives your hunger. And if you aren't giving them anything to eat, they're constantly sending literal text messages to your brain going, what the heck? Where is it? Go, go find some more. And we keep eating to feed that hunger signal.

DR. STEVEN GUNDRY: There was a beautiful study done in China a few years ago to actually prove the point. It's called the Gut Centric Theory of Hunger. They took some volunteers, put them on a two week water fast, all they got was water. One group was given 100 calories of prebiotic fiber, soluble fiber. Now we can't adjust it, we can't absorb it, but it's bug food. So those guys who got those 100 calories had absolutely no hunger for two weeks. The other guys were really hungry for a while. What happened? Well, the gut buddies said, "Hey, thanks a lot. Got dinner. We're good. You don't have to go looking for anything else. Thank you. You fed us. Have a nice day." And you start looking around and looking at Americans, and then look at people who still feed their good gut buddies. And the difference is striking, we're the balloon people for a reason.

SHAWN STEVENSON: Makes me think of the Michelin man. Stay Puft Marshmallow Man Shout out to Ghostbusters.

DR. STEVEN GUNDRY: Yeah.

SHAWN STEVENSON: What about the environment itself? Alright. There's a lot of interesting things that we're exposed to today and also things that we're not exposed to because we're constantly kind of creating these in quote, indoor habitats for ourselves as if we're not a part of nature. Does that play into this microbiome equation?

DR. STEVEN GUNDRY: Yeah, absolutely. We know now that people who have dogs have a much healthier, more diverse gut microbiome. People who have outdoor cats have a much more diverse microbiome. There's been a lot of talk about forest bathing and...

SHAWN STEVENSON: Shinrin-yoku.

DR. STEVEN GUNDRY: The interesting thing about that is there's now a newspaper that forest bathing benefits is actually because you're actually acquiring microbes from the air. That you kick up with your feet and you've receded your gut with important microbes from the soil. And so, like I tell everybody, number one, get a dog. Number two, let the dog lick your face anytime you can get an opportunity. And yeah, and so that's one thing. But yeah,

forest bathing and you're right, we've gotten these sterile enclosures that when even my kids were growing up we had what was called a victory garden named after World War II. And I mean, we'd pull a carrot out of the soil and brush it off and eat it. It wouldn't even occur to us. Well, let's take it inside and wash it. Don't it get full of germs and dirt and now, oh my gosh, that would be the last thing we'd want to do. So, eat dirt...

SHAWN STEVENSON: To consolidate it, eat dirt. Alright, so we've already kind of looked at some of the insults that our microbiome has been faced with. Now let's shift gears a little bit and talk about some of the things that we can do proactively, because we don't wanna wait 30 years for those seedlings to start to grow.

DR. STEVEN GUNDRY: True.

SHAWN STEVENSON: And the good thing is that we can make a notable difference, but we need to be intelligent. We need to be proactive in this. And in the book, you share some specific "yes foods" that support the health of our microbiome. So let's talk about some foods first.

DR. STEVEN GUNDRY: Yeah. So again, we've been starving these guys to death. So the more you can introduce prebiotic fibers, in the form of tubers, artichoke hearts, for instance, or a great source I'm a huge fan of the chicory family of vegetables, radicchio, some people call it that Italian red lettuce that now you can see in most grocery stores, Belgian endive, frisée. One of the things that strikes me as not odd but when I first was visiting the south of France and Italy almost every salad came mixed with radicchio and chicory and frisée. And you go, gee, that's funny. Why is everybody eating this stuff? Well, it's one of the best prebiotic-containing fiber foods there is and all these guys are eating it. The other thing that I think is missing is that you can eat these things, but you've gotta prep the microbiome.

DR. STEVEN GUNDRY: And I have a chapter that says, dead men tell no tales, but dead bacteria do. And what the heck does that mean? Well, we've been told that probiotics are really good for us friendly bacteria and that fermented foods are really good for us like yogurts, kefir, kimchi or kombucha. But most of those foods do not have living bacteria.

