

David

Will. Great to have you with us today. Where does this podcast find you?

Dr. Will Bulsiewicz

David. Thank you. Thank you for having me. I'm in Charleston, South Carolina.

David

Wow. Is it, like, incredibly hot there right now?

Dr. Will Bulsiewicz

Yeah, we do have hot summers. They are quite humid, but but to be honest with you, because we're coastal, I think that the the ocean and the coastal breezes help quite a bit. Yeah. And so don't get me wrong, it's hot. But we also have a lot of water. And if you jump in the water, you feel much better.

Dr. Will Bulsiewicz

I still enjoy it though. For some people, the summertime is the worst time of year here, and.

David

I've only been there once and I was shocked at how beautiful it is. Lovely place.

Dr. Will Bulsiewicz

It's a great place. Conde Nast rated us the number one place in the world to visit, even above Paris and ever since that happened, we've had a lot of people coming to visit. So. But it's a great place.

David

Let's bust into it. I want to know a little bit about your background. You're an MD and you've had some issues with your own health. Talk to me a little bit about that journey.

Dr. Will Bulsiewicz

Yeah, this goes back 30 years to when I was a teenager. My dream was to be a medical doctor. And so I set off on this mission, and it was 16 year path. And in that path, I mean, it's like you're growing and becoming an adult, right? I mean, I went

from 18 into my 30s, mid 30s, and in the process they basically ask you to give everything to your job.

Dr. Will Bulsiewicz

Right? So it just is completely consumptive, 80 to 100, sometimes more than 100 hours a week. And in there there's just not a lot of room for yourself. And so for me, I've always found joy in food about food. So when I did have a spare moment to me, the way that I rewarded myself for this hard work because you are working so hard, you deserve to treat yourself.

Dr. Will Bulsiewicz

It was through food, but I didn't have any money. And to be honest with you, I wanted convenience. So I ate a lot of fast food and I paid the price not immediately, but over the course of time, this started to catch up to me to where I was in my early 30s and we're talking about about 15 years ago.

Dr. Will Bulsiewicz

I'm in my mid 40s now, and I was in my early 30s and had high blood pressure, high cholesterol. I was 50 pounds overweight. I had tremendously low self-esteem. And, you know, these things that were happening for me, I was depressed, but I was just not in a good place. I was a dark place. All these things that were happening to me in this moment.

Dr. Will Bulsiewicz

If you didn't know me in great detail, you would have never known on paper, it looked like my life was perfect. I went to Georgetown for medical school. I got into my number one choice, northwestern, for my residency in Chicago. I was the chief medical resident at northwestern. I won the highest award that they gave in that program.

Dr. Will Bulsiewicz

I went to my absolute number one choice for my gastroenterology fellowship. I was on a grant from the NIH and yet I was miserable, and I had tremendously low self-esteem, and I knew that things needed to change. I knew that this was not sustainable and I didn't know how to do it. I tried to exercise my way out of it being a like, you know, 30s, single male, and it didn't work.

Dr. Will Bulsiewicz

Actually, even though I worked really hard, it did not work. So ultimately what I discovered is that it was by changing my diet and paradoxically, nurturing my gut microbiome turned out to be the solution. And the fascinating, crazy, kind of sad part

of this is that these were not things that I was trained during the 16 years of medical education.

Dr. Will Bulsiewicz

We American institutions. These are things that I had to discover through independent research, self-discovery and testing on myself. And it changed my life and it put me in a position where, as someone who cares deeply again, this has been my lifelong dream to be a medical doctor. As someone who cares deeply about that and my responsibility to my patients from that point forward, I felt that I have a compulsion.

Dr. Will Bulsiewicz

I have no choice. These people deserve to hear about these things. I am responsible for learning more about these things and delivering that to them. And so it completely changed my career. It was never my plan to write books or to do any of the things that I'm currently doing. It just happens because basically, I felt that I needed to share the story, and in that need to share the story, things just kind of escalated to where we are today.

David

It's often I find that doctors, especially in their early lives, it's just horrible. It's so anti health practice.

Dr. Will Bulsiewicz

So it's the number one cause of death among cardiologists is heart disease. Yeah I mean what else. You know what more do we need to say.

