THE MODEL HEALTH SHOW

EPISODE 440

Our Misguided Battle Against Microbes & The Gut-Immune System Connection

With Guest Dr. Will Bulsiewicz

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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. Right now, the health and functionality of our immune system is of the utmost importance, it's one of the most important subject matters of our generation. And today on this episode, we're going to take a deep dive into the enormous connection between our gut health and our immune system, and we're doing that with one of the foremost experts on this topic and so I'm really, really excited about this conversation. And this also brings to bear the diversity of voices that we need to hear from, because his nutritional perspective is going to be different from other experts, but I love the fact that he works as a gastroenterologist, he works studying the gut and these direct impacts, but we might have a conversation about a ketogenic diet, or a Paleo diet, or a vegan diet, or a carnivore diet, and the most important thing is understanding that all of these voices matter, especially when it's affirmed with data.

And these are good people working in a clinical practice and seeing results with their patients with the different diet modalities, and so I want to make it clear it's never about subscribing to a specific diet format, these diets have wonderful structures and frameworks, but it's always ultimately at the end of the day, it's about doing what's best for you. And if there is a tool, if there's a certain diet archetype that can be healing for a patient that's tried everything, shouldn't it be brought to the table, whether it's a carnivore diet or whether it's a plant-based diet and everything in between. And what we're generally going to find is that all of us exist in the in-between, but today, even more so, whilst everything is so polarizing, but most people don't live there at these opposite extremes, they're operating in the middle. But today's atmosphere is causing people to push themselves or being pride apart in getting more extreme in our belief systems, in the way that we interact with each other, and even with diet, it shouldn't be this camp versus that camp, especially when we're talking about real food, especially when we're talking about things that our ancestors have been eating for thousands of years. If we're debating the minutia about that when we all should be collectively debating the over-arching theme of Hot Pocket consciousness.

If we're talking about real foods that our ancestors have been eating for thousands of years, whether it be plant-based or whether it be animal-based versus a Twinkie, why are we not having that conversation? Most people are in the Twinkie paradigm. That's

what we're dealing with. They're in the... If they're trying to get healthy like me, when I was trying to improve my health when I was in college, instead of the Hot Pocket, I eat the Lean Pocket, just get the lean one. The lean cuisine, it had lean in the name must make me lean, that's the paradigm we should be talking about if we want to debate facts and figures and what's best. Get the real food camps together and let's get our society eating real foods and start to eliminate all of the... Today, you're even going to hear the statistic on how much processed food the average person is eating. We can shift this thing, but we're debating within each other, there's a lot of infighting in the people who are, "in the know" about what's best. But at the end of the day, it's conversations like this that adds a new dimension adds a new flavor, literally, and adds a new color literally, to the conversation of the wonderful array of the human diet and what really helps us to thrive, so just really pumped about this episode.

And also right now, we're moving into a very, we'll just call it sketchy. Whenever I say sketchy, I think of sketchy, I think of Scooby-Doo, as something like Velma will say like, "Jinkies, Reggie. This is Reggie Raggy," but it's a sketchy complex flu and cold season coming up here. And I want us to start thinking about things differently. Not just from the perspective of our foods, but also from the perspective of our medicines, and this is what I love and why I really connect with companies that are bringing things to the market that are similar in their format, similar in their distribution, but radically improving the quality and ingredients that are in that thing, because most folks are just going to reach for the cough syrup, that's just what they're going to do. That's what we're programmed to do. But what if we can make sure that the cough syrup on the shelf is better, far better because here are some of the ingredients, the additives that are in one of the most popular conventional cough medicines out there, here's a few of them. FD&C Blue Number 1. FD&C Red Number 40. That's my favorite, it's delicious. Flavor, not even natural flavor, just flavor. What the... What is that? High fructose corn syrup. They're not trying to hide it.

Propylene glycol, saccharin. People, we still doing the saccharin? That's still a thing? Conventional cough medicine, you get your medicine with the poison all-in-one. We can do better than this. And traditionally, one of the things that we would utilize for coughs, we're talking about cold flu symptoms, and there's a tremendous amount of... Now we have data, now we are able to conduct studies to affirm things that our ancestors have been doing for a long time, but there's a way to go about it that's even better. A randomized double-blind, placebo-controlled study, this is the gold standard. It doesn't get no better than this, randomized double-blind, placebo-controlled study revealed that honey is able to outperform a placebo and significantly reduce cough frequency and severity and improve sleep quality. What? Honey, so sweet, so sweet. Now, the key

is the quality of the honey, because we don't want to get honey that also has pesticide residues, heavy metals, these things are common in conventional honey that you find out there on the store shelves, we want to make sure that we're getting high-quality honeys, and specifically, to take a look like what is the most ideal honey if we're talking about colds and flus in helping to deal with those symptoms and reduce the coughing and things like that, we need to look at pure buckwheat honey.

And also for myself and my family, we utilize the B.Soothed cough syrup, that's what's in our cabinets, the B.Soothed cough syrup from Beekeepers Naturals, because it's not only the high quality honey, free of all the nefarious stuff that's in conventional honey, but also in conventional cough syrups that we should be avoiding at this point, but it's a formula, 'cause it's not just the honey, it also includes Elderberry. Tons of studies done on the efficacy of Elderberry in improving and supporting the immune system, but it also has chaga mushroom and chaga's been clinically proven to enhance the performance and activity of our natural killer cells, like 300%. These are immune system weapons, these are immune... They're called natural killer cells. These are trained killers, but they have to be trained, they need their black widow training to actually help them to be able to do their job. Chaga's, one of those things that has study after study, affirming its efficacy in improving the immune system. And also, of course, they've got the high-quality propolis in there as well, and from Beekeeper's Naturals, we also, we talked about this multiple times on the show, their propolis spray is fantastic. They've got propolis in here as well.

And part of the incredible benefits of propolis is seen in a peer-reviewed study published in Antiviral Chemistry and Chemotherapy, they revealed that propolis has significant antiviral effects, specifically in reducing viral lung infections. If this is a concern right now, we've got stuff for that, that doesn't come with the saccharin, that doesn't come with the higher fructose corn syrup, that doesn't come with the FD&C Red Number 40, we can do better, and it starts with supporting products like these companies, like these... Getting these things into our homes and in our cabinets so that we're doing things that are good for us on multiple levels without the nasty side effects. Pop over to check 'em out B.Soothed Cough syrup, go to beekeepersnaturals.com/model, and you get 15% off everything that they carry, exclusive here at the Model Health Show, that's B-E-E-K-E-E-P-E-R-Snaturals.com/model for 15% off, and now, let's get to the Apple Podcast review of the week.

iTunes Review: Another five-star review titled, “He‘s the Best” by Antonio Patrick. “I was into a great deal of podcast, but Shawn has passion, heart, and empathy. He cares and also has some fire in his soul when he wants to bring it out.”

Shawn Stevenson: Awesome, Antonio, thank you so much for sharing that review over on Apple Podcast, I appreciate you so much. And listen, everybody, if you get to do so, please pop over to Apple Podcast and leave a review for the show. It means so very much. And on that note, we've got a special one for you today. Let's get into our special guest and topic of the day. Our guest today is Will Bulsiewicz, MD, MSCI, and he is the New York Times best-selling author of the book, Fiber Fueled. He's also an award-winning gastroenterologist, gut health expert, and the author of more than 20 articles in the top American gastroenterology journals. He's a graduate of Georgetown University School of Medicine and was a Chief Medical Resident at Northwestern Memorial Hospital and Chief Gastroenterology Fellow at the University of North Carolina hospitals. And he lives and has his practice in Charleston, South Carolina, where he resides with his wife and two incredible children, and I'm just pumped about this episode, he's such a wealth of information so let's jump into this conversation with Dr. Will Bulsiewicz.

Will, welcome to The Model Health Show, man. This is so great to finally connect and have you on. I was just telling you that your book is absolutely phenomenal, it's a page-turner, so ripe with information and insights, and I love books that you can read and you get not just little tips and tools but profound knowledge, and there were a lot of aha moments for me reading the book, so I just wanted to congratulate you and thank you for putting it together, man, it's just really, really good.

