

THE MODEL HEALTH SHOW

EPISODE 577

Super Gut: The Truth About SIBO, Endotoxemia, & Skyrocketing Chronic Diseases

With Guest Dr. William Davis

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SHAWN STEVENSON: Welcome to The Model Health Show this is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today, what happens in the gut does not stay in the gut. This is something we're learning about more and more today, that our health truly is... Many of our health outcomes our picturing of skin issues, of blood sugar issues, of joint issues, the list goes on and on and on, are highly connected to what's happening with our microbiome. The health of our gut is of the utmost importance, and on this episode, we're going to dive in with one of the experts in this field and talk about what it takes to have a super gut, and as you'll see today, we have the opposite, the average person today is experiencing a long list of hidden health issues related to gut health that you're going to find out about today. So again, we might have out-picturing of symptoms like rosacea, of arthritis, of blood sugar, dysregulation of obesity, and not really be looking at the underlying cause, which according to a study published in the Annals of the New York Academy of Sciences, for example, has found that inflammation in the gut can create inflammation in our brain, something that they dubbed hypothalamic inflammation specifically and hypothalamus is a master regulator of your metabolism of your entire body is known as a master gland that's taking a presidential role over your other glands.

So, thyroid has to check in with the big eye upstairs the hypothalamus adrenals, big eye upstairs, hypothalamus, the hypothalamus is of the utmost importance, but who's talking about the fact that your brain and your metabolism can get thrown off because of inflammation happening elsewhere in your body, namely what's happening in your gut. So again, this is going to be packed with so many powerful insights, game-changing ideas and tips and strategies and things for us to start to literally just even starting out growing better humans, because we're even going to talk about how a lot of this is beginning from the moment that we arrive here on the planet, and again, this is one of the foremost experts in this topic and also one of my favorite teachers of all time. So really pumped about this, but we've got to address this from multiple dimensions, obviously, our nutrition is paramount, and with talking about gut health, because that's what we're feeding our microbes, whether it's the good stuff or the not so good stuff, but other lifestyle factors and environmental factors heavily influence what's happening with our microbiome.

We've talked about this on many episodes of The Model Health Show whether it's stress, whether it's sleep deprivation, whether it's environmental toxins, these toxicants, the list goes on and on our exercise habits, we've got sound signs on how exercise influences the health of our microbes, and with all of that, still one of the things that has the greatest touch point or the most logical touch point for people to improve their microbial health and the health of their gut is through our nutrition, because it's like taking something from the external world

and putting it into our internal environment, so it's more of like a proactive thing that we can see because with stress, damaging our gut health, and people might think about how stress can induce the presence of ulcers, for example, that's kind of a well-known moniker in modern lexicon and science, but we're not truly understanding how something like that takes place because stress is invisible. So stress can create damage to your gut health, but you can't see it, you could see Flaming Hot Cheetos, alright, you can see an avocado, you can see... Fill in the blank, you could see this external food that we put in there, but we don't understand how stress that we're putting into our system is affecting our gut health, and a lot of that, even though it might be environmentally induced, it's still based on our perception.

And our minds are so powerful in crafting the outcomes of our health, and I want to keep putting that empowerment into your hand, but today, more than ever, we got to take back control of our thinking and what we're associating with and our perspective about things, but of course, we want to add to our superhero utility belt with supreme nutrient inputs as well to stack conditions in our favor. One of the things we're going to highlight today a little bit is the necessity of prebiotics, so prebiotics are what our probiotics our friendly flora are required to have in order for them to proliferate, in order for them to stay in place and to help to maintain a healthy bacterial balance, and if we're not providing our bodies with the right types of prebiotic, the microbes that we want are simply not going to stick around, we could take the most fanciest panciest probiotic ever concocted. But if we're not giving these microbes their preferred food source, they can't stick around, it's basically like subjecting them to starvation they're just going to wither away and die, they're going to leave your system, we have to provide the prebiotics for the probiotics to make postbiotics.

So postbiotics these are the vitamins, minerals, nutrients short-chain fatty acids, all the stuff that these microbes the symbiotic relationship make in us for us. So, we need a variety of prebiotics, and I love the fact that today we have these super food concentrates, like the Organifi Green juice because it's a plethora of different types of plant fibers that this is one of the angles that's not talked about enough that helps to support our microbial health and now... Yes, now we actually, as many people know who've been utilizing Organifi, it has this minty goodness, this minty refreshing aspect to it. But I got a little secret for you. Right now, just released, I just got it, is the green juice formula, Crisp Apple, alright, this is taking me back in the day to Jolly Rancher vibes. Alright, now this was the far less healthy version of Shawn Stevenson alright, I was struggling out there but those Jolly Ranchers, all their little treats, those flavor notes, it just is kind of reminiscent of that for me, and something again, to add into our repertoire to provide these nutrients for our kids, and again, in a way that we're getting in these powerful...

And I want to share this with you because I don't mention this enough as well, we mention how inflammation or damage to the gut can create inflammation in the brain, well, what can we do

to supplant this issue, what can we do to help to turn this around? Well, data that was published in PLOS One, the Public Library of Science One, revealed that spirulina, spirulina has a potential to, one, improve neurogenesis in the brain, creating new brain cells and two, reduce neuro-inflammation. Flaming Hot Cheetos do the opposite. They're flaming hot, but now we know that spirulina has the potential to help to reduce brain inflammation. Wow, really, really impressive. And this is one of the hallmark ingredients, we've got Moringa, we've got spirulina, we've got chlorella, we've got ashwagandha, so getting all... This variety of prebiotic fibers in addition to the powerhouse nutrients that are already in the superfood concentrate, so head over there. Check them out right now. Crisp Apple is now available. Go to organifi.com/model. That's O-R-G-A-N-I-F-I dot com forward slash model. Guess what, you get 20% off as well. Alright, go to organifi.com/model for 20% off. Now let's get to the Apple Podcast review of the week.

ITUNES REVIEW: Another five-star review titled “The Gold Standard” by Courtney Renee 41. "I really don't have the words to fully express my gratitude for Shawn and this podcast, I can't imagine the time, effort and care that he pours into each episode, they're so thoughtfully put together and the information is so well sourced, you are an absolute gift to this world Shawn, and from the bottom of my heart, thank you."

SHAWN STEVENSON: Wow, thank you. Thank you, thank you so much. Thank you for taking the time to share your heart over on Apple Podcast, it really does mean a lot, and you just energized me even more, I'm ready to do this. Thank you to everybody who's popping over to Apple Podcast and leaving a review for The Model Health Show, without any further ado, let's get to our special guest and topic of the day. Our guest today is Dr. William Davis, and he's the author of the mega-hit New York Times best-selling book, international best seller, Wheat Belly, and also his remarkable book On Doctors, one of my favorite books of all time in the health space as well, and he's been somebody who's been for a couple of decades now really working behind the scenes to help to educate his patients and the public about real health principles so we can help to remove our existing symptoms by addressing the root causes of our conditions, and now he's shifted his focus and education to everybody with his new book, Super Gut, so let's talk about this important topic with the one and only Dr. William Davis. Let's just be honest. Let's just get it out there for everybody. You're the forefather in this identification of wheat being an issue, like you had the first book to really explode and just make a big impact, and so I want to thank you for that, and you've had a big influence on my thinking as well.