They're all dead. Even if they were living, they can't make it past gastric acid for the most part. But it turns out that bacteria have information on their cell wall that is read by other bacteria. And I use the example of my dogs. We have four dogs, two rescues, three of them are male. And if you've ever had a male dog, all they want to do is sniff urine. And you're going come on give it up. You know what's so interesting? Well, there's lots of information in that urine.

DR. STEVEN GUNDRY: Bowzer was here and he had kibble for dinner last night, and I know it's him, and he gets information from that. Well, we now know that bacteria read the information on dead bacteria and actually get information of what they're supposed to do. There's a fascinating study. There's a keystone species of bacteria called Akkermansia muciniphila, mucus-loving Akkermansia. And there won't be a test I promise.

DR. STEVEN GUNDRY: So there are actually two companies. One makes living Akkermansia, the other makes dead Akkermansia. And it turns out that in experiments they both have an important effect and actually slightly different effect. But how in the world could a dead bacteria have that effect? Well, dead bacteria, tell tales. The other thing that's important is probably the most important part of fermented foods is the postbiotics that are contained in those foods. So what the heck is a post biotic? Alright, so probiotics are friendly bacteria. Prebiotics are what the friendly bacteria like to eat and postbiotics are what the friendly bacteria poop is. I guess the best way to describe it, it's the products of eating these things that have all the effect on our health.

DR. STEVEN GUNDRY: Those products seal our gut wall. Those products make our brain work properly. Those products make our hormones work properly. Those products keep cancer cells from growing. Those products coat the line of our blood lining of our blood vessels. So it's these postbiotics that are critical and they're in these fermented foods. Final point, one of the exciting things is polyphenols, and I've been writing about polyphenols since I started writing, and polyphenols are these brightly colored plant compounds that it's the fall right now, and we see all these beautiful fall colors. Those are the polyphenols in the leaves of the plants. What are they doing there? Well, polyphenols are used by the plant to protect the plant's mitochondria from sun damage and from environmental hazards. And I've written about how

they work, but we eat polyphenols and we don't absorb them very well.

DR. STEVEN GUNDRY: And everybody's for years, been trying to figure out, well, what the heck? We know they're good for us, but we really don't absorb them. What's the deal? It turns out that the gut microbiome think polyphenols are the best thing they've ever eaten. I hate to use the expressions, the best thing since sliced bread. And they love polyphenols. So they're a prebiotic for gut bacteria. And they then take those polyphenols, which really aren't readily absorbable and turn them into prebiotic compounds that are phenomenally good for us.

DR. STEVEN GUNDRY: So what's exciting in the book is the more you can have pre-fermented polyphenols, you've kind of doubled your pleasure. Pre-fermented polyphenols wine is a fermented polyphenol. Apple cider vinegar is a fermented polyphenol. So anytime you can add these polyphenols that are already fermented, and then our gut bugs say, oh, half the work is done. I'm ready to go with this stuff, you're gonna double all the benefits.

SHAWN STEVENSON: Our microbiome plays a huge role in the health of our immune system, brain health, metabolic health, and so much more. And there's one beverage that has been proven to support the health of our microbiome. A recent study published in the peer-reviewed journal Nature Communications uncovered that a unique compound called Theabrownin found in traditional fermented tea called Pu-erh, has some remarkable effects on our microbiome.

SHAWN STEVENSON: The researchers found that Theabrownin can positively alter our gut microbiota and directly lead to a reduction in something called lipogenesis or the creation of new fat. Another study published in the Journal of Agriculture and Food Chemistry found that Pu-erh may be able to reverse gut dysbiosis by dramatically reducing ratios of potentially harmful bacteria and increasing ratios of beneficial bacteria. What's so remarkable about Pu-erh is its concentration of polyphenols that are incredibly important for healthy gut flora.