Dr. Will Bulsiewicz: Oh man, thank you so much. Shawn, it is an honor to be here right now. You are doing amazing things. I am so grateful for the hard work that you put in to bring high-quality interviews to your audience to get the information out there that you and I were talking before we even started about how it's amazing how you can set up shop, do this podcast and change the game, and change the game and bring information to the people that they wouldn't have received when the news agencies have an agenda, and so it's an honor to be here, man, I'm very excited to talk to you. And the other thing I want to tell you is that I don't know how many podcasts I've recorded, probably like 50 or 60, okay, but you have challenged me to step my game up because I've never recorded standing up, and nowhere it is for the first time ever, I am standing up during this episode and we're going to have this conversation mano a mano.

Shawn Stevenson: Let's go, the stand-up debut, I love it, man. I love it.

Dr. Will Bulsiewicz: Let's go.

Shawn Stevenson: So we got to start with your superhero origin story, and Will, you are seriously one of the foremost experts in this topic for a myriad of reasons, but also, your story is multidimensional too, going through your traditional education, a lot of education, and at the highest level and also, kind of experiencing some of your own health challenges and having a unique perspective come in, in the form of a wonderful woman, and your story is just incredible man. So let's dive in, let's talk about your superhero origin story. What got you excited and interested about being a physician in the first place?

Dr. Will Bulsiewicz: Oh, man, it goes back to when I was a teenager. I honestly think that what I'm doing as a medical doctor is just who I am. I feel like this is a part of my soul, and it's just an expression of what I was born to do, basically. And so you go back to when I was a teenager and I made the decision that I wanted to become a doctor and my motivation was to try to help people, and I really set myself to that, there were a lot of things that I did along that path. I went to Vanderbilt for college I went to Georgetown for med school, and along the way, there were a lot of Saturdays when my friends were having fun that I wish I could have been there with them, you know what I mean? And I'm a nerd. I'll just admit it when we get that out right off the bat on this show. I'm a nerd and so I'm also a grinder. When I have a goal, I wind it up and I just start grinding. And so things were going really well for me. I went to Georgetown for med school, I was at Northwestern in Chicago for my residency, one of the top programs in the country as the Chief Medical Resident, and all these great things were happening, and yet at the same time, I felt inside like my life was falling apart.

So to be outsider, I was like, "Oh wow, Will, you're smashing it." I didn't feel like I was smashing it, I felt miserable. I felt depressed. And it was like I woke up and I was like 29, 30 years old. I was 50 pounds overweight. I had low energy, I had shockingly low self-esteem. I would be hopped up on caffeine, basically, continuous either coffee or energy drinks to get me through the day. And I hated myself, I hated everything that was going on, and I felt like something had to give, and I'm a very Type A guy, and so I felt like I was like early 30s guy. It's like, "I'm just going to exercise. I'm going to exercise and hit it hard, and if I do that, I'll be able to eat whatever I want." And so I started doing that six days a week of exercise. I'm not exaggerating, I was doing 45 minutes of weights, and then I would jump on the treadmill if it was the winter or if it was the summertime, I would jump in the pool. So my workouts were all over an hour-long, and doing that six days a week, and I could build muscle, I could build endurance, I could run fast, I could swim a lot in the pool, I couldn't lose my gut. I would go back home and my brothers would see me and they'll be like, "Will, what happened to you?" And something had to change, and I got lucky.

It's almost like God had an intervention for me because I met the woman who's now my wife, but at the time, we were just starting to date. And at this point in my life, I was in my gastroenterology fellowship so for those of you don't know me, I'm a gastroenterologist, that's what I do for a living. And I was in Chapel Hill, North Carolina at the University of North Carolina. And going to date with my wife, we're just going on a date and I'm like ordering my usual stuff, I'm getting my rib eye, and she's over there ordering sides because we're at the steakhouse. She's not ordering anything except, "I want a potato, I want a side of broccoli," I want this, I want that, the mushrooms. And I'm just like, "What the heck is going on over there?" Never been around anyone like this, I've never been around anyone who is a vegetarian or a vegan in my entire life, I didn't know anyone. But what I did notice though is that she had complete control over her weight, she was eating without restriction, she was cleaning the plate, and she was super happy, super satisfied after dinner, while I was groaning on the couch in sweat pants.

So that opened my mind and it led me to reconsider, maybe the food that I was raised on from childhood that was like the food of our family, maybe that was the problem. And it opened my mind to the possibility that maybe I needed to change my diet if I really wanted to get the results and the wellness that I desired. And so I started to do that and I just started with small changes, and I made those small changes over the course of time, one thing after another. First, you drop the high fat cream and the artificial sweeteners from coffee, and then another day you decide that instead of drinking soda, I'm going to drink Kombucha and you just kind of start leveling up your nutrition. Have a smoothie instead of getting Hardee's for dinner, and all of a sudden, the weight is melting off my body, the anxiety is lifting, the self-esteem is surging back, the energy levels are through the roof. I start feeling like myself again.

And it was so powerful that I felt compelled to do something with it as a medical doctor, and so at this point in my life, it's like around 2014, 2015, and I'm now done with my training; it took me 16 years to finish that. Done with my training, I'm in clinical practice in Savannah, Georgia, and I'm starting to take these patients who have no idea what I'm talking about if I were to say plant-based diet, and I'm starting to introduce them to the concepts of ramping up more fruits, vegetables, whole-grain seeds, nuts, legumes, and I'm seeing amazing results in my patients, like amazing results. And it got to the point wherein 2016, this was so powerful that I felt compelled to do something that felt very unnatural to me, so people who know me from social media, if you follow my account, The Gut Health MD, you might think that this is very natural and that I love it, I actually really don't. I would rather be hanging out with real people in a room and talking about sports, okay? But I felt compelled to create this social media account just to have a

conversation about this stuff, and one thing has led to another, and now here I am on The Model Health Show, so dreams do come true.

Shawn Stevenson: Also, man, this is such a great story, man. And one of the things I want to point out for everybody, and of course, they'll understand that too, in reading your book, that you are also a well-recognized researcher, and that's one of the gifts that you brought to the table that a lot of folks don't have in this space. And so you have peer-reviewed studies that you've done yourself, published studies, and so your ability to look into the data, so when you started to find out that nutrition mattered so much, you were able to actually dig around and find that, not only was it some obscure kind of wild idea of how much our food matters, there was a ton of data on this. And I want to point out a quote from your book that literally... I've thought about it in different dimensions, but the way that you wrote it was profound, it hit me in a different way. You said, "It's not that I thought I was eating healthy," you said, "It's not that I thought I was eating healthy, it's more that this was normal for me." You weren't under the illusion that the way that you were eating was healthy, hitting the two-liter per day habit but you were grinding, you're a grinder.

And that's one of the unfortunate things too like we could do a whole show on talking about the system of education for our best and brightest in medicine right now, it's just... It's not healthy, the way that it's constructed. And of course, like you said, he was a big fan of the hot dogs, the hot dog... You're in the hot dog paradigm, but you weren't under any illusions that what you were eating was healthy, but it was just normal, and that's, for so many people, that's it. It's not that I'm just thinking about I'm healthy or unhealthy, it's just, this is what I do, and I'm making it happen. So when I read that, it really hit me, but you are a gastroenterologist, this is like, you specialize, as a doctor, specializing in digestive tract and related organs, but you share the startling fact on how much training you actually received. You had 16 years of school, and you shared in the book how much training you actually received, you and your classmates on nutrition. Can you share a little bit about that? And then the pivot to you, researching this yourself.