DR. WILLIAM DAVIS: Well, wow, thanks for saying so. I appreciate that.

SHAWN STEVENSON: Yeah, it's totally my honor, and of course, we're just now rekindling things and realizing you lived in the same area that I lived in St. Louis, at the ball Winchester field area.

DR. WILLIAM DAVIS: Yeah, that's crazy.

SHAWN STEVENSON: And also, you went to SLU. Bananas, bananas. So really, really grateful to jump in and talk about this new project that you got here, let me go ahead and whip it out, it took all my strength to lift it because it is so heavy with the information and Bill listen, I'm not exaggerating in the slightest, I couldn't go more than a paragraph and not highlight something. You're one of my favorite writers as well, you know you have a great way with words, and as you know, in conventional science today, what tends to happen is an over complication of very simple principles to try and sound smart, and... Einstein said something, and I'm just going to paraphrase, something along the lines of, if you don't know it well enough, if you can't explain it simply, you don't know it well enough, and so you explain things super simple, but fun and funny as hell.

DR. WILLIAM DAVIS: Well, thank you, Shawn.

SHAWN STEVENSON: And the new book is super... Of course. And the new book is Super Gut: A Four-Week Plan to Reprogram Your Microbiome, restore health and lose weight. Super Gut, I'm a big fan of superheroes and gut health. So, this was perfect for me. So, what was the inspiration behind you doing this book right now?

DR. WILLIAM DAVIS: Oddly, it was stumbling on a conversation, some scientific studies out of Massachusetts Institute of Technology, MIT, and between 2013... And I promise this won't get dry and scientific, Shawn, so between 2013-2017, this cancer group who was looking at the properties of a specific microbe, lactobacillus reuteri R-E-U-T-E-R-I named after the German microbiologist who discovered it in human breast milk in 1962 when they did this series of studies with this microbe looking for anti-cancer effects 'cause there's limited evidence that can eradicate colon cancer cells, but they noticed that the mice developed as they called it, rich luxuriant fur within a week. So, they explored the skin effects and they saw that the animals had healing time from skin wounds cut by 50%, marked acceleration of healing they also saw that the animals tended not to get old, they stayed young, they mated, they played with each other, had rich fur and stayed thin, even if they were given a diet, made them... That would've made them fat... So, there was a youth preserving effect, also a surprising thing was they just said, "Here you go, Isn't this interesting. Do with it what you will."

So, I got that same strain of microbes, it's actually made as a commercial product by a company called Bio Giaia in Sweden, and they sell it as a product called gastrus, G-A-S-T-R-U-S, but the

problem with it is it was intended for infants, so the number of microbes is really low. Kind of trivial for adults, 100 millions of two strains sounds like a lot, but in microbes it's almost nothing. So, I made yogurt, out of it not yogurt in the conventional sense, it's not really yogurt because the FDA has strict rules regulations on what you can call yogurt, really I'm not selling anything, so I call it yogurt 'cause it looks and smells like yogurt, but it's not yogurt... But it's a way to amplify bacterial counts, and when you make the yogurt the way, that I learn how to do this we use prolonged fermentation, Shawn, if you go to the grocery store and you buy commercial yogurt, they allowed it to ferment, that's how you... Microbes double, allowed to ferment for four hours. Well, reuteri doubles, there's no mommy and daddy microbes, of course, they have something called asexual reproduction, one becomes two, two becomes four... Well, Reuteri doubles every three hours, so if you ferment in a factory for four hours and that's what they typically do, you've got nothing.

So, I fermented for 36 hours. Allowed the microbes double 12 times. Do you remember the kids Riddle, which would you rather have a million dollars or a penny that doubles every day for 30 days? And you saw this in the book, of course. Well, kids were always picking a million dollars, not recognizing that that penny becomes over five and a half million dollars. Same kind of thing here. If you allow the microbe, to double over and over, over, in this case, 12 times you get about 250 billion, so a thousand-fold more than the original tablets. So, me, I started consuming this and hundreds, now thousands of people started consuming it, and Shawn all the stuff we saw, that was seen by the MIT group in mice played out in humans. I'm a chronic insomniac, I now sleep straight through nine hours, I gained 13 pounds of muscle in three weeks at age 63 at the time, ladies love it because they get smoother skin from explosion and dermal collagen, and interestingly, so we know from those elegant studies that a lot of the effects are because reuteri takes up residence in your upper GI tract which is kind of unusual, also sends a signal for the vagus nerve to the hypothalamus to release the hormone oxytocin.

So, I bet a lot of your listeners know that oxytocin is a hormone of love and empathy, and that's what happens, people say, "I like my spouse better, it's rekindled my love, I like my children better, they're less annoying, I like my co-workers better." And one of my favorites, "I see other people's points of view better." And so, we have this, but it got me thinking, if this one microbe Shawn can do all that, and by the way, one of the reasons why it works so spectacularly is because almost all of us have lost this microbe. So, when Dr. Reuter first found it in breast milk, he had no problem finding it in stool breast milk, etcetera. He found over his ensuing 30 years of his career, it was increasingly difficult to find, and then towards the end of his career, he passed recently, he couldn't find it... Almost hardly at all. And that's been true in other studies as well, you can't find it anymore, because it's so susceptible to common antibiotics like amoxicillin or ampicillin, so people have lost it, we restore it and we get all these incredible effects, but that led me to believe, well, gee, that's one microbe Shawn, what about a whole bunch of other microbe? And that's what Super Gut became about. Let's find those microbes.

Let's replace them. In this case, let's ferment them, it doesn't have to be dairy, it could be other things too, but we ferment at very high counts, and you get these extraordinary effects.

SHAWN STEVENSON: Wow, this is incredible, and there's so much to unpack here as well. So, I want to start with, how did we get in this state in the first place, because as you mentioned, a lot of these microbes are becoming... They're on the endangered species list, we'll put it like that, and some have become extinct from the human microbiome and you...

DR. WILLIAM DAVIS: I wish I thought of that, I'm going to use that, Shawn.

SHAWN STEVENSON: You're welcome, you're welcome. We've talked about so many different, so many paralleling things in our most recent books, and one of the things we'll talk about, of course, is our lack of compassion and empathy, and this increased divisiveness... Epidemic divisiveness that we're seeing right now, we're not talking about the underlying real issues of this, which is being physically and mentally able to invoke those capacities, like everybody has a capacity to do it, but it's harder when you're not well, so we're going to talk about that. But how did we get into this state, you talk about it, you say, you call it a Franken belly. How did we get into this state to where we're missing so many of these important microbes?

DR. WILLIAM DAVIS: You know, sadly, Shawn it is a long list, but it starts with over exposure to antibiotics, those of us who are 40 years, by the time most people reach age 40, the average person has taken 30 courses of antibiotics, there's a huge... And even the CDC tells us that about half of those are inappropriate, unnecessary, so that's one big factor, but then there's a whole long list of other factors that are disruptive, other drugs, like stomach acid blocking drugs, when you remove the acid barrier in the stomach, stool microbes, stool microbes Shawn, ascend from the colon into your small bowel. Other drug statin cholesterol drugs disrupt the microbiome, emulsifying agents, like polysorbate 80 and peanut butter, salad dressings, and ice cream, ice cream is a terrible product for these emulsifying agents, the synthetic sweeteners like aspartame Sucralose in diet colas, they disrupt the microbiome chlorinated drinking water, stress. Glyphosate, glyphosates and herbicides, the active ingredient in Roundup, but it's also an antibiotic, very potent antibiotic. Herbicide, pesticide residues in food. In other words, it's virtually impossible now to avoid the many factors in modern life that introduced changes in the microbiome composition, and of course, one of the consequences along with reuteri, we've lost hundreds of species that... And many of which, maybe not all, but many of which performed important functions for humans.