David

I have a lot of friends and acquaintances that are in the medical profession. And it's just boggles my mind. It's interesting what you're talking about. It's almost like there should be sort of two branches of medicine. There should be health care, and there should be disease management. And it's like it's all about disease management. And the fact that you went through gastroenterology, I didn't talk to you about food.

David

Like that's what goes into your gastrointestinal tract. I don't get it.

Dr. Will Bulsiewicz

Oh, absolutely. And there's a shot and there's a shocking number of gastroenterologists that to this day, because we're not trained on this, it's not their fault. They're not educated on this. They don't believe that the food even matters,

which is insane to me. It makes it makes no sense. And I don't want to spend time waste time on unpacking that idea.

Dr. Will Bulsiewicz

That just makes no sense. But yeah, you know, the issue, the issue, I think, David, is that there's historical reasons for the construction of our healthcare system. It's hard to turn it back. And, you know, our politicians, they're not able to agree on anything, let alone how to do big, big things like how to like change and reorient our healthcare system.

Dr. Will Bulsiewicz

But really, where we are today comes out of World War two, and specifically the discovery of penicillin, which was the greatest discovery in the history of medicine. And we all benefit from this. But we were seduced by the pill. It was the realization, oh my gosh, look at what you can do with milligrams of material. It's so powerful.

Dr. Will Bulsiewicz

And we became obsessed with it. We built our health care system around that. We trained our medical students around that. I mean, we have literally months and months and months of pharmacology courses, months. We don't have even a month of nutrition education in medical school. And, you know, and part of the issue, too, is that we like a doctor appropriately.

Dr. Will Bulsiewicz

This I mean, there's some there's a good reason for this. A doctor appropriately is trained in a hospital where the people are sick. Right. So your job is to be able to like basically care for the sickest of the sick people. But the problem is that then your career completely shifts when you finish your training and you enter the real world, you enter the workforce as a board certified.

Dr. Will Bulsiewicz

You know, for me, gastroenterologist, and you discover that the real world is radically different than what you were actually trained to do, because you're in a clinic with people and you're like in a position where you could prevent disease, but you're not trained how to do that, and the system doesn't want to support you in doing that, because if the system wanted to support you, they would pay you to do that, and they don't.

Dr. Will Bulsiewicz

So it creates a situation where it's just sort of a vicious cycle of this machine keeps rolling forward. And I don't know how we break that, because the problem with trying

to break that is that doctors who take it upon themselves to try to disrupt the system, they pay the price themselves in the process. It's hard.

David

A large topic that we can for another day.

Dr. Will Bulsiewicz

100%.

David

Some strong feelings on that, but we're not going to get into it. Let's get into something more basic. Let's talk about fiber. Talk to me about the different kinds of fiber and why we need them and what they do.

Dr. Will Bulsiewicz

Okay, well, I think we have to start with this foundational idea, which is that we were all raised to envision fiber a certain way. There's like a certain way in which fiber has always been marketed. It's the orange drink. Grandma sits there and she stirs the orange drink. Oh, and she and she drinks it down.

David

So that she can have.

Dr. Will Bulsiewicz

A poop, right? Could we could we create a less appealing image of fiber? We make it any more boring and unattractive. And the thing about it is that I sit here and I feel like a crazy person sometimes, because I think fiber is this attractive, sexy thing that that is an opportunity for the vast majority of people who are listening to this podcast right now.

Dr. Will Bulsiewicz

And even if you're not fiber deficient, which, by the way, the reason why I say this is 95% of people are fiber deficient in the United States. Even if you're not fiber deficient, there are ways in which we can optimize that. You and I will discuss to improve our overall health. So fiber taking it from the top fiber is the way in which we describe a certain class of carbohydrates found in our food.

Dr. Will Bulsiewicz

All right. And it's a broad term like there's not just this one type of fiber. There are perhaps millions, perhaps billions of types of fiber. It's a complex long chain carbohydrate. So a carbohydrate is just sugar, right? Sugar one molecule like that is a simple carbohydrate, pieces of sugar together. It gets more complex and eventually you create fiber and fiber.

Dr. Will Bulsiewicz

What's unique about it that actually turns out to be super power is that we as humans lack the enzymes to break down and process fiber. So it survives digestion and it's able to pass unchanged down to our large intestine, which is our colon. And in that place, the large intestine, there are 38 trillion microbes. That is our microbiome, our gut microbiome.