Dr. Will Bulsiewicz: Yeah. The reality is this, I'm a Western-trained doctor. I am proud of my education, but I see the flaws. I see the flaws in the education for our doctors, I see the flaws in our healthcare system, and I'll be the first to admit that they're there and this is one of them, is that if you look at how much nutritional education our doctors get, it's completely inadequate. So for me, I've finished my training in 2014, and you would have to go back to 2003, I was a medical student and I had two weeks, two weeks of actual nutrition class, and this nutrition class, Shawn, it was not like, "Hey, how do you talk to your

patient about a healthy diet? How do you talk to your patient so that they can change their diet to lose weight? What are the advantages and disadvantages of the paleo, or the keto, or the vegan diet?" That's not what we were talking about. This was like, "Hey, what are the symptoms if someone has this rare B6 deficiency that you literally will not see in your entire career?" So that's worthless. That's worthless 'cause that's not practical nutrition. We need practical nutrition so that a doctor or any healthcare provider frankly, can have a real conversation that is well-informed and comes from a background of education, and if you never get that, you're never going to be able to have that conversation and make it a smart one.

And that's the reality of our Western healthcare system. So I came up through this system and along the way, there was a time where I actually, like I said, I'm a nerd. I actually consider myself to be a cancer epidemiologist, and I had worked at Northwestern, to get a Master's Degree in Clinical Investigation. I actually did that at night. I would be on call in the intensive care unit, sitting in class, and then running back to the ICU to see my patient. And I did that in Chicago, and then I went to the University of North Carolina and I studied at the School of Public Health there, which basically, the UNC School of Public Health. For those of you who aren't familiar with our public health education is consistently one of the top three. Basically, it's Harvard, Hopkins, and UNC are always the top three schools in public health. And so I studied there and I was a cancer epidemiologist, and then I fell in love with taking care of patients that was my main thing. I needed to be with real people in a room and trying to help them, but what was interesting for me was that I could take these techniques that I learned, these powerful techniques, understanding clinical research, and apply it to taking a second look at the research that exists with regards to nutrition, and I had never seen this research before, I opened it up I'm like, there's got to be five studies, maybe 10.

No way, man. There are literally thousands, thousands of studies, high-quality studies defining for us a path towards optimal health where you can accomplish your health goals by changing the way that you eat, by changing your lifestyle. And the science is there, it's just the science is not being delivered to your doctor. And so I had to actually self-learn and I became kind of obsessed with this, and this was, again, going back to 2013, 2014. I started spending my nights just digging into research studies, sitting there, flippin' through them, taking notes on my laptop. And that's the world that we live in, is the doctor has to... If they want to be a nutrition expert, they can't just be a doctor, they have to be a doctor who is willing to go beyond their full-time job as a medical doctor to also learn about nutrition, which is crazy. Most people don't have the desire to do that, I guess I'm crazy enough.

Shawn Stevenson: And by the way, you being a nerd, you're amongst friends right here, right now, man so I appreciate you and I appreciate you going above and beyond. And this is the interesting thing right now, is that you also mentioned in the book how it takes approximately... And I've mentioned different version of this, about 17 years where to go from high-quality clinical trial to being something people learn about and implement in clinical practice, and right now, we're in an interesting shift is taking place where there are people like yourself, who are you, truly are one of the pioneers who are taking these things and putting them into practice and seeing phenomenal results with your patients, where there's this revolving door with gastrointestinal issues right now in our country that we're going to circle back and talk about, but I just find it...

And this is just another big revelation point that I want people to get, and having you here to be able to talk about this, you have a phenomenal level of training and dedication that you went through, and being a doctor who specializes in the digestive tract and specializes in those related organs, but understanding, it's the digestive... It's about digesting food, and so not getting the training on food itself, it doesn't even make sense, it doesn't even match up to the job description and the intention of it all in the first place and that's at the heart of the matter. And so you take it upon yourself to understand, "Hey, this food matters," and given the analogy, if you could really quickly, because of course, conventional medicine and medication, all of these things have their place, everything is a viable tool, but if you look at the sheer amount of what a medication could do versus the pounds of food that we eat, can you talk a little bit about that?

Dr. Will Bulsiewicz: Yeah, man. I find it ridiculous. Honestly, it's absurd. If you take a moment and you zoom out... Let's look at the big picture, you guys, I'm talking to everyone who's sitting at home, listening to us right now, and just think about the fact that you could take pills that are on the order of milligrams, and that's your medication. And you think that that is going to overpower the pounds and pounds of food that you eat per day... The average American eats about 3 lbs of food per day. If you want to keep the math super simple, let's call it 1000 lbs of food per year, and if we're living to about 80 years, that means that during our lifetime, each one of us is eating 40 tons, 80,000 lbs of food. Are we going to overpower the 80,000 lbs of food and the effect that that has on our body, on our health with a couple of milligrams of medicine? No, you can put your finger in the hole, you can create a patch, but you're not fixing the problem until you fix your diet and get your lifestyle right, that's the reality.

Shawn Stevenson: Yeah, definitely, definitely. So I'm curious too if you could share how much was known about the microbiome, the microbiota when you started medical school versus where

we are today? It's been a massive transformation in this time span.

Dr. Will Bulsiewicz: Explosion, explosion of research. This is the hottest, hottest ticket in all of science right now and it's blowing up everywhere you look, and then the pace is accelerating and hard, frankly, for people to keep up with, which, Shawn, is one of the issues in trying to disseminate this information to people is that you actually have to put in the time to pay attention to everything that's coming out, it's a lot. You go back to 2006, I graduated medical school from Georgetown, in 2006, we knew nothing. We thought at that time that there were literally a couple hundred species that could live within the human and be a part of your microbiome. We thought there were literally a couple of hundred species, and the reason why is we didn't really have the ability to test for them, because most of these species which are like bacteria, they won't grow on a culture plate, which is what we've always used to study bacteria, it's culture plates. So if the bacteria won't grow, then how are you supposed to study them? And it was around 2006, the year that I graduated medical school... I had already, by the way, decided at that point that I wanted to be a gastroenterologist. I wasn't thinking about this.

I was thinking about more like, "Hey, I think poop is cool." Just to be honest, I think, poop is cool, you talk more about that. But anyway, it was around 2006 that they had this laboratory breakthrough that for the first time it allowed scientists to get at the microbiome and actually study it, and what they discovered was that oh my gosh. This is insane. There are literally thousands and thousands of different species inside every single, basically, across the globe, thousands and thousands of different species, and each one of us has our own unique signature, our own unique fingerprint that is made up of somewhere between hundreds and potentially over a thousand different species and microbes. Shawn, there's no one on the planet that has a microbiome like you. We could assign a fingerprint, a signature to your microbiome. There's no one on the planet that has one like me, and that includes my kids, that includes my parents. And so it's kind of interesting to consider that we are... To turn the... To pivot towards a slightly different topic, you and I, if we look at our human genetic code, you and I are 99.9% the same.

Clearly, we're not the same person. We look different, we have different interests, they're not exactly the same. We would get along very well, but we are 99.9% the same in terms of our human genetic code, but Shawn, we maybe 100% different in terms of our microbes. And so there's this huge variability and what this gets to is a really important topic in the year 2020, which is Bio-individuality. Bio-individuality and this is the expression of that bio-individuality, which is that we all know, I will be the first to admit, there is no diet that I can say that will apply to every single human being. There

are rules of engagement, there are rules of biology, but you, me, and the people who are listening to us right now are all unique, have unique needs, have a unique microbiome, and because of that, your optimal diet is going to be slightly different and that's the challenge that we face these days is trying to figure that out.

Shawn Stevenson: Yeah, this is one of the first things when we talk before and why I want to have you on is because of your awareness of that fact and you being a proponent of that, and understanding we're all unique and we all have unique needs, it cannot be this cookie-cutter thing, even that my perfect diet that I would want for you, that might not necessarily be the thing that's good for you, or it might be good for you now, it might not be good for you a year from now, and so having that flexibility too and I love that. It just helps so many more people and helps us to dial in what matters for each of us, but there are some things that are consistent with all of us, and we have these five different types of microorganisms residing within us. So can we cover what those five different types of microorganisms are for everybody?