SHAWN STEVENSON: So, how do we know that we've lost all of these microbes? Are we looking at old mummy, mummified microbiomes? How do we know this?

DR. WILLIAM DAVIS: It comes from indirect studies. There is some data from the '60s and '70s of the presence of microbes. They used culture methods, and right now, no one uses culture methods for these purposes, we use DNA methods, and it's opened up a whole new world... A universe of microbes, but it's clear that a lot of the microbes, like the reuteri, that were culturable back in the '60s and '70s, are now lacking, are now gone. That's indirect evidence. Another piece of evidence is comparing our microbiomes to the microbiomes of the few remaining indigenous populations, like the Yanomami in the Brazilian rainforest, the Matsés in Peru, the Malawi in Eastern Africa, the Maasai in Kenya, the Hadza in Tanzania, the Māori in New Zealand, some of the isolated tribes in New Guinea... Well, what their microbiomes have been sequenced, lo and behold, they have far more bacteria than we have. They have many species we lack, and by the way, we also have a few species they don't have.

Now, does that mean that you and I should have a microbiome of a primitive... Of an indigenous... It's not clear just how far we take that, but it is clear... Now, the odd thing about all those studies of the indigenous microbiomes is that while they're very different from us, they all resemble each other very closely, almost complete duplication, even though these populations are living on different continents, and of course, had no contact with each other, so that's interpreted by the microbiology community to mean that that must be the so-called Stone Age microbiome representing the stuff that humans had before all modern factors entered the picture.

SHAWN STEVENSON: Wow. I want to circle back a little bit to how we got into this place where we have these Franken bellies for the average Westerners especially, and you mentioned glyphosate and also pesticides, herbicides, rodenticides, all of these chemicals that are now commonplace... Our food is grown with them, it's just like we think we can wash off our apple and not understanding that it is built into the matrix of these things, specifically with a topic that you really brought to the forefront, which is wheat, and also understanding the wheat that we're eating today is not the biblical picture of wheat. It's this genetically modified dwarf wheat that you really highlighted, but also these chemicals are necessary, like, I don't think this stuff can even survive without these chemicals. Can you talk a little bit about that? Because I think that's one of the biggest issues with our gut health today, because it's a big part of the average American's diet.

DR. WILLIAM DAVIS: You're exactly right, Shawn. A lot of modern crops grown in large scale, so-called monocultures, can't grow without human input of fertilizers, herbicides, pesticides, of course, genetically modified corn and soy, which is virtually all corn and soy now, needs glyphosate and BT toxin, that those are instilled into the plant. And so, it obliges the farmer to spray the stink out of his corn with glyphosate, and so that's a sad thing because virtually all of us now have glyphosate residues detectable in our skin, hair, urine, blood... It's in the water, it's in the air. It's everywhere, and so it's becoming increasingly difficult.

So, I wish there was a way for you and I to somehow shield ourselves from all these things, but it's a work in progress. We don't know how to get rid of these things, and if we did have... Of course, we do all have, detectable levels of glyphosate, how do you get rid of it? By the way, there's emerging science, there may be a microbe that digests glyphosate and turns it into benign metabolites, so that is one of the really interesting, though very early, areas of microbiome research that microbes can consume glyphosate, combined cadmium and mercury and you poop it out... So, there may be... 'Cause we have no real solutions for these horrible societal problems, but there may be some emerging solutions from the microbiome where you could just get this or that microbe, and maybe that would be... So that's, it's preliminary, but it could be very interesting.

SHAWN STEVENSON: Wow, life finds a way you know, and this is the thing, too. We understand that the human body is incredibly resilient and it's always finding creative ways to adapt. Even the manifestation, what we term a disease, is an adaptation by the human body to function under abnormal conditions. Even with the epidemic of type 2 diabetes, it's not that this particular issue, like your body is trying to take you out. Your body is adapting to keep you alive and to perform under un-ideal conditions, which in this case, of course, is abnormal blood sugar just being bombarded and the body trying to sort that out. And so, looking at it through that lens, and then we start to understand, yes, life finds a way. Our microbiome could be the solution to dealing with the environmental inputs that are so...

We are so immersed in abnormal environmental conditions, but we think we're so evolved, but it's only been a few decades that we've been living like this, and so... It's very encouraging, but at the same time, we don't have to make things harder for ourselves, and so, I want to ask you about this because a lot of the issues that we see on the surface, from a conventional medical perspective, whether it's rosacea, whether it's migraines, whether it's... The list goes on and on and on, all these issues that are at epidemic proportions, asthma, allergies, diabetes. Many of these conditions now, we've got really, really sound data links back to our gut health. So, could you talk a little bit about this? Because I think that we tend to still in our society think gut health just means like belly ache, my belly's hurting, not understanding that we can have outward symptoms, ranging of a whole different list of things that are occurring today that are traced back to damage to our gut.

DR. WILLIAM DAVIS: Absolutely, Shawn. So, like we mentioned, we've lost hundreds of microbes like reuteri and many others, now they were good for us, they kind of acted as a police cop, as traffic cops in your GI tract, but when you lose them, chaos ensues. And one of the odd things is that microbes in the colon these are stool microbes like E. Coli and Klebsiella and Citrobacter proliferate, they're allowed to proliferate when all those good guys have gone, and then they ascend up into the ileum jejunum duodenum and stomach, so that you have 24

additional feet of microbes, many of them stool microbes. So, I call this the fecalization of America. And I call it that because I was talking to some radiologist friends, and they remarked that when they do a CT scan of the abdomen with oral contrast, so they can see the inner contours of the bowel, in the last few years, they've seen an explosion, including in young people of what's called fecalization of the small bowel, that is feces in the colon, has a very characteristic appearance on a CT scan, they're now seeing it way up in the small bowel fecalization, and that's what's happened.

Fecal microbes and other bad guys have ascended so that it all adds up, Shawn to 30 feet of unhealthy microbes. Now, these guys don't live for decades, they live for hours to days at most, so there's a rapid turnover of trillions of microbes, well, when they die, they release their breakdown products, the debris, some of which enters the blood stream. Now, a lot of integrative health and functional medicine doctors for years have been talking about gut leak. Well, it's finally been validated scientifically, but it's called endotoxemia, and that is so a 30 feet trillions of microbes, rapid turnover, some of their breakdown products enter the blood stream. But that tells us now with confidence how the microbes in the GI tract can export their effects, say, to the skin as rosacea or psoriasis or eczema, or to joints as a fibromyalgia or rheumatoid arthritis or to the brain as depression. That's a big one, Shawn. Or Alzheimer's dementia or Parkinson's disease, or to the prostate or to the breast tissue. In other words, every organ is influenced by this bacterial process called endotoxemia, and it's so broad and it has powerful effect that it means that virtually, all modern diseases have to be re-examined in light of this phenomenon.