Dr. Will Bulsiewicz

And they are as alive as you and I are, mostly bacteria also includes things like yeast or these ones called archaea that I love. And they're they're a bit like humans. They, they have different skill sets, difficulties. They have different circles of friends that they like to hang out with. They have certain ones that they don't get along with.

Dr. Will Bulsiewicz

They have different personalities and they have different preferences in terms of their food.

David

Have you ever gotten a call from Disney about this?

Dr. Will Bulsiewicz

It sounds like a new, yeah. What was the one that came out to be like number three of the new Disney movie? No. Know I have four kids, I apologize. Okay, so anyway, these microbes, they're as alive as you and I are. And the problem is that we we pretend that they're not there because we can't see them with the naked eye.

Dr. Will Bulsiewicz

But if we had a microscope, we would zoom in. You know, I'm quite sure when we fly on an airplane, you look down in the world, you know, there's people there. You just can't see them. And it's conceptually the same here, which is that we know these microbes, 38 trillion of them are there. They outnumber our human cells.

Dr. Will Bulsiewicz

We are less than 50% human. And they have really important things that they do. And one of them is they unpack the fiber. So the enzymes that we lack, they have, and they go to work in teams and they unpack the fiber. And this is a really important thing because everything that we're going to dig into in terms of the benefits that come from fiber, nearly all of them are the result of our microbes coming into contact with the fiber, unpacking it and transforming it.

Dr. Will Bulsiewicz

And what they create are called short chain fatty acids. And for people who are as nerdy as I am, you may have heard of these. Butyrate acetate propionate. The short chain fatty acids are what ultimately provide the benefits that we receive from fiber. And those benefits are right there in the gut. But also they get into our bloodstream, spread throughout our entire body, and they can have far reaching effects from our brain, our brain barrier, our heart, our blood vessels, our kidneys, our liver.

Dr. Will Bulsiewicz

I can go through organ by organ. I'll spare everyone that I'm I'm a medical doctor. So this is the way that I think about things. But the bottom line is that these are the most in my, you know, more than 20 years of study in medicine. These are the most anti-inflammatory things that I've ever come across. And they are the result of not just fiber, but fiber coming into contact with microbes.

Dr. Will Bulsiewicz

And that's the magic that happens.

David

My understanding is there too. Well, I just learned there's lots of kinds of fiber, but in general there's the soluble and insoluble.

Dr. Will Bulsiewicz

Yes. Yeah. So these are properties of the fiber. And it's a way for us to simplify and describe the type of fiber that we're dealing with. So soluble is referring to the type of fiber that will dissolve if you put it into a drink. So there's types of fiber that I'll put in my coffee for example I did this morning.

David

What did you put fiber. Did you put in your coffee.

Dr. Will Bulsiewicz

There are many different types that you could put. So an example of one which is a soluble again a soluble fiber is Acacia. So acacia which is acacia you get it organic and you quite simply add it to your coffee stir, it disappears. You would never know it's in there. And yet you are feeding your gut bugs. And when an hour later you have a vigorous, robust bowel movement.

Dr. Will Bulsiewicz

You know, part of the reason why this is happening so now that soluble fiber and soluble fiber, the reason that this classification is important is that most soluble fiber is the type that feeds our gut bacteria and produces short chain fatty acids. So when you if you want short chain fatty acids and look for soluble fiber, the alternative is insoluble and this word just quite simply means it will not dissolve.

Dr. Will Bulsiewicz

Doesn't matter what you do, you could boil it heat, it doesn't matter. It will not dissolve. This is the grit. This is the part of the fiber that you know. You make the orange drink and there's some stuff down at the bottom that's the insoluble fiber. Now, insoluble fiber is more of the traditional teaching of fiber that we learned back in the 80s, which is that it goes in the mouth, it's sweeps its way through, it comes out the other end.

Dr. Will Bulsiewicz

Right? And it's like this inert substance that doesn't do anything that's insoluble fiber. Insoluble fiber is generally, generally. And this is not absolute rules, but generally not food for the gut bugs. It does, though, help us with some things, such as it helps us to control our cholesterol. So it's not that insoluble fiber has zero nutritional or health value.

Dr. Will Bulsiewicz

It's that insoluble fiber has a different effect than the soluble. Now, the thing about fiber, David, is that, you know, these types of things, people are like, okay, well, which one do I want and what proportion? How do I get it? Okay. The answer is so simple. Like, although this biochemistry, although biochemistry is complex, the answer is so simple.