Dr. Will Bulsiewicz: Yeah, for sure. Let's take it from the top, let's talk about the microbiome. For those of you who perhaps have only heard a little bit about this topic, which is that a microbiome is referring to the invisible living creatures that are part of our body, that are not human, and they cover us from the top of our head to the tip of our toes. All external structures, all external parts of your body have microbes as a part of it so that includes your skin, your nose, your mouth, inside a woman's vagina, and here's the weird part, our intestines. Because it's a tube that starts at the mouth and ends at the bottom, our intestines actually face outward, that is where we interact with the outside world, believe it or not, okay? That is actually where we are most exposed. The deepest parts of our body that we describe as our bowels are actually outward-facing, and that is where most of our microbes lived. These microbes lived mostly inside of our colon, which is our large intestine, and the estimates are that we have about 40 trillion of these microbes. Now, to put that into perspective, Shawn that is more than the number of human cells that you have. You are less than 50% human.

More than 50% yourselves come from these microbes. And when we zoom in on these specific types of microbes, it is interesting to think about it this way, but this is a fact. Your gut is an ecosystem, it is an ecosystem in the same way that you would think about the Amazon Rainforest, about the Great Barrier Reef. There is a harmony and balance that exists among the life within that ecosystem, and it includes these five types of microbes. So the main one are bacteria, that's what you're going to hear us mostly talk about are bacteria, they are the dominant ones. And we know bacteria, we've heard of E. Coli, salmonella, Shigella, but actually, it turns out that most of these bacteria are our

friends, they're there for a reason. They're trying to help us. Beyond the bacteria, we have fungi, which you could also refer to as yeast. We all have those like Candida is an example of one of those. The third one are the Archaea, which are my favorite because if you haven't heard of these archaea, let me introduce you real quick. The first life that we detected on this planet was from a dig site in Greenland, it's from 4 billion years ago, and they were Archaea.

We believe that archaea are the first life on this planet, and they are hardy, they are resilient. They are not going anywhere. Global warming can occur, anything could happen. We could have a nuclear war, there was to be archaea on this planet, okay? And you will find them in the bottom of the ocean in the rift vent, you will find them inside of a volcano, and you will find them inside the friendly confines of your colon. And the archaea are part of this balance too. They're not bacteria, they're not yeast, that they're own type of thing and they're there and are part of the harmony. And then the last two are, you could have parasites. Not everyone has parasites, but actually more people have parasites than they would realize, and the last are viruses. Viruses are kind of weird. They're not even alive. They're just basically DNA or RNA structures that can affect and influence how biological processes work. So a COVID-19 is not living, it's a virus, and that virus can affect us. And so we have viruses that are part of us, and they're actually a part of the balance too, they help to maintain the balance within our microbiome and they're not necessarily problematic or the enemy, they're actually contributing to our health.

So that's the lay of the land, five different microbes, creating this ecosystem that's designed. It's really... It's the engine for human health. This is the engine that makes you healthy.

Shawn Stevenson: Yeah, man, I love this, and this is even giving us a deeper perspective about this rainforest analogy, because everything depends on everything else. And certain things we might believe to be negative, like nobody is a fan of mosquitoes, they're not just waking up like, "You know what, we got to save the mosquitoes, we got to save the vipers." But those... If we take those out of the ecosystem, it could potentially collapse just based on removing certain things. And I love it how you bring about in your book, something that even when you were writing this, you probably had no idea we'd see the paradigm that we're seeing today, but you mentioned how much that we kind of all grew up being taught to essentially fear bacteria, and you mentioned a little bit how you believe that our fears can be strongly misplaced.

And my concern today... So I want you... If you could talk a little bit about that, because

we went so far down that tunnel it would be an antibacterial, antimicrobial and not understanding that we are mostly those things, that we got into some dangerous places with antibiotics, for example, when today, I'm concerned that we can be doing the same thing for viruses and going too far and understanding that our war against these invisible microbes is probably one of the reasons we're having so much chaos right now with our digestive health and our immune health.

Dr. Will Bulsiewicz: Yeah, that is so true. The war against the viruses can be affecting the bacteria too, so we're not necessarily targeting these viruses. Let's unpack this a little bit and let's take it from the top, going back like, let's hop in the DeLorean and go back to the turn of the 19th century, okay? So it's around the... Actually, let's fast forward up to the turn of the 20th century, so around 1900, alright? The top causes of death at that time were all infections, pneumonia, tuberculosis, influenza, we had no way, we were defenseless. And the discovery of penicillin was the biggest medical breakthrough of modern health history, because it immediately added years to our life, because finally we had a tool to defend ourselves against the top causes of death. Heart disease and cancer were not killing people. It's not that people weren't dying from heart disease and cancer, but the top killers were all infections. And finally, we developed a tool in World War II, which was penicillin, and when we started to apply that, it was so powerful that not only did it change the game in our fight against these microbes, it actually changed and shaped our healthcare system.

Because what it showed is that this little pill can be powerful, and next thing you know, we create a healthcare system, centered around the concept of the pill is powerful. Bow down before the pill, all hail the pill. And that's what we have, as you carry that forward, we got stuck in the idea that we needed to depend on pills to fix our problems, and that carries forward all the way to 2020. Here we are, and that is the origin of our healthcare system. So I'm not saying that penicillin was bad, I am so glad that we found penicillin, but the problem is that we reacted in a funny way because we found something so powerful that we grew to depend on the idea of pills in our healthcare system, and we found something so powerful that we decided to just apply it to everything. You got the sniffles? Boom, take your antibiotic. You've got a little bit of upset tummy and some diarrhea? Boom, take your antibiotic.

And that strategy has led us to a place of just destroying these bacteria because what's happening is that if you were to take away these antibiotics, take away our modern lifestyle and zoom in on these microbes, what you would see is you would see that they're just like us. There's literally potentially hundreds, if not over 1000 species with their own characteristics, their own qualities. They have their own foods that they like,

alright? They don't all eat the same thing. And they have their own personalities and skillsets, and this community, they exist there, and when we go with the antibiotic or when we go with, for example, the hand sanitizer, we're not waging war just against the bad guys, we're bombing all of them, we're bombing all of them. We're just taking them out, and then we're dealing with whatever comes of that. And the reality is that now here we are in this war that we appropriately waged against the bacteria because that's what was killing us, we've gone too far. And now we're in a spot where our desire to eradicate, to sterilize, to destroy, has put us into a position of vulnerability, because we're breaking down our microbiome, and that has undue consequences on the rest of our body and our health.

Shawn Stevenson: Yeah, man, so perfectly said. And one of those results is a silent epidemic that a lot of people aren't talking about. You actually published a study on this on one of the most prestigious journals, Gastroenterology, and you asserted that at least 70 million Americans are suffering with digestive issues now. And this is just what we can put our finger on, it's probably different levels to that many millions more, and this is an epidemic that's not being talked about. Why is that? Why are we not talking about this? And do you think that people have just kind of accept that this is normal when it's far from that?

Dr. Will Bulsiewicz: I think that people sometimes do accept this is normal like, "Hey, this is just the way my body is," which is unfortunate because your body was meant to thrive, it wasn't meant to feel broken. And I think that the issue with this, Shawn... So yeah, I published this study that basically said that there are at least 70 million Americans suffering with digestive issues, why aren't you asking me, why are we ignoring this, and what I would say to you is this. I think part of the reason why we're ignoring this epidemic is because if we look at the list of our top killers, look, we all know heart disease, cancer, stroke, COPD, diabetes, chronic kidney disease. I just named six of the top 10 causes of death, and they are all by the way, diet, and lifestyle-related. So we fixate on these top causes of death, we ignore the things that affect our quality of life, like our digestive issues. But here's the rub, when you damage the gut, you manifest digestive issues first, but heart disease, cancer, stroke, diabetes, COPD, asthma, chronic kidney disease, Shawn, every single one of those things that I just mentioned has been connected back to the health of our microbiome. So the warning shot for these bigger issues that can come up later, the warning shot is when you manifest the digestive issues and it's your body telling you that your gut microbiome is not in a happy place and it needs to be fixed.