SHAWN STEVENSON: This is nucking futs this is... It's such a big issue. And I love that you highlighted this very early in the book, you talk about, we have so much what appears to be on the surface, unprecedented medical advancements, but yet we're seeing simultaneously the greatest epidemics of chronic diseases ever recorded in human history. And part of this is something you talk about, unfortunately, the medical community is poorly equipped to handle the ailments resulting from a disturbed microbiome, and never mind understanding their source, and that's a direct quote from the book. And so again, what happens when somebody's coming in with... We'll just say, asthma or eczema, like my sister, my little brother and I had asthma, my little sister had eczema. We're coming in, they're thinking, nothing about our microbiome. Treat the symptom, take this inhaler, or put this cream on your rash that never goes away. Can you talk about what people are experiencing versus what we need to be looking at?

DR. WILLIAM DAVIS: Shawn, you hit it right on the head. So, if you have, for instance, fibromyalgia, it hurts just to move. You can't ride your bike. Can't do the laundry. Can't wash the dishes. That's a problem. So, what does the doctor do? Well, he's got a drug, it could be very expensive too, could cost you thousands of dollars a month to block a step in the

inflammatory pathway, like TNF-alpha. Well, if that fibromyalgia was caused by disrupted microbiome, when you block that pathway, you've done nothing for the disrupted microbiome, and that disrupted microbiome that's not corrected will lead over time to autoimmune diseases, ulcerative colitis, Crohn's disease, irritable bowel syndrome, neurological impairment, in other words it has... Colon cancer, diverticular disease. So not addressing the cause leaves you open to all kinds of health... And as you point out, that's what's happening, this is exactly what's playing out in the big world that people are developing three, four, seven, eight health conditions, and the doctor has a collection of drugs for each and every one of them. But never once, and you see it, but my colleagues typically don't see it, they don't see the cause, but if you address the cause, all kinds of great stuff happen.

You can break weight loss plateaus, you can reverse fatty liver, you can get rid of rheumatoid arthritis or polymyalgia rheumatic or fibromyalgia. You can impact neurodegenerative conditions, big effect on depression by the way, and anxiety. So, you can have all kinds of spectacular results and because it takes doctors mainstream doctors, I'm generalizing, of course, there are some very excellent chiropractors and functional medicine doctors, but the mainstream MDs typically takes them up to 20 years to catch up. Well, if you've got ulcerative colitis and psoriasis, you don't have 20 years.

SHAWN STEVENSON: Yeah, people, they're in suffering. And that's the thing, too. And you know this too... We just want to get out of pain, and oftentimes we'll do whatever it takes, whatever... Especially if somebody's in a position of authority and trust, we'll just do what they say because we want to get a solution, and what tends to happen, of course, we get into that virtual hamster wheel where we are not addressing the root cause and continuing to treat these symptoms, and then something else pops over here, and I really feel that's just the intelligence of the body. Not addressing the thing is just going to manifest... It's kind of like trying to plug up a hole in a boat, and then another hole pops up and you keep plugging them up instead of getting rid of the villain who's under the boat, poking the holes in it. If that makes sense.

DR. WILLIAM DAVIS: Good analogy, Shawn. Yeah.

SHAWN STEVENSON: I'm thinking about this, I was literally picturing like a chipmunk scenario, Chip and Dale and Donald Duck. Alright, that's what I was picturing. And I was picturing that because of your book, and you mentioned something that a lot of folks don't mention, which is, and I know you're like, "Where the hell is he going with this, Chip and Dale?" So, you mentioned that every single creature on planet Earth has their own unique microbiome. Talk a little bit about that.

DR. WILLIAM DAVIS: Yeah so, these are adaptations. If you're a squirrel, you can climb trees a lot better than we can, 'cause we're not equipped to climb trees. So likewise, microbiome, the microbiome is crafted evolutionarily to adapt you to specific circumstances, and unfortunately, we've impacted our microbiome in very maladaptive ways, and that's why we're seeing an explosion of disease. The issue is people often don't recognize, including doctors, don't recognize common conditions as an expression of a disrupted microbiome. They might not recognize, for instance, that their depression, unresponsive to the SSRI drugs, they don't recognize that's a microbiome issue, via endotoxemia. They might not recognize that their bad hip is really a problem with the microbiome, or their enlarged prostate, or their recurrent urinary tract infections or vaginitis, or their migraine headaches. In other words, I really mean this, Shawn, we have to re-examine everything in light of what's been going on in the human microbiome.

SHAWN STEVENSON: Absolutely, absolutely. So again, whether it's a squirrel, whether it's a chipmunk, whether it's a spider, and even... This was the first time, Bill, that I really thought about, insects have their own unique microbiome, and each one of those insects, the trillions and trillions and trillions of insects across the planet have their own version of their microbiome is slightly different because it's unique. Just like us, there are no two humans ever in the history of humanity, even... I even mentioned this in my latest book as well... Identical twins, looking at their microbiomes, a lot of the work was actually done in St. Louis, so coming out of slew, great database of identical twins and looking at their different health outcomes from different environmental inputs, but one of those big things is, it's kind of like a fingerprint. You have a unique microbial fingerprint, each and every one of us. And so, it's really remarkable. But at the same time, we can understand, you talked about this earlier, whether it's a culture here we've got in Kenya or the Hadza or whatever it might be, they actually have... Who's living more of an indigenous... Closer to their indigenous roots.

Their microbiomes are strangely similar, even if they're across the world on the other side of the planet, versus the modern American, which, one of the things I saw back in the day, I think it was out of Stanford, but we're seeing four times more microbial diversity, four to 10 times more in somebody who is living more of a "hunter/gatherer" type protocol. So it's very strange how we're kind of devolving in a sense, but as you mentioned earlier, alluding to life finds a way, and I want to ask you about this specifically, and to dig in a little more here, because it's so prevalent, and yet, this is our opportunity right now to put this front of mind for everybody listening and watching, which is these epidemics of SIBO and SIFO as well. Can you talk about those?

DR. WILLIAM DAVIS: Yeah, so as we lose these healthy microbes and we have proliferation of unhealthy, mostly stool species, the 30 feet that's called, that's exactly right, small intestinal bacterial overgrowth. A parallel situation can also merge with fungal species like candida

albicans, candida glabrata and candida tropicalis, likewise. Just... All it takes is too many margaritas on your all-inclusive vacation for three days, and it gives you irritable bowel syndrome, fungal overgrowth, and so these things are everywhere. You know, I did a simple exercise, Shawn, I just went back to all the studies, studies like this, what proportion of people with irritable bowel syndrome have SIBO? There's a way to test that you can test for hydrogen gas in the breath, 'cause microbes produce hydrogen gas. Well, of the 60 to 70 million people in the US with irritable bowel syndrome, it varies from study to study, but on average, about 44% have SIBOs. That alone is about 20 to 30 million people. If 50% of people with obesity have SIBO, that's another 15 or 20 million people. The people with fatty liver, at least 50% have SIBO, and that's another 75 million. Well, there's overlap among these groups, you know a overweight type 2 diabetic with fatty liver, but when you add up the numbers, you'll see that we easily, easily and conservatively can estimate that over 100 million Americans have this problem called SIBO.