SHAWN STEVENSON: The only Pu-erh that I drink is a fermented Pu-erh that's wild harvested, making it even more concentrated in polyphenols. And it's also triple toxin

screened for one of the highest levels of purity. Not many folks realize that a lot of conventional teas, even organic teas, contain things like heavy metals and toxic molds. This is the only company that is going above and beyond to make sure that this is the highest quality tea available.

SHAWN STEVENSON: And I'm talking about the folks at Pique Life. Go to pikelife.com/model. That's P-I-Q-U-E-L-I-F-E.com/model and use the code model at checkout, and you're going to receive up to 15% off free US shipping. And you can even get a free sample pack of 12 teas along with their wonderful Pu-erh bundles. You're gonna get access to over 20 delicious award-winning flavors, and of course, their amazing Pu-Erh and Pu-Erh blends. Go to pikelife.com/model. Again, that's P-I-Q-U-E-L-I-F-E.com/model. Use a code model at checkout for up to 15% off, plus many other bonuses. And now back to the show.

SHAWN STEVENSON: Alright, so are you recommending that we drink wine and apple cider vinegar?

DR. STEVEN GUNDRY: Yeah. Now if you don't drink, don't start. It's a slippery slope, but there's been some really interesting human studies looking at gut microbiome diversity and inflammatory markers and gut wall health. Some volunteers were given grape juice. Other volunteers were given red wine. Third group of volunteers were given gin, the same amount of alcohol in the gin as was in the red wine.

DR. STEVEN GUNDRY: The red wine drinkers had the most gut diversity and the best improvement in the wall of their gut. The grape juice drinkers were close, but a little bit behind. The gin drinkers not only had no benefit but actually had a worse gut diversity and worse gut wall health. And that explains why so many of these regions, the blue zones and don't get, don't get us started on that. They're primarily red wine drinkers. Now there is a limit and let's... That's realize there's a limit. The other thing that I think is important to realize, particularly in Europe, is that wine drinking is a beverage that's served with a meal. There isn't, in traditional families, there's not a happy hour where we slog, slog down, two chardonnays before we had to dinner, the wine is served as a part of the meal.

SHAWN STEVENSON: Interesting. Yeah.

DR. STEVEN GUNDRY: And it's, I think that's something we've missed and to our disservice.

SHAWN STEVENSON: Yeah. You know, humans develop the ability to process and use ethanol as a fuel source hundreds of thousands of years ago, earlier versions of us. And it's just like, why, why, why would we be able to do that? And then recently, of course, because we tend to go to this other extreme and also to denature in a way, the way we've interacted with these things, where we have the happy hour, for example, just pure glasses of wine, one after the other. And the name of like Dr. Gundry said, drink wine because I want to have a healthy gut. And, you know, to prop that up is full of antioxidants, whatever. But realizing that the way that this has been utilized recently is not what we've been doing for the past few centuries.

SHAWN STEVENSON: And so recently many of our colleagues have been really going hard on the fact that alcohol of any type is something to avoid. Now you mentioned gin, which is not naturally derived ethanol. This is distillation. This is something where humans were like, there's not enough alcohol in this alcohol. Let's do more. Let's figure out a way to have more that this can rapidly, potentially damage our gut. And also this creates some of the potential damage with our nervous system and brain, all that stuff faster.

SHAWN STEVENSON: Now with that being said, if we're looking at, again, not placing the good or bad label on something, especially humans have been doing for thousands of years, let's look at the context in which we see the consumption of something like red wine, which is, wow, that's really interesting that these different blue zones have incorporated this. Let's not ignore that, that exists. And also you just said the thing which nobody said, which is with food. And that interaction with food, with potential prebiotic fibers and with like, there's some potential magical stuff happening there.

DR. STEVEN GUNDRY: And with family.

SHAWN STEVENSON: And with family, that part.