Shawn Stevenson: Yeah. You cited some of the data in your book as well, connecting our damaged microbiome to the, just dramatic increases and things like allergies like we're so allergic

as a people now. I don't think we're designed to be allergic to outside, you know what I mean? You're allergic to outside? And it's one of those... Prior to me, finding some of this stuff out and making some changes in my life, I would get seasonal allergies. I would be... I couldn't even go to my grandmother's house because she had a pet, and they'd have to put me in a special room and try to... But even then, I could only... I would drive three hours to my grandmother's house, 3 1/2 hours, and then I have to drive right back within the next 24 hours a couple of times because I couldn't breathe, but then by changing the way that I was eating, changing the... And it's not just food. By the way, and this is another thing I love about what you do, but my stress and my movement practices, all those things, my diet primarily, really helped to just kind of reset what was happening in my gut, which at that time I didn't really know that that was the root, but I can go to my grandmother's house and I wouldn't have these allergies and break out and start itching, and not being able to breathe.

I know what that's like and it's not normal. These are things that have happened as we've been destroying the integrity of our microbiome, again, kind of waging war against a specific microbe or a specific couple of microbes, and not understanding our approach is going to mess up the whole shebang and really throw off that ecology. And so the next thing I want to ask you about is immune health is such an important topic today, this is the most important topic, however, is still not really getting the appropriate amount of attention, but our immunity is what is going to defend us from infectious diseases, it's how your body is designed to work. We have the innate immune system, we have the adaptive immune system, but that immune health is directly connected to our gut health so can you talk about that connection? Why does our gut health have such a strong influence on our immune health?

Dr. Will Bulsiewicz: Okay, so you set that up very well because there is a direct line between the food that you eat and the status of your microbiome. The number one influence on your microbiome is actually your dietary choices, and I actually find that, by the way, to be empowering because what that means is you're not born with something that you can't change. You have the ability to make your gut microbiome whatever you want it to be, you just have to choose the right stuff to get it there. And so there is this direct line between the food that you eat and your microbiome, and then when we zoom in, imagine that we're going in and looking under the microscope, and what you would see inside the colon is that there would be this flourishing community of these microbes, again, the bacteria, the fungi, the archaea, they're all hanging out, and there is this paper-thin barrier called the epithelial layer. This paper-thin barrier is there, it is so thin that is less than the size of a fraction of a human hair, and it's not visible to the naked eye. And on the other side of that paper-thin barrier exists 70% of the immune system,

which actually makes sense, because the immune system is meant to defend and where, if you were a general, where would you set up your defenses?

You would set it up in the place where you are the most vulnerable. Where are we the most vulnerable, where are we interacting with the outside world? It's there. It's there in the gut. And so you find 70% of the immune system there separated by just this single layer of cells, they are literally microns away from each other, and they're communicating. Although they are separate, there is a constant cross-talk, and I described it in my book, and you know this, Shawn, 'cause you read the book that it's like, I got my house and my neighbor over there has their house, and we got this little dinky fence that separates our house. And when this pandemic is over, I'm going to have a big party, he's going to have a big party, and let's not pretend that those two parties are totally separate, even though there's a fence that separates them, we got our energy, they got their energy, we're feeding off each other, we're talking to each other, we're sharing stuff, and that's the way that it works inside of our gut is that you literally cannot separate. You literally, cannot separate these gut microbes from your immune system.

When I was researching my book, I looked into the connection between the gut and the immune system, and what I found is that all allergic diseases, all autoimmune diseases, where they have studied the health of the gut microbiome, they have discovered in all cases that there is damage to the gut microbiome in people who manifest allergic and autoimmune diseases. The point being, Shawn, that I am of the belief at this point that if you want a healthy immune system, you have to have a healthy gut and that is the path. And so if the path to a healthy immune system is through the gut, while I just told you before that there's a direct line between the food that you eat and the make-up of your microbiome, so let's talk about and let's focus on our diet because that is what is going to change your immune system.

Shawn Stevenson: Powerful. What we want to do next is talk about what are some of those things that we can do and also we got to talk about poop, and we're going to do that right after this important message guys so sit tight we will be right back.

I've been battling something for many years, and that is how to fortify or to make sure that I have an insurance policy with my health, and for a lot of us, we're marketed to, that we should take up a "multivitamin." And I remember when I was a kid taking those Flintstone Vitamins, they were delicious but was I really getting any nutrition from those bad boys? And fast forward to today, and we have the Centrum of the world and the men's and women's multis, and a lot of people are buying into this billion-dollar

industry, not realizing some of the big mistakes that are happening with those purchases. Number one, this industry is not very regulated so we have to be mindful of that. What's in the pill might not actually be in the pill so we have to pay attention to that. Number two is the processing of those nutrients. We're talking about when we buy a multivitamin from a conventional company, we're getting a substance that has literally been isolated as a chemical compound in a laboratory, it's not a food-based nutrient, so do yourselves, even recognize that? Is it's simple chemistry, that if there's vitamin C supposed to be in this pill that your body is actually going to take it on.

Well, I'm going to argue that. No, it's not going to. You're going to have a greatly reduced ability of assimilation when we're throwing our money basically out the window buying those multivitamins. I know what you've had this happen, where you buy a multivitamin and then your pee is like some Ninja Turtle color, some weird neon yellow, secret of the ooze and it's like, "What is... Am I dying?" No, you're not dying. Your body is getting rid of some of those compounds that it has just tried to take on. And also there are some compounds in the pill that are nourishing your body for sure. There's a couple that are doing that, but overall, it's not the best idea. So what do we do? What do we turn to? Well, personally, I make it a must, and I tell every single person that I come in contact with that they absolutely have to get themselves a green superfood blend and my favorite is Organifi Green Juice. It is the best tasting, 'cause I've experimented with a lot of the green powders out there, it's the best tasting green powder that I've found and it is loaded with nutrition.

I'm going to share a couple of things with you that I really enjoy. Number one, it has organic wheatgrass, super loaded with micronutrients and phytonutrients, and these really incredible minerals and trace minerals that add a lot to our health, but really, who's going to guzzle wheatgrass, alright? It's not going to be an enjoyable thing. I used to actually go to the juice place and grab a little wheatgrass and I trick my mind to thinking, "Oh, I could taste a little sweetness in there," but every time I drive past somebody who freshly mowed their lawn, I start to gag, alright, and I don't want that to happen to you so it's... Put into Organifi, as one of the hallmark things. Also, we've got organic spirulina, and as you know from listening to The Model Health Show, I'm a big fan of spirulina, high source of protein of any compound in the world by weight, so it's about 70% protein by weight. And humans have been consuming this for thousands of years and there are some really interesting compounds in there you're not going to find anywhere else like phycocyanin, which has a great impact on your stem cells.

Alright, so stuff like that, really, seemingly magical food compounds are found in spirulina, and spirulina is found in green juice from Organifi. Also, they've got

Ashwagandha for stress relief, they've got turmeric, which is one of the most powerful anti-inflammatory compounds you're going to find. But here's the great news about this, it's processed with care and consciousness. It's a gently dried superfood blend that's retaining all of those nutrients that you're really going for when you're trying to get a "supplement" to supplement a great diet. So remember, food first, juicing is amazing, but you can get a lot of those nutrients you're looking for in your fresh-made juices by consuming the green juice from Organifi. And by the way, I'm a big fan of juicing. I've been juicing for about 10 years now, and it's one of my favorite health practices, but seriously, who's going to clean the juicer for me?

If you're going to come over and do that you'll make my life a whole lot easier, nobody really likes to clean the juicer, and what we want to do is make sure that, yes, we don't want to stop juicing, but those times when you're in a rush or those times when you know that, "Hey, I really need to fortify my nutrition," make sure that you're turning to Organifi's green juice blend and just throw in that and add some water even, and you're going to deliver a lot of those micronutrients and phytonutrients and trace minerals and minerals, vitamins into yourselves because it's retaining those nutrients because it's properly produced. And I love those guys, and they've actually given us a great, amazing offer as a sponsor of The Model Health Show. So if you go to organifi.com and that's O-R-G-A-N-I-F-I.com, and use the coupon code, model at checkout for 20% off your first purchase. Now, back to the show.