And, Shawn, I was very skeptical at first, I thought, "No, that's an unusual thing." But one of the things that happened beyond those studies is there's a new consumer device called the AIRE device, A-I-R-E... I have no relationship with the company, except that the inventor, Dr. Angus Short, is now a friend, and he invented this for his fiancée, then fiancée, now wife, because she had irritable bowel syndrome and was told going a low FODMAPs diet, a low fiber low sugar diet, because there's evidence to suggest people have less bloating and diarrhea when they do that. Well, he saw how tough it was for her and how much she suffered when she slipped up, so he invented this little device, the AIRE device, and it registers hydrogen gas as... He thought as a reflection of undigested fibers and sugars, and he releases the device around 2018-2019, I get a hold of it, and I called him up, I said, "Angus, that's not what this is. This is a mapping device, it shows you, if you use it the right way, it shows you where in the GI tract microbes you are living, so it tells you whether you have these 30 feet of microbe issue, the SIBO," not SIFO unfortunately, there's no such a consumer device for fungal overgrowth yet.

But I talked about this and then hundreds, now thousands of people, and it's in the Super Gut book too, are using this device and lo and behold Shawn, it's everywhere. Now, you might say, well, maybe the technology or the device is flawed, except that people will test positive, zero to 10, 10 is terrible, and they take some step to eradicate the SIBO. And we can talk about that too, 'cause I think there's a new way to do that. And then they test maybe 1.2 normal level, and they say, "You know what, I got rid of the hydrogen gas in my breath by the air device, and my depression finally lifted, my weight loss plateau finally broke. My hemoglobin A1C, that was stuck finally dropped to ideal or normal, my migraine headaches finally went away, my joint pain finally went away," in other words, we're seeing a spectacular health effect, we're seeing people lose their food intolerances, Shawn, all those people who would say, "Oh, I can't eat FODMAPs, can't eat nightshades, can't eat histamine-containing foods, can't eat fruit, can't eat legumes," all that stuff goes away in the vast majority of people, they say, "For the first time in

years, I can eat tomatoes and not get joint pain, asthma, leg swelling, depression, anxiety," etcetera.

So, all that's going away. Now, the difficulty is how do you get there, how do you correct this SIBO issue? Well, conventional thinking, you should take an antibiotic, which I'm a little reluctant to suggest because antibiotics got us here, but there is an antibiotic called Rifaximin or Xifaxan. It's not very effective. It's about maybe 40, 50 percent effective, and I think that's an exaggeration. It's probable more like 25% effective. Very expensive, not covered by insurance. And of course, the gastroenterologist, if he or she even knows what SIBO is won't tell you how you got it, won't tell you how to increase the efficacy, won't tell you how to prevent the common recurrences. There are herbal antibiotic regimens, only two of which have had evidence for efficacy, the CandiBactin, and the FC style disbiosite regimen. This is all in the Super Gut book. But I asked a bunch of different questions, Shawn. I asked, well, if you take a conventional commercial probiotic for SIBO, will it get rid of the SIBO? No, it might reduce bloating a little bit or maybe reduce diarrhea, but it won't get rid the 30 feet of over-proliferated stool microbes.

So, I asked different questions, I asked, what if we chose species that colonize the upper GI tract, that's where SIBO occurs, what if we chose microbes that produced what are called bacteriocins, these are natural antibiotics that some microbes produce effective against stool microbes. So, I chose three, a strain of lactobacillus gasseri, colonizing upper GI tract, bacteria is a powerhouse Shawn, up to seven bacteriocins, our good friend, reuteri, lactobacillus reuteri, colonize the upper GI tract produces up to four very potent bacteriocins and another one, bacillus coagulans only produces one, but there's good evidence. It reduces irritable bowel syndrome symptoms, irritable bowel is essentially synonymous with SIBO, we make a yogurt prolong fermentation for really big microbial counts, consume a half cup per day, now I'm crossing my fingers Shawn, so far about 30 people who've done this have normalized their breath hydrogen gas using yogurt.

So, we will look at this more formally in a clinical trial down the road, we can't do it as yogurt in a clinical trial it's got to be an encapsulated probiotic, but I think we've stumbled on a way to eradicate SIBO using a much softer method. In this case, making yogurt, you know, if I told you, you needed a frontal lobotomy or a colon removal colectomy, you'd better be damn confident of your evidence, well, what if the solution is yogurt and not the stuff at the store. That's something different. I'm wrongly calling it yogurt, but this, what I call SIBO yogurt, if that's a solution, well that's a very soft friendly solution.

SHAWN STEVENSON: Yeah, you don't say. I mean, man, the alternative, as you mentioned, I've got many friends who are gastroenterologists and award-winning the whole thing, top schools, and they've shared with me consistently that they're simply not taught about these things in

medical school, if they happen to stumble upon it, it's like a miracle. And so, they're literally training to treat the organs responsible for the digestion, assimilation and elimination of food, but they don't know anything about food, they're taught such a... And a matter of fact, the small amount that they might get is misinformation, it's really poor education, based off of principles that don't... Again, like many of our citizens have tried these things, when I went to my conventional college, I was taught about the food pyramid at that time, and it's just not borne out very, very good results, and I could see it, my teacher was not well, you know, I could see it. And so, we have this issue where we have very, very smart people who are trained to do the wrong thing, and so they become very, very good at doing the wrong thing and/or missing the right thing.

And so, this is why your work is so important because it has this way of trickling down and changing culture, like Wheat Belly changed the conversation so much. So, I'm really excited about this because it's just getting this message out in a bigger way. Now, I want to ask you about this because, so you mentioned bacteria that would normally throughout evolution, they would be hanging out in the colon, that's where they live, but they found a way to go upstream to basically try to crawl up the slide... I know there's some kids out there that have tried to go up the slide at the playground, I've definitely done it, but if it's a really great slide, your ass is going to just fall back down side bar anyways, but they're finding a way to go from these conditions to places in our gut where they're not supposed to be, and historically, we've only been able to look, if we have a colonoscopy, for example, a small... We're talking a couple of feet of evaluation and the same from the top down. When you just mentioned, you keep saying it's number 30, we got 30 feet. They're all these feet in between that you're just not getting a peak at. And so, my question is, how are these bacteria able, and I know you've touched on this a little bit, but I want to get specific, able to go from the colon, upstream into places they're simply not supposed to be, and start causing all these problems?

DR. WILLIAM DAVIS: It is pretty amazing when you think about it. These little, microscopic creatures can climb 24 feet. That's like three stories of a building. But some of them are motile. They have, what are called, flagella, little tails, like a tadpole, and they can swim. And so that's one presumed way that they make it up. And probably just by virtue of proliferating these microbes, of course, they proliferate huge numbers very quickly, and so they just by sheer mass can climb up too. But it's not been all that thoroughly charted out, but it is... It is sobering to think that many of us, I think easily one in three, 100 million people in this country alone have this process. And if you don't address it, it's going to get you in trouble long term. And if the solution could be at least a starting solution not a full solution, perhaps long-term. If the starting solution could be something as benign as a specific kind of yogurt with specific microbes in it, I'm crossing my fingers, Shawn, that that remains true.

But one of the most important things that your listeners could do is based on an answer, finally validated by the Sonnenburgs, husband and wife team, Justin and Erica up at Stanford. And they did a very nice study comparing what happens to people who consume a lot of fermented foods, like six, seven, eight servings a day. These are things like sauerkraut, fermented sauerkraut, kimchi, kefir, yogurts, fermented meats, all the things that your grandmother or great-grandmothers ate all the time, and we've forgotten all about because of refrigeration, we think that fermented food are rotten foods, they're not.