DR. STEVEN GUNDRY: And, let's get back to your cookbook and with family. It was part of a family gathering and it was a normal part. In fact, a little off subject, there's an interesting theory that beer was first made when grains were cultivated about 12,000 years ago. And there's an interesting theory that it wasn't grains and bread that fostered civilization, it was actually alcohol from the fermentation of grains that made living in close quarters possible.

SHAWN STEVENSON: Interesting. Interesting.

DR. STEVEN GUNDRY: Think about that for a while.

SHAWN STEVENSON: No. I've got my youngest son Braden, here in the house. [laughter] So Braden, does mommy like wine?

S3: Yeah, 100%.

SHAWN STEVENSON: Do I?

S3: No.

SHAWN STEVENSON: Alright. So I'm not a drinker and I'm curious where I can find some of these benefits. And you mentioned apple cider vinegar. Can you talk about that a little bit?

DR. STEVEN GUNDRY: Yeah. So vinegars, vinegars have a short chain fatty acid that most of them have acetic acid acetate, some have maleic acid, acid malate, which are really important precursors for making the most important short-chain fat acid butyrate. And you've gotta have these precursors. It's something that we just didn't get. So when people say, "Oh, apple cider vinegar is good for you and make sure you have the mother," well, guess what? The mother is, the mother are the dead bacteria and they're carrying information. So anytime you can add vinegar to something, do yourself a favor and do it. Fun study.

DR. STEVEN GUNDRY: There've been two studies looking at women who drink champagne in France, of course. And women who drink champagne have better vascular health and better

brain health than women who don't drink champagne. But it gets better than that women who drink vintage champagne. Vintage champagne is a certain year and it has to sit on what's called the Lees, which is all the dead stuff for a minimum of six years. Regular champagne has to sit for two years to be considered champagne.

DR. STEVEN GUNDRY: So what's really interesting is they do better by drinking vintage champagne, which has had another four or five years of exposure to this information from dead yeast, from dead bacteria that actually improves their health. Speaking of dead, years ago, there was a brewer's yeast factory that they noticed that the people who worked in the factory seemed to never get colds, never get flu. And in the rest of the town people did. And they're going, "Well, that's weird. Why? Why is that?"

DR. STEVEN GUNDRY: So they said, "What's gotta be something, you know, in the air, in the factory?" And they realized it was a dead yeast, *Saccharomyces boulardii*, that just the dead yeast was actually dramatically affecting the immune system. Improving the immune system. And just this week there's been a study out giving this particular yeast to people with MS and a placebo controlled study and dramatic improvement in MS from this dead yeast. And so they're carrying information. So dead bacteria and yeast tell tales that we can't read, but clearly our immune system can read and the microbiome can read, it's really exciting.

SHAWN STEVENSON: Yeah, this is...its fascinating, fascinating. Alright, so we've dug into food a little bit and you go into obviously so much more detail in the book. Are there any other lifestyle factors for us to pay attention to if we're looking to improve the diversity of our microbiome and just improve our gut health overall.

DR. STEVEN GUNDRY: You wanna get into the rabbit hole of Neu5Gc?

SHAWN STEVENSON: Bring it on.

DR. STEVEN GUNDRY: Alright. So I kind of end the first part of the book with a chapter called Plant Paradox 2.0. So it's been almost seven years since I wrote The Plant Paradox. And one of the controversial things in the Plant Paradox was there's a sugar molecule that lines the lining

of our gut lines, the lining of our blood vessels, that lines our blood-brain barrier that lines our joints. That's called Neu5Ac, capital A. Cows, pigs, sheep have a very similar sugar molecule in their bodies called Neu5G, capital G, c. Those molecules are identical except for one oxygen molecule, that's the only difference. Here's the bad news. When we eat Neu5Gc containing foods and milk, by the way has Neu5Gc, we make antibodies to it as if it as a foreign compound and we make aggressive antibodies to it.