Alright, we're back and we're talking with Dr. Will Bulsiewicz about his new book, Fiber Fueled. It is one of the best, most important books of the year, make sure to pick up your copy, and before the break, we were talking about this incredible dynamic world of our microbiota and different dimensions, things that a lot of us don't really think about in this incredible world that's keeping us healthy. And one of the things I want to dive in and talk a little bit more about is the vastness of the microbiota. You kind of touched on this a little bit, but I want to talk about the number of species of bacteria, the amount of genes that our bacteria have versus our human cells. Can you talk a little bit more about that?

Dr. Will Bulsiewicz: It is insane, and honestly it challenges our image of ourselves when you start to hear of our actual make-up because we think of ourselves as these powerful autonomous creatures that are the masters of our world, the masters of our domain. And yet, if you actually look at the number of cells, we touched on this a little bit, let me unpack this even more. If you look at the number of cells, at a minimum, you have more microbial cells than you have human cells, but it goes further, if you were to take your red blood cells away, because red blood cells, they don't have a nucleus, they don't have the

mitochondria and the Golgi apparatus and all this different stuff like in normal cells. If we look exclusively at the nucleated cells, which when we think of cells that's really what we're thinking about, you literally are 90% microbial, and only 10% human. But it's even more striking, if we look at our DNA, because I said before Shawn, that you and I are, in terms of human DNA, we are 99.9% the same, yet our microbiome maybe 100% different.

And if we translate this into our genetic code, I'm going to tell you how powerful these microbes are when it comes to our genes. Two things. Number one, 99.5% of your genetic code is not human. I had to pause so that you guys could contemplate that, 0.5% of your genetic code is actually human, 99.5% comes from these microbes, they are the majority of our genetic code. And then there's more. Point number two, these microbes have the ability to regulate and change the expression of our genetics, we call this "epigenetics". It's like having a light switch, our genetic code, what we were born with, is basically like, imagine the wiring behind the wall for whether or not you're going to turn on the light that's overhead, right? So you're born with the wiring, but the question is, is someone flipping the switch? And the answer is that the person who has their finger on the switch and gets to make the call are your gut microbes. And we've actually seen this proven Shawn, let me give you a quick example.

So, many people have heard of celiac disease. Celiac disease is the origin of the gluten-free movement because celiac disease is where people have an autoimmune reaction to gluten, which is a protein that you will find in wheat, barley, and rye. These people who have celiac disease, when they consume gluten, their immune system goes on the attack, and it actually attacks their intestine. Right now, what's interesting is, so first of all, celiac disease is genetically motivated. What I mean by that is that if you don't have the gene for celiac, you can't have celiac, it's not possible. But the gene is extremely common, 1 out of 3 people have the gene for celiac disease. Here's what's weird, we have seen a 500% increase in celiac disease in the last 50 years, and we're asking the question, the scientists are asking the question, "Where is that coming from? Why is this disease exploding? And it's not a change in our genetics." So the question is, why are we seeing more today?

I literally... I'm not... Shawn, I'm not exaggerating when I tell you this. I had a day where I diagnosed three people in one day with celiac disease, okay, this is supposed to be 1% of Americans have this, and I diagnosed three people in one day. It's on the rise literally right now. So, to answer the question, where does celiac disease come from, and why are we seeing this rise? There are three steps that you need to develop celiac disease, you need to have the gene, that's a requirement. One out of three of us have that. You

need to also be exposed to gluten, that's a requirement. Well, guess what? You live in North America, you've been exposed to gluten, we all have, right? There's no one who's been raised on a diet where they're not exposed. But here's the key, this is the game-changer, number three, to activate the gene and have celiac disease requires damage to the gut microbiome. When you damage and alter the microbes, you flip the switch on that gene, the gene gets turned on, and now for the rest of your life, that person will have celiac disease.

And we will see this where Shawn, a person will go to Mexico, have a good time, but they get the tummy bug, they get Montezuma's revenge. And then they come home, and they'll see me three or four weeks later, and they'll say, "Doc, I went to Mexico, I had a bug, and I'm still having diarrhea and it's been four weeks." And I will go into their small intestine, do an upper endoscopy, go into their small intestine and take a biopsy, and that biopsy will reveal that they now have celiac disease, and the reason why that happened is because when they got the tummy bug, they damaged their microbiome, and now they activate this gene, and they have it. So, the point being that these microbes, they are connected to... We talked about it, they are connected to our nutrition, to our digestion, to our immune system, now we've talked about how they're connected to our genetics. By the way, these microbes are connected to our metabolism, they affect our weight, they're connected to our hormones, they affect estrogen, they affect male sex hormones; they also are connected to our brain, they affect our mood, our focus, neurologic conditions, mood disorders, connected back to the gut, they are powerful.

And one last quick point, I hope you don't mind Shawn, is you asked me about the vastness. I can't hear a question about the vastness of our microbiome without also mentioning that they are everywhere, that they are everywhere, that they're... That all life on this planet has a microbiome. So it's not just us humans, and it's not just the animals, it's also the trees, and the grass, and the leaves, if it's alive, it has a microbiome. And this is part of the reason why when we go out in nature, it's so good for us because we're sharing microbes with the trees, you don't need to literally become a tree hugger, you can just go out and go for a walk, and you are sharing microbes from the trees. And when you eat an apple, for example, Shawn, they have studied the microbiome of the apple and discovered that the apple from seed all the way up to mature fruit has an evolving microbiome, and by the time it's a mature fruit and you have it in your kitchen, you take a bite out of it, at that point it has 100 million microbes, over a thousand different species.

And they've tested whether or not this affects humans, and what they've discovered is

that when you eat these foods, these living foods, you consume that microbiome that comes from the plant, it mixes with your own microbes and it will show up in your microbiome. So there's an exchange that occurs, and there's this code, I would call it the "microbiome code" that exists, that's out there in nature, and it's active right now, it's not just inside our colon, it is the entire world, and we are connected to that world through these microbes, which is kind of mind blowing.

Shawn Stevenson: Yeah. Man, that's so nuts, so crazy. Again, there's so many things I want to ask you about, but we have to talk if we can quickly even about poop. Poop has a secret, there's a secret life of pets, there's also a secret life of poop. Can you tell us one of the most profound things... What we generally think is that poop, that's food waste, but it's more than that. So can you talk a little bit about it?

Dr. Will Bulsiewicz: It's so much more. And it's kind of funny because what I have discovered as some of my most popular content is when I start talking about poop, because everyone wants to know, and whether they will admit it or not, every single person poops, except my wife.

Every single... Every single person poops...

Shawn Stevenson: And Beyonce. And Beyonce.

Dr. Will Bulsiewicz: Except my wife. And your fiance. So...

Shawn Stevenson: No, no, no, I said, "Beyonce. And Beyonce."

Dr. Will Bulsiewicz: Beyonce, got you.

Shawn Stevenson: Don't get me in trouble.

Dr. Will Bulsiewicz: Beyonce I'm quite sure does not poop. She does not poop. And it's interesting 'cause I actually put an entire week on this topic into my course, I have an online course, and people love it, they eat it up because it's quite fascinating to consider that we think of it like you said as excrement, it's just like the waste of our food but that's not true. If you were to actually look at your stool, what you would discover is that 70% of the weight of your stool comes from your microbes, it is a living reflection of your microbiome. And if we want insights into the health of your microbiome, this is what we should be paying attention to, so why are we looking at heart rate and blood pressure and temperature but ignoring the way that our poop looks? If the most important part of human health is this microbiome that lives inside of you, if this is important, if you

believe my message that gut health is critical to human health, then we all should be paying attention to our bowel movements 'cause that's what gives us the most clear picture of what's actually happening inside of us.

Shawn Stevenson: Man profound, that's so profound. In the book also you talk a little bit about some of the profound signs with fecal implants, so again, I want everybody to check it out, check the book out because that's fascinating. But I want to spend some time in talking about the fiber solution, I want to talk about "Fiber Fueled". Why did you title your book that, and what does that really boil down to? What are the actionable steps there, and the benefits that we get from that?