Well, they showed that it's fermented foods that hands down, are the thing that really helps restore order in your microbiome. But one of the most interesting things they showed was that... So fermented food, let's say like, kimchi... Kimchi the by the way, is an excellent fermented food, but it has species like *Leuconostoc mesenteroides* or *Pediococcus pentosaceus*, so it's got some really cool, very beneficial microbes. You eat that kimchi, they only stick around for maybe a few hours or days, they don't take up long-term residents. But they somehow, the presence of those fermenting microbes somehow encourages the proliferation of numerous healthy species. It's not quite clear how that happens, are they latent or are you more receptive to them from your dog and surfaces and... Nobody knows, but it is clear that this fermented food that most of us have forgotten about, are very, very powerful ways to rebuild your microbiome.

SHAWN STEVENSON: Wow, so cool, so cool. Got a quick break coming up, we'll be right back.

Our microbiome plays major roles in regulating our metabolism. Literally playing a role in determining how many calories are absorbed from our food, for example. Our microbiome also controls so much about our mood, with the vast majority of our body's serotonin being produced in our gut. And our microbes interact with these enterochromaffin cells and enteroendocrine cells, that produce our hormones and neurotransmitters in our bellies. And one of the biggest issues we're seeing today is gut dysbiosis, where friendly microbes are getting overrun by opportunistic bacteria. One of the few amazing sources of nutrition that's been found clinically to reverse gut dysbiosis, is highlighted in a study published in the Journal of Agricultural and Food Chemistry. It discovered that the traditional fermented tea called, pu-erh, may be able to reverse gut dysbiosis by dramatically reducing ratios of potentially harmful bacteria, and increasing ratios of beneficial bacteria.

Another peer review study, published in the journal Nature Communications, uncovered that a unique compound called theabrownin, found in traditional fermented pu-erh, has remarkable effects on a microbiome as well. And the research has found that, theabrownin positively alters gut microbiota and directly reduces hepatic, aka liver fat, and reduces lipogenesis, which means the creation of fat. Pu-erh is absolutely amazing on so many levels, and it's also a powerful adjunct to any fat loss protocol, because it's been found to support fat loss, while

protecting muscle, at the same time. And this was documented in a recent study featured in Clinical Interventions in Aging.

Now, the key is the source of the pu-erh matters a lot, and the only pu-erh that I drink, uses a patented cold extraction technology. That extracts the bioactive compounds in the tea at cold to low temperatures for up to eight hours, and this process gently extracts natural antioxidants and phytonutrients. And preserves them in a whole bio-available form, and this is the purest way to extract the phytonutrients for maximum efficacy. This pu-erh is also wild harvested, making it even more concentrated in the polyphenols that we see having benefits in those clinical trials. Also, triple toxin screened, for one of the highest levels of purity. Tested for pesticides, heavy metals and toxic molds, and making sure, that is not in your tea, which is common in most other teas. This is why I'm a massive fan of Pique Teas, go to piquetea.com/model, that's P-I-Q-U-E-T-E-A.com forward slash model. And you get 10% off their amazing fermented pu-erh, and all of their other incredible teas. These teas are in a league of their own. Their pu-erh is amazing. I'm a huge fan of their ginger tea as well. Go to piquetea.com/model, again to get 10% off everything that they carry. One of the best investments in your health, supporting your microbiome, supporting your metabolism. It is absolutely amazing. Head over to piquetea.com/model. And now, back to the show.

So, I've got to ask you about this, and this is one of the things that is super important for me personally. Something that I've been contemplating about for years and having an opportunity to talk about and write about, but to see that you're talking about this as well, was just really, it just was the cherry on top of your book. And right now, as I mentioned at the top of the show, we're living at a time of unprecedented divisiveness and unfortunately, again, we all have the capacity to perspective take, to see from somebody else's point of view to listen, but it seems like it's becoming increasingly more difficult for people to just put their own attitudes and beliefs and even anger and vitriol aside and listen to the person on the other side of an idea or perspective. And right now, I don't think that many people are attributing this lack of connection, which ironically again, we're... On paper, we look like the most connected society ever, but in reality, we're more separate than we've ever been, and living virtually and not really connecting, and there's so much even ugliness, just even when you go online, and so you, in this book, you're making the connection to our degradation of health of our microbiome as having a big role behind why people are not emotionally cognitively as able to connect and to listen and to learn and to perspective take with other people. So, can you talk about that a little bit?

DR. WILLIAM DAVIS: Yeah. You know, you're exactly right, Shawn. The composition of your intestinal microbiome is a major determinant of your internal dialogue. Whether your dialogue is one of hope and optimism and understanding or of hate and criticism. And I see this play out with... I don't want to overstate what one microbe... That is *Lactobacillus reuteri*, can do, but I

see just with that one microbe, Shawn, people, as I said, liked their families better, their co-workers better, they introduce themselves to strangers in line for coffee at Starbucks. Even if we disagree on something, they say, "You know what, I don't agree with your opinion, but you know, I understand how you could see that." I mean, a very different kind of approach.

There's a great couple of studies that were done in Germany recently, and I'm shocked that it was done, but... So that the endotoxin, we talked about that microbes' release and get into your bloodstream. Well, it's been known for years that people who don't respond to conventional antidepressants, this question has been asked, "What's different about those people who don't seem to respond to anything and remain depressed, maybe suicidal?" Well, it's been determined that they all have much greater measures of inflammation, C-reactive Protein, IL-6, IL-1 Beta, TNF alpha, all those things. So of course, big pharma says, "Let's give them expensive anti-inflammatory drugs" which of course is stupid. But... So, a German group took that endotoxin from bacteria and injected it into normal non-depressed people, which I always find surprising, 'cause there had been a handful of these kind of studies, 'cause if you miscalculate the dose, you can kill somebody. It's very toxic, this endotoxin. So, they do this, and normal people became profoundly depressed within three hours, and then MRIs of their brain showed all the hallmarks of depression, but it's an illustration, Shawn, of the power of the microbiome. In this case, endotoxemia, to influence what goes on in your head.

SHAWN STEVENSON: That is so crazy. So crazy and powerful. One of the studies kinds of affirming this, this was published in the journal, Aggressive Behavior, which even when I say this, there's journals for everything, and so... But just a lot of people are not spending time thumbing through this stuff, but they were looking at the nutrition profile of prison inmates to see their behavior correlations based on their nutrient intake. And so, they had a Control Group, just kind of doing standard practice, then they had the Study Group, where they're giving additional nutrients to, in the form of Omega 3 supplements, multivitamin, that kind of thing.

And they saw that the folks who were receiving additional nutrition had like a 38% reduction in violent offenses, right. And so of course, this has been replicated. That particular study was based off of a study done by researchers at Oxford. And scientists were just like, "That's not possible. We've implemented all of these different programs to get people to be more... Their behavior change, all this stuff. We've got the best scientists on it; there's no way diet can just do something like that." So, they replicate the study, and essentially the same results. And so, this really boils down to a very simple principle, which is when we are lacking the basic inputs that the human body needs, the human brain needs, just to function, all of a sudden, many different processes are going to be sacrificed.