DR. STEVEN GUNDRY: We hate it, okay? And we can take human volunteers and have you eat some Neu5Gc contained food and within hours you'll have major antibodies to Neu5Gc. Why was I so interested in that? Well, as a transplant surgeon and as a xenotransplant surgeon, we fiddled with using pigs as a transplant for humans. Makes sense? And you've heard recently of two of these attempts, we failed every time because we discovered this molecule on the blood vessels of pigs. Neu5Gc and our immune system went after it just with a vengeance. In fact, you would clot the pig's heart in a couple hours. Just it was that aggressive. These transplants have been bred to have Neu5Ac our antibody, I mean our sugar molecule. Okay? So this is a bad actor. Now. So what well, since we make antibodies to Neu5Gc and Neu5Ac is so similar that the theory was that we attack our own sugar molecule in molecular mimicry. And that would explain there's a strong association between red meat eating and heart disease, arthritis, dementia, and cancer, very strong.

DR. STEVEN GUNDRY: Now, association does not mean causation first to admit it, but what's new in this book is we now know that Neu5Gc, this bad sugar molecule, can replace the Neu5Ac that lines our blood vessels, our joints, our blood-brain barrier, Neu5Gc, even animals who have Neu5Gc will not let Neu5Gc into their brain because it creates Neuroinflammation. And if you put Neu5Gc into the brain, you get massive Neuroinflammation. So what happens now is that since we make antibodies to this, we now realize that we're attacking Neu5Gc that's incorporated into our blood vessels, into our joints, into our blood-brain barrier. And cancer cells use Neu5Gc to actually stimulate the immune system to cause inflammation, and they love inflammation. It keeps actually them safe. Now what do we do about that? The bad news is the more Neu5Gc foods you eat, the more you'll make Neu5Gc in all these spots. And the more we'll attack it, the good news is the more we eat Neu5Ac foods and those are present in chicken and fish and shellfish, you'll displace the Neu5Gc out and you'll put Neu5Ac

back in, so that's the good news. But what about all these super old people in Sardinia and Crete and they're eating sausages.

DR. STEVEN GUNDRY: In fact, the longest living people in the world are, in a country called Andorra, which is high in the Pyrenees mountains between Spain and France. These people have a life expectancy of 90 years. They're the longest life expectancy in the world. What do they live on? Sheep cheese and sausages. And you go, "Well that doesn't sound like a good idea." Well, it turns out that bacteria love sugar molecules and Neu5Gc happens to be a delicious sugar molecule. So these traditional people always ferment their sausages. Cheeses are always fermented. And the good news is there is no Neu5Gc in traditional fermented sausages and cheeses. So that explains why all these Europeans are having the charcuterie board with all these salamis and sausages and cheeses, and they're actually getting a benefit and they're not being harmed by the Neu5Gc because it's been eaten. So you can kind of have your cake and eat it too. So get yourself, them traditionally made sausages, from Italy or France or Portugal, don't buy ours. We don't do that process and use traditional cheeses like Parmesan or Pecorino and it's all in the book. So buy or beware. So the sad thing is like I conclude that chapter, your grass fed, grass finished beef on your whole wheat bun is probably killing you.

SHAWN STEVENSON: Why, Dr. G? Why do you got to create controversy?

DR. STEVEN GUNDRY: 'Cause it's, in my nature. And if the liver man is watching, the liver has the highest amount of Neu5Gc of any food.

SHAWN STEVENSON: The liver man.

DR. STEVEN GUNDRY: The liver man.

SHAWN STEVENSON: Now, I've got to ask you about this as well. Does this speak to just talking about some of these long lived cultures and folks who are still we have kind of hunter gatherer versions of folks around today. But civilizations like the Native Americans and their relationship with the buffalo and all these things. Could that greatly comparative to our

health today, reduced onset of things like heart disease and all these neurodegenerative conditions. Could it be that the health of their microbiome was so much more robust? And this is why we don't see that same correlation with these folks.