Dr. Will Bulsiewicz: Alright, shout out to everyone who's at home and has hung with us this entire time, 'cause I think I'm about to open up the can, that's the most important part right here. Alright. This is where you get the actionable steps that you really need to make a game-changer for your gut. So I called my book "Fiber Fueled", and when I went to sell my book people told me, "You'll never be able to sell a book titled 'Fiber Fueled'," which is kind of funny to me 'cause we're doing okay. And the reason why I wanted to call it that is that I view your gut microbiome as an engine, it is the engine for human health, it wants you to thrive, but if you want that engine to thrive and to work, you have to fuel it, you have to feed it, and its preferred food is fiber, the preferred food of your gut microbes is fiber. And this is not the fiber that we grew up thinking about in Metamucil, the orange drink that my grandma used to drink so that she could poop. That's not what I'm talking about.

So let me break down fiber real quick, and then let's break down how you actually go about doing this. Fiber is not just grams, it's not something also that just goes in your mouth, and passes through inertly, and then comes out the other side as a torpedo. There's so much more to fiber. Fiber is a part of plants, every single plant has fiber, you don't need to find special plants. If you say, "Oh, which plants have fiber?" Guess what? They all have fiber. And fiber is not just about grams, so let's not compare fiber from a Fiber One bar to fiber that you're going to find in kale or in a bean. Every single plant has its own unique types of fiber. Now, what happens with this fiber? Fiber passes through the intestine, and it enters into the colon, and the soluble fiber, the prebiotic fiber that feeds our microbes, what happens is that fiber enters the colon where these microbes are all hanging out, and they spring to life, and they get into an absolute feeding frenzy because you're giving them their food. They consume the fiber, the fiber doesn't go in the mouth and come out the other end, it gets consumed by these microbes. They actually metabolize it.

When they metabolize it, the microbes themselves will multiply, they will grow stronger, they will become more capable of doing their job which is to help you to take care of your health. And then these microbes, they want to reward you. They want to pay you back. "You feed us, and we're going to feed you." And the way that they do that is by taking the fiber, and it's like some Harry Potter stuff, man, they transform it, and what you end up getting is what are called "short-chain fatty acids". Some of you guys have heard of this, butyrate, acetate, propionate, these short-chain fatty acids are the biggest thing in all of nutrition that I've ever come across. And I'm shocked that we're talking about so many other topics in nutrition, and not enough about these short-chain fatty acids, because if you ask me, "What is the single most powerful anti-inflammatory thing that you could come up with?" This is it, short-chain fatty acids, butyrate, acetate, and propionate. What they do real quick is they actually, they change the microbiome, they empower the good guys, they suppress the bad guys like E.coli, salmonella, Shigella.

I'm sure some of you guys at home have heard of leaky gut, they repair and reverse leaky gut. Colon cancer, our number two cause of cancer death in America. We've got a big colon cancer problem. We diagnose 160,000 people per year right now. Short-chain fatty acids directly impair the development of colon cancer. They affect our immune system. I could talk to you for a half-hour about how they affect our immune system. The point is, what they do is they optimize it, they get us in a better position to protect ourselves whether it be from infection, or reducing our risk of allergic issues and autoimmune issues. They affect our metabolism, they activate our satiety hormone so that we don't over-eat so that we can maintain a healthy weight balance. They travel throughout the entire body having healing effects, they travel to the heart, and we think that they reduce the likelihood of developing coronary artery disease, our number one killer. They travel to the brain, they repair the blood-brain barrier. They cross the blood-brain barrier.

And we actually, Shawn, we have evidence that these short-chain fatty acids can actually reduce the likelihood of developing Alzheimer's disease. They've shown a mechanism where it actually is suppressing the development of what are called "beta-amyloid plaques" which is how Alzheimer's disease develops. Can you imagine what the drug companies would pay for a drug that they could say does that? And we have it, and we have it right now, and it's in the form of fiber. But here's the problem, the average American is getting about 15 grams of fiber per day because we're not eating enough fruits, vegetables, whole grains, seeds, nuts, and legumes; the average American's diet is 10% plants, mostly potato chips or fries, 10% plants, 60% processed foods, 30% animal products. And if we want to get the fiber where it needs to be, we

need to rev up our consumption of these fruits, vegetables, whole grain, seeds, nuts, and legumes. And there's one key, one key that I want everyone to know, and here's the number one takeaway.

And I think that this is relevant like I'm not telling you guys that there is only one path to a healthy diet, there are many paths. But I'm telling you right now, no matter who you are, no matter what dietary pattern you follow, paleo, keto, vegan, agnostic, standard American diet, I want you to hear this one thing. They did a study, Shawn, you know this from reading the book, called the "American Gut Project", it is the most well-positioned study to allow us to connect the health of our microbiome to our diet and lifestyle. There is no better study to look at this. And when they analyzed that, this is not an agenda, this is just an analysis, and what they found is the single greatest predictor of a healthy gut is the diversity of plants in your diet. So here's what I say, stop counting calories, start counting plants. Stop counting grams of fiber, start counting plants.

If you do these things, you will be feeding your microbiome, you will be supporting all of these different species and microbes, and because your gut is going to thrive, you are fueling that engine, and you are going to find that you feel the health effects throughout your entire body, your gut health, your digestion, your immune system, your metabolism, your hormones, your mood, all of that, basically just by following a simple rule, get more different varieties of plants in your life now.

Shawn Stevenson: Profound. That's a mic drop moment right there.

Dr. Will Bulsiewicz: Boom, I'm out. Thanks, guys Model health. Peace.

Shawn Stevenson: But I got to ask you the complex question right now because you've said this throughout this interview, which is wonderful, there's so many different diet approaches, and you're not saying what's best for each person, but you know, and this is why I'm so excited to ask you this question specifically. You're a physician who studies the gut, and you're looking at the results that can take place when we're changing the foods that we eat, but there is some controversy in certain diet circles around fiber and the necessity for it, so what would you say to that controversy? And just kind of reiterate why fiber is important, and also if you can drop a nugget about postbiotics.

Dr. Will Bulsiewicz: Alright. So, why is fiber important? We have too many studies at this point, between the American gut project and studies looking at, for example, the Hadza, which is a tribal population that lives in Tanzania, that have shown us this direct connection between the diversity of plants within your diet and the diversity within your

microbiome. So let me unpack this just for a moment, and then I'm going to go beyond this to explain even more clearly, Shawn. Bio-diversity is a really important word in 2020, and if you guys haven't been hearing about bio-diversity, then it's time that we all become more familiar because when we talk about the health of our planet, biodiversity becomes the critical word. When you think about the fires that were burning in the Amazon rainforest, biodiversity is what we were taking away, which threatens the stability of that ecosystem. When you think about the Great Barrier Reef, biodiversity is being taken away, which threatens the stability of that ecosystem. And when you think about your gut microbiome, destroying the diversity within your gut threatens the stability of that ecosystem. And so it's true on all of these different levels, Biodiversity is the key. We want biodiversity, and what we have seen repeatedly in study after study is that the diversity of plants, because of the different types of fiber that each plant consumes, is what ultimately leads to better bio-diversity within our gut, as we restrict.

For example, if I say I'm not going to eat beans anymore, just as an example, and I remove those beans from my diet, I'm going to tell you right now there are microbes that thrive on those beans, that is their preferred food, they're picky eaters, and they're not going to be able to eat anything else. And so when you withdraw the beans, all of those microbes start to shrink, grow weaker, at some point, they become incapable of doing their job and they potentially can go extinct. And so we don't want less biodiversity that threatens the stability of the ecosystem, we want more bio-diversity and the way that we get that is by eating a diversity of plants. So people question the need for fiber when, from what I observe, there is a misunderstanding about fiber because they treat it as if it just goes in the mouth and comes out the other end, when in fact, if you zoom in on this connection between fiber and our gut microbes, fiber becomes critically important. And just to take it home, two things, Shawn. Number one, when they looked at the Hadza, this tribe of people that lives in Tanzania, they have 40% more biodiversity than we have in the United States, they have 30% more biodiversity than people in the UK, and when they look at the diversity within their diet, the Hadza are eating 600 different varieties of plants on a yearly basis, 600, because they're just scavenging.