Your body could give a sh*t about you understanding someone else's perspective, when it's just trying to keep your heart beating normally or just keep some brain cells firing and to keep you safe. And this is why what we see too, parallel with that, less activity in the prefrontal cortex, more activity in the hind brain and more activity in the amygdala, when we're sleep-deprived, when we're nutrient-deprived, when we're having disruption with our microbiome. And so, this all ties together and so what we're trying to do is to create healthy sovereign human beings today, and again, I really appreciate you leading the charge on this. And so, I want to ask you a little bit more about this topic of inflammation.

There's been other terms kicked around, "inflammaging", and just looking at "finally, this is getting some attention" and I think in your book you even use a term like "wildfires", and it just sparked all these different ideas for me, but just these conditions popping up in the body where if you really look at the break down of the word, we're talking about basically the activation of fire, things are getting set aflame inside of our bodies, inside of ourselves. And so, I want to ask you, how can issues like systemic inflammation that you mentioned earlier, being able to measure something like C-reactive protein, how does this resort back or connect to our gut health, how is inflammation part of the, I guess, the soil that inflammation is growing in, have to do with our gut.

DR. WILLIAM DAVIS: So, inflammation in the intestinal wall essentially opens up the normal barriers to stuffing your intestinal tract, especially that endotoxin, it's called lipopolysaccharide or LPS and there's others... Other toxins from bacteria also. So, any level of inflammation in the intestinal lining, such as happens when you have proliferation of stool microbes allows, it opens up the barriers, the so-called tight junctions between intestinal cells and the endotoxin is given free reign into your bloodstream. That's a major... Of course, we have other issues. We have a diet advocated by our own US Department Health Human Services and USDA, that is hugely inflammatory. When you cut fat, saturated fat and eat more healthy whole grains, it is hugely inflammatory because the Gliadin protein of wheat engineered by agribusiness scientists is much more inflammatory than it used to be. The wheat gamma gluten that farmers select... I'm not blaming farmers, they're just trying to make out a living, but they select strains of wheat that are more pest-resistant and have higher levels of wheat gamma gluten, 'cause wheat gamma gluten is this protein that kills pests like insects and some molds and fungi.

So, they selected strains of wheat that are much higher in wheat gamma gluten and well wheat gamma gluten is a very potent biotoxin, and so modern strains of wheat are extremely toxic to the human GI tract. And of course, the amylopectin A component, the super carbohydrate of wheat and grains raises blood higher than table sugar, makes you grow visceral fat. That is the fat around your waist, and that encircles your internal organs that's extremely inflammatory and that furthers the whole process of inflammation in the body and then of

course, modern life is filled with mistakes, like we all wear clothes, and even when we're outside, we wear clothes, it covers a lot of the body surface here, don't get exposed to the sun as much. Or we work indoors, or we're aging and lose the capacity to activate vitamin D in the skin. We drink filtered water 'cause you can't drink from the ocean, lake, river, or stream, it's got garbage in it, it's got sewage, it's got chemicals, farm run-off. So, we filter our water that removes all magnesium. So, we can't save those things also 'cause the lack of those things like Vitamin D, magnesium allows inflammation to develop. And so, we live in a world where there's numerous factors in amplifying, throwing gasoline on this fire of inflammation. Now we have, of course, this very common situation of SIBO, 30 feet of microbes and the free entry of endotoxin into the bloodstream. Huge factor in inflammation.

SHAWN STEVENSON: Alright, one more topic we've got to address is... Because we've talked about some of the current conditions that we are exposed to, but even going back further than that and you... This is one of the few books that highlight this so elegantly, which is we're coming into the world literally when we're born at a huge microbial disadvantage today. And you have different sections in the book and one of them you talk about is formula for failure, is one of the little sub-texts that you have in the book. To say that something is average or normalized is... This is anything but normal. But coming into the world under very unideal conditions for microbial health. Can you talk about that the birth, the birthing process, and especially the issue surrounding breast milk?

DR. WILLIAM DAVIS: Oh, big issues, Shawn you're exactly right. So unfortunately, moms have taken antibiotics themselves, may have taken birth control pills, maybe took ibuprofen for menstrual cramps, so they start. These poor ladies start with a massively disrupted microbiome. They deliver a child vaginally hopefully, so that even if the child gets the vaginal microbiome, it's not... It's an impaired microbiome. And of course, mom is often given antibiotics for her episiotomy, certainly for her C-section, the child is almost always given antibiotics to prevent baby streptococcal infection. And then, of course, children are dispensed antibiotics like crazy. It's... The CDC tells us that over 1300 prescriptions for antibiotics are written for every thousand children every year, and so the child starts at a disadvantage, and of course, if mom chooses not to breastfeed for a... Much time and relies on formula. Formula is not even close. You know formula manufacturers have been trying over the years to mimic the composition of breast milk but they really have lots of things wrong with formula feeding. And though I understand it's very difficult for a modern woman, she's got responsibilities she has other children, she has a job. All kinds of pressure is on her but it... There is a real advantage to breastfeeding.

One of the greatest examples, an illustration of just how wrong things have gone is the loss of by bifidobacterium infantis, a microbe, very, very important to newborns and infants. So, it's estimated that 90% of children now don't have this microbe. When you restore it. There's a

product called Evivo, E-V-I-V-O. The science comes out of UC Davis. I'm sorry, UC yeah Davis, and they showed that restoration of this microbe to a newborn causes the baby to be more likely to sleep for the night, less colic, less fussiness, fewer bowel movements, cuts number of bowel movements in half, I mean an average of four per day to two per day, fewer diaper changes for Mom and Dad, and as an older child, less asthma, less irritable bowel syndrome, less likely to become obese later on and has a higher IQ. So, Shawn, this one microbe has lifelong implications for the health of that person, and that's just one microbe.

Now, the company tells you, of course, that mom should express some breastmilk, mix the probiotic with it and then feed it to the infant. I suggest that think about mom making the yogurt out of it. So, recall that the reason we make yogurt or other fermented food doesn't have big dairy is to increase microbial counts. Well, if mom doesn't have it, she can get high counts by making yogurt out of it before she delivers the child and that way when the baby is passed through birth canal and breast feeds, she's conveying this microbe the way it's supposed to happen. They can still... Mom can still give the baby that probiotic, but it's going to be better when that micro is passed on in the context of mom's microbiome, and mom gets benefits from it too, less inflammation, better mood, less anxiety. So, mom benefits also.

SHAWN STEVENSON: Yeah. The business of being born today, it's a business, and so much has been taken out of the power of parents and of mothers like we're coming into situation... Unfortunately, this conversation isn't being had a lot about how much control you actually have it's looked at as like a medical emergency. Whether it's the TV depictions or just people's experience, instead of looking at, this is a process that humans have literally been doing forever now. Of course, there's room for modern medicine and remarkable interventions to save lives absolutely, but unfortunately, it's been leaned on very heavily and often times as the data indicates it's inappropriate. So, C-sections, now we're looking at about one in three child birth today is via C-section. Until I saw this statistic in your book, I hadn't looked at it in years, I saw that it was going up, but like it blew my mind because what's missing now is one of the most important inoculations or kind of immune system download even, and with the microbial exposure of a child being born vaginally and missing that critical... Like that's the introduction to the world.