DR. STEVEN GUNDRY: Yeah. The other thing that's interesting is that the microbiome is more than happy to eat Neu5Gc. But that microbiome is basically down in our colon. And Neu5Gc is absorbed in the small intestine. So it gets absorbed before the microbiome get to it but you bring up a very good point. If we actually ate food the way they were traditionally prepared long ago, first of all, we would have aged our beef. And if you think about it, I grew up in Omaha, Nebraska. And aged steaks were hanging everywhere. And there was mold on them, and there was... And it turns out the aging was actually fermenting the beef, and so there wasn't any Neu5Gc. And again, you look at what cultures do. The Indians made... They couldn't eat that many buffalo right away. So they had to preserve the meat. So they pounded berries in it and then let it dry and rot. So it fermented naturally. And so there were always, they didn't know it, but those were the only ways food could be kept. And these cultures that don't eat a lot of meat, these long-lived societies, they're eating the whole hog.

DR. STEVEN GUNDRY: There's an expression in one of my books, for a year I feed the pig and then for a year the pig feeds me, and that's a good deal. But the pig had to be preserved by fermentation, by grinding it up and putting it in sausages. And it took away the harm. I mean, it's really cool how people, cultures have always figured out how to detoxify things that were meant to kill them.

SHAWN STEVENSON: And this information was passed down until recently. We're like, fuck it, give me a Twinkie. It's just so crazy. And the solutions are so much more simple, but it's just a shift in our culture. And we can start that within our own household. And you've got the blueprint for us in Gut Check on so many of these different inputs. Because that's what it's really about is exposing ourselves to certain inputs. Food is information. Our environment is information. And also doing our best to avoid other inputs that create derangement. And again, it's a really special gift. You're a phenomenal writer and communicator, obviously, and just somebody who's been a continuous source of inspiration for me. Can you let folks know where to pick up Gut Check and just where to connect with you in general?

DR. STEVEN GUNDRY: Well, wherever books are sold, please, please, please. If the COVID epidemic taught us anything, it's help Out Your local bookseller, they're making a comeback, but they were dead in the water. But Amazon, Barnes & Noble, Target. But find your local bookseller. It'll be there, I promise, you can find me at drgundry.com. You can find me at gundrymd.com. My supplement and food company. The Dr. Gundry Podcast, which we've recently welcomed Shawn again to have my two YouTube channels. And hopefully, if you're scrolling the Internet, I pop up waving at you every day, I hope.

SHAWN STEVENSON: You do, you follow us, I love it. And you're somebody, truly, you're so shareable for folks who have questions. Our family members, like being able to send one of your videos is such a valuable gift. So I highly encourage everybody to make sure they're following you. Definitely check out your YouTube channel. And most importantly, pick up a copy of Gut Check today.

DR. STEVEN GUNDRY: Thank you. I appreciate it.

SHAWN STEVENSON: Dr. Gundry, thank you for coming to hang out.

DR. STEVEN GUNDRY: Thanks. Good to see you again.

SHAWN STEVENSON: Dr. Steven Gundry, everybody. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. And if you haven't done so already, pop over to the YouTube channel, The Model Health Show on YouTube. And subscribe over there because we're doing some exclusive content. And of course, you can check out the video version of these episodes. And hang out in the studio at Model Health Studios with these incredible guests. And of course, when I'm doing these master classes, you can see all the visuals that we do along with these episodes, it just creates a really multimedia vibe and experience for learning and for empowerment and also for fun. And listen, we've got some epic master classes and world-class guests coming your way very, very soon. So make sure to stay tuned. Take care. Have an amazing day. And I'll talk with you soon.

SHAWN STEVENSON: And for more after the show, make sure to head over to themodelhealthshow.com. That's where you can find all of the show notes. You can find transcriptions, videos for each episode. And if you've got a comment, you can leave me a comment there as well, and please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome, and I appreciate that so much and take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.