These are hunters and gatherers, they're not going to Whole Foods, and I would challenge each of you at home to ask yourself the question, legitimately, how many plants have been in your diet this past week, and if that number is less than 30, then we got to step our game up. We got to step our game up because we need to be getting at least 30 different plants in our diet, that was the number in the American gut project that was connected to the healthiest gut microbiome. One last thing, there is a

researcher who is at Stanford, and he was involved in both the Hadza studies and also this study that I'm about to tell you about, where he looked at the gut microbiome over generations. Now, you can't do this in humans because we might live 30 years before we have kids.

So what this researcher did, his name is Justin Sonnenburg, he looked at the microbiome over generations of mice, in three, four, five generations from great-grandma all the way down, and what he's found is that if you put mice on a low fiber diet, there is a progressive loss of biodiversity within the microbiome that will occur through those generations, and at some point it becomes irreversible. At some point, if you continue on a low fiber diet, you will permanently lose the ability to get back the biodiversity within your microbiome. But there was an intervention that worked. There was an intervention that allowed him to restore the healthy gut microbiome, and that was the earlier that you re-introduce fiber, the better your gut will recover and get it back. So that's why I would say to everyone who's listening at home, fiber from a diversity of plants is the key to a diverse microbiome, and we, as a society have lost track of this, and now is the time for us to restore our gut health and wait no longer because it could have implications for your kids.

Shawn Stevenson: Yeah. Dr. B, this been phenomenal, phenomenal. So much incredible information and insights, and I think that this is a really important time, we've been talking about this collectively outside of the show, but this is an important time for the humanity, period, but just being able to get access to information like this and also the ease of it, like what you're sharing is such a simple principle, but it's like us getting these legs under the belief system, and you've really helped to create some sturdiness I feel today for so many of us to put legs under the need for us to invoke the benefits of a variety of plants and just making that a target. I love when you mentioned to stop thinking in terms of grams of fiber, I think in terms of number of plants. Really powerful insights, man. Can you let everybody know again, where they can connect with you, pop-in on Instagram, so much great content there, and also where they can find your book.

Dr. Will Bulsiewicz: Yeah. You guys, thank you, first of all, Shawn, so much for having me on the show, man. Really appreciate it. And I think everyone who gave a listen to us, and you can find me on Instagram @theguthealthmd, and I have the same name, by the way, on Facebook, you can find me there. And my book is called Fiber Fueled, you mentioned that a couple of times, Shawn, thank you. And my website is theplantfedgut.com. I have a lot of great resources. I got an email list that people really seem to dig where basically when a new study comes out on the microbiome, guess what? You'll be getting an email, I'll break it down for you. I'll tell you what you need to know. And I have an online course that we

just wrapped the first round, and the feedback has been incredible that I'm super excited about. So anyway, I thank you everyone for coming and checking this out, and if you enjoyed the show, the other thing is, help us get the word out, share it. Help us get the word out, share this because it helps to put high-quality information. And the thing that we need more than ever right now is we don't need more information, what we need is we need to elevate the high-quality information so that we can drown out the low-quality information that's just confusing us.

Shawn Stevenson: Absolutely, powerful way to wrap man, and you know this, the cream eventually will rise to the top, and thank you so much for being a true pioneer in this space and doing the work that you're doing, but most importantly, packaging it up in a way that you can share it and share your knowledge, not just with the incredible people who have the access to you personally with your clinical practice, but also sharing it with the rest of the world, and it's such an important time right now, and I'm grateful to connect with you and have you as a friend now, and everybody, make sure to check out Dr. B's new book, Fiber Fueled. Follow him on Instagram and share this out. He already said it. Sharing is caring. So get this out to everybody you care about. I appreciate you so much, Dr. B, everybody.

Dr. Will Bulsiewicz: Thank you, my brother.

Shawn Stevenson: Thank you so much for tuning in to the show today, I hope you got a lot of value out of this, and we just took an incredible journey through truly what's the final frontier in health and wellness in looking at the microbiome from different angles, different dimensions, and I love bringing a variety of voices into this conversation, and Dr. B is one of the foremost experts in this subject, so just really excited to have him on and to have this conversation, and he alluded to the fact that it's really about having this dynamic, inter-working Symphony, really, we can make the analogy of a rainforest within our gut, or Symphony and everything having a role, and when something's missing, you know it, there's something off and it can lead to a cascade of the wrong notes getting played, the wrong music, the melody's off, or a breakdown in the ecosystem, and so understanding that we've got sound data now, and seeing our microbiome devolving over the recent decades, and him alluding to the fact in that closing study that we could potentially be creating a template where this can be something that's not able to change and seeing successive, in these animal studies as the generations go on, having less and less diversity. But we can change it, we can do something about this right now. It all starts with the awareness that's always a seed, just like the fiber is being the seed of helping the bacteria to create their...

So we know about... Of course, we talked about this a little bit as well. We've got probiotics, we know about the prebiotics, the food that they need to thrive. But then you have the post-biotics, which he talked about SCFA as being one of those things, short-chain fatty acids, but these microbes have this wonderful role that they play, the symbiotic relationship that they play for us creating nutrients in us for us that we need to thrive, and that's what these post-biotics are, so that category. So all this matters is this wonderful balance, but it starts with our awareness, and so taking advantage and employing this information in our lives in a day-to-day basis, this is a super simple practice, but the question is always, "Are you doing it?" And also understanding our microbiome individuality, our unique fingerprint, our microbial fingerprint that certain foods are going to work great for some people and not for others, and so when he mentioned beans, for example, somebody who would seem like a polar opposite perspective, we talk about when we had Dr. Steven Gundry on who's really brought forth the public awareness of lectins, these kind of toxic damaging substances within foods, and him talking about beans because that's what a lot of his patients were eating, and him coming to the place of this can actually be beneficial.

It's also in the preparation of them... Right, and are you using a pressure cooker, are you soaking them because we just have the paradigm beans, beans, go for your heart, the more you eat the more you fart. Beans beans, the natural fruit, the more you eat, the more you poop. Is that how it goes? I don't know, that wasn't my go-to. But when we understand we've got these different beliefs about beans, for example, this category, but there are cultures thousands of years have been thriving through the use of this food group, is it all of a sudden a bad thing, and I just want us to question those things, and the question, is it right for me? Is it right for me right now? And that can change. And this isn't a promotion for a certain type of food, because again, we're unique and it's about finding the things that are great for us right now, and ultimately, especially if we want to experience a greater level of health, I think that the goal of diversifying our food intake, diversifying the nutrients that we're extracting from our foods and helping to support the diversity in our gut can really be a game-changer.

So again, thank you so much for hanging out with me today. I hope you got a lot of value out of this. If you did, please share it out with your friends and family, and of course, you can tag me, I'm @shawnmodel on Instagram and tag Dr. B as well, and same on Twitter and on Facebook, I'm @themodelhealthshow, just let everybody know this information is viable, that it exists and that it's powerful, and just to help to shift the conversation a little bit, we're talking about today, one of the most important subjects is our immune health, and our gut is one of the primary places of transformation that we can have right now. As Dr B mentioned, the majority of our immune system is

actually residing in our gut, so this really does matter. I appreciate you so much. We've got some epic episodes coming your way very soon, so make sure to stay tuned. Take care. Have an amazing day and I'll talk with you soon.

My brand new book, Eat Smarter is on the way. Eat smarter is the first book to take you behind the scenes and show you how your metabolism really works, demonstrating specific foods and nutrients that control your metabolism and influence things like fat loss and weight gain, but you'll also discover how certain foods and nutrients control your cognitive function and influence things like your attention span and your working memory. Plus, you'll also learn the latest information on how food controls your sleep, and the surprising science around how food controls our emotional stability, and how we interact with each other.

It's a very special book and part of an initiative to change our health and wellness systems. And right now, when you pre-order Eat Smarter, you also get instant access to a brand new mini-course, the 10 Foods Proven To Optimize Your Fat Loss Hormones for free. It's a $97 mini-course, you get an instant access to when you pre-order Eat Smarter. So go to eatsmarterbook.com right now, and pre-order the book and get your free mini-course. Eat Smarter: Use the power of food to reboot your metabolism, upgrade your brain, and transform your life.

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