And again, not to say, and I want moms that are listening, who've had C-sections, this is not in any form or fashion taking away from that experience you had to do what you had to do at the time, and you are so powerfully and you're a wonderful person, a wonderful mom, but you have power now to do some of these things to give our kids an advantage that we're often missing out on, and part of that too, that if you could just mention again, so there are some critical implements in breast milk. So, breast milk itself is providing important microbial information for babies as well. Right?

DR. WILLIAM DAVIS: Mm-hmm. There's something called human milk oligosaccharides, these are carbohydrate that mom passed on to the infant. They're very important, especially for neurological development. Well, if the child does not have that *Bifidobacterium infantis*, it can't digest those human milk oligosaccharides instead it gets diarrhea from it. And can take advantage of the neuro-developmental advantages of being able to digest human milk oligosaccharides. And of course, if mom transitions to formula feeding, there is virtually no human milk oligosaccharides, there has been a company that's actually managed to synthesize a couple of them. So, they're trying, but there's about 100 to 200 different forms of human milk oligosaccharides that occur naturally in human breast milk that... So, formula doesn't even come close to mimicking what a baby would get from... There's no Immunoglobulins for instance. There's of course no microbes, and so there's real problems with formulas. So, formula can be a necessity for many moms, but you want to try your best to try to breastfeed that child as long as possible.

SHAWN STEVENSON: Yeah. And you also talked about how marketing has kind of influenced, not kind of deeply influenced mothers choosing to breastfeed for a short amount of time, or even breastfeed at all, there was a big campaign done in Africa, for example, that you know this is the superior thing, the formulation this infant formula is better than, and for you to give your child the best advantage, breast milk isn't it. You need to give your kid this formula and kind of looking at these nefarious activities, thankfully, again, the word is getting out and there's been a resurgence of respect for breast milk fortunately, but what I want to talk about now is, even if we don't come in, and I know myself personally I didn't come in with the best circumstances and advantages with my mom, for example. But this is the thing, no matter where you are right now as a parent and as a person, there is room for improvement. And so, let's talk about some of the solutions here. We know that obviously, there's been a war that's been taking place within our bellies. Franken Belly versus the townspeople it's pillaging and craziness. But what can we do? What are some of the action steps for us to all start to have a super gut?

DR. WILLIAM DAVIS: I tell people, 'cause this gets kind of overwhelming for some people. I tell them, pretend you're going to have a backyard garden in springtime. So how do you do that? Well, you prepare maybe a 10 x 10 piece of land, you pick out the twigs and the sticks and the rocks, and then you plant seeds, and then you water and fertilize it for the growing season. At the end of the growing season, you have lots of tomatoes, and cucumbers, and zucchini. Well, the microbiome is very similar to that. We are going to prepare the soil, meaning we get rid of things that were disrupting your microbiome. And that's a long list so you do have to refer to lists.

So, try to get off the drugs, the prescription drugs that disrupted, minimize exposure to antibiotics, filter, you're drinking water, choose whenever possible for your budget and

availability, try to get organic foods that are less likely to have herbicides, pesticide residues. Of course, never consume genetically modified foods. Avoid processed foods that have long lists of ingredients because preservatives and emulsifying agents, for instance, disrupt the microbiome. So, clean the soil up, plant the seeds. Now, people often think that commercial probiotics are all they need in this whole equation, Shawn the least important thing are commercial probiotics at least in their current form, because they're mostly just haphazard collections. You slapdash mixtures of bacteria with no rhyme or reason to them. So, they're not that helpful, they are helpful, but not that helpful. Much more important are those fermented foods. The kimchi's, kefirs, yogurts, fermented meats, and they're delicious and they're fun, it's almost no cost to make fermented... I have fermented veggies on my kitchen counter, they're delicious, they're wonderful, I look forward to them.

So that and then, of course, feed them water and fertilizer with... These are mostly the fibers, the so-called pre-biotic fibers as well as various polysaccharides and polyphenols, these are things in plants; mushrooms, onions, garlic, shallots, legumes, leeks, dandelion greens, those are the things that feed your microbes. And because... When you bring order back to your microbiome, when you feed them, it tends to cultivate the healthy species. Now somebody says, "Oh no, Shawn, I tried that. I try to eat legumes or garlic, and I get massive case of gas and bloating..." Well, that's SIBO. So that can serve in tolerance to either those fibers in those foods, or the probiotics, especially in the first 60-90 minutes tells you microbes are way up high in the GI track. The problem is not the food, the problem is your microbiome.

SHAWN STEVENSON: Wow, wow. That's a shift in thinking right there. And so, I guess with diversity, would that be the order of the day? If we're wanting to diversify our microbiome, would we look to a diversity of plant fibers?

DR. WILLIAM DAVIS: Yes, very good point, Shawn, that's right. So, a diverse intake of... So, people sometimes make this mistake, "Well, I'm too busy, so I bought some Inulin powder, and that's all I do." Well, that actually causes problems. So, you want to vary your... You can use an inulin powder, but you also want to include some dandelion greens or some legumes, some white beans, black beans, kidney beans, chickpeas, hummus, other vegetable sources, mushrooms, a whole variety of... And I should point out, it cultivates diversity, as do fermented foods, they also cultivate diversity because you want to be like to some degree, the Hadza or the Yanomami and have greater number of diverse microbes.

SHAWN STEVENSON: Awesome. Dr. Davis, this has been phenomenal. I love talking with you, and again, your book is incredible, and its essential right now, so can you let everybody know where they can pick up a copy of Super Gut?

DR. WILLIAM DAVIS: Thank you very much, Shawn.

SHAWN STEVENSON: Of course.

DR. WILLIAM DAVIS: So, it's available just about anywhere they sell books, Barnes & Noble, Books-A-Million, Amazon, of course. So, you can't help but stumble on it, if you start looking.

SHAWN STEVENSON: Awesome, awesome. Well, I appreciate you so much. Thank you so much for being a light for all of us and doing the work that you're doing, it really does mean a lot.

DR. WILLIAM DAVIS: Thank you, Shawn, and you, likewise. You're doing great work. I'm glad you're so busy.

SHAWN STEVENSON: Awesome. Thank you. I appreciate, I receive it. Dr. William Davis, everybody. Thank you so much for tuning into the show today, I hope you got a lot of value out of this, this is one to share with everybody you know. And of course, you could take a screenshot of this episode, tag me, I'm @shawnmodel, and tag Dr. William Davis on Instagram as well, and on Facebook, he's popping on Facebook. He's been popping on Facebook for quite some time, I'm @ The Model Health Show on Facebook, @shawnmodel on Instagram and Twitter, and of course, you could send this directly from the podcast app that you are listening on as well to a friend, family member, somebody who's interested in health and wellness, of course, but also people who are struggling with different issues and just need more high-quality education. This subject matters a lot, the health of our gut is of the utmost importance today, so much of our health outcomes are literally rooted in our gut health.

And again, this book is wonderful, it's a great read, a lot of funny stories and articulations, brilliant guy as well, and one of my favorite teachers doing his thing. And we've got some more incredible teachers coming your way very soon, and also some master classes we're going to be doing on a myriad of different health topics, important health topics, so make sure to stay tuned. Take care, have an amazing day, I'll talk with you soon.

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 could find transcriptions, videos for each episode, and if you 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.