Dr. Will Bulsiewicz

Nature provided it for us. Fiber is found in plants, so all fruits and vegetables, whole grains, seeds not so legumes. They all have fiber. Mushrooms technically are not plants. Many people don't realize that they're actually fungi, but they have fiber. So, with just make mushrooms honorary plants. Okay, so now all of these different plants have fiber. All of these different plants have both soluble and insoluble fiber.

Dr. Will Bulsiewicz

And they have many, many types of fiber. And those types of fiber are unique. A person would not, you know, claim that the protein in a fish is the same as the protein in a bean, or the same as the protein in a cow? They're different in the same way, the fiber in greens is different than the fiber in an apple.

Dr. Will Bulsiewicz

They're not the same.

David

Where I hear you going with this is we want to eat a variety of plants to get a variety of fiber.

Dr. Will Bulsiewicz

Oh my gosh, for the people who are big doctor B fans that are listening right now, I did not teach David to this, David, this before the podcast. But David, you just that actually is the core message that I literally call the Golden Rule from my first book, Fiber Fueled. And that is one of the principal messages that we have with the personalized nutrition company that I'm the US medical director called Zoe, and we'll talk more about that.

Dr. Will Bulsiewicz

But so what you just said you eat a variety of different plants because a variety of different plants have a variety of different fibers. And I'll just pick up where you left off, which is to say that a variety of different fibers feed a variety of different microbes. So when we have variety in our diet, we are creating in parallel by diverse microbiome and a diverse microbiome, which by the way, this microbiome, it is an ecosystem in the same way that if you take a walk through a beautiful forest or you are swimming in the ocean, right?

Dr. Will Bulsiewicz

These are ecosystems inside of us as an ecosystem and the measure of health within an ecosystem is biological diversity. And so that matters with us. Two that matters with our microbiome. Biological diversity is a resilient strong a microbiome. So when we consume a variety of different plants it translates into diversity within the gut. And this is not just like a intuitive this is scientifically proven.

Dr. Will Bulsiewicz

The American Gut project which is the largest, by the way, it's not just Americans. It's actually an international study. The largest study at the time, to allow us to make

connections between our diet and lifestyle choices and our gut microbiome. What they discovered is that the number one factor in determining a healthy gut microbiome was the diversity of plants in the diet, specifically, the people that were eating at least 30 varieties per week were the ones with the healthiest guts.

Dr. Will Bulsiewicz

So if there's only one thing that our listeners take away today, let it be this stop counting grams of fiber. And I might even go so far as to say, stop counting calories and start counting plants. Because if you do this, you will bring diversity and variety into your diet. It is delicious, it is nutritious, and it is fantastic for your gut microbiome.

Dr. Will Bulsiewicz

So this is this is one of the essential parts of health that actually is receding in the modern world very rapidly. You know, for example, David, you go into the supermarket, 75% of the plant based calories in your supermarket come from three plants wheat, corn and soy. That is not going to get the job done. So we have to take it upon ourselves.

Dr. Will Bulsiewicz

We can't just eat what the food system feeds to us. We have to make the choice.

David

I keep thinking you and Pixar need to get together with the USDA and make an animation. Your description of these things is just it's it's so perfect. The storytelling is really wonderful. I just want to tell you, well, well, I.

Dr. Will Bulsiewicz

Appreciate you saying this. So I mentioned I have four kids. So my oldest is ten, but I have two kids who are two and under and part of motivating children to eat the things that we want them to eat is to present it to them in ways that are fun. Right? So none of us, including my kids, they don't want to be told what to do.

Dr. Will Bulsiewicz

I don't want to be told what to do. Right. But if you show me and you make it attractive, then I will want to follow. And so that's the way it works with in our house. And this is one of the things that people can bring into their homes, whether it's for you or with your with your partner or with your children.

Dr. Will Bulsiewicz

Gamify it. Make it fun, right? However you choose to go about that. Have a challenge with one meal. Have a challenge for the week. Put a piece of paper on the refrigerator and keep score. And let's see what.

David

Happens back in the fiber. Does applying heat cooking? Does it have an effect on any of the fiber properties that we just discussed?

Dr. Will Bulsiewicz

It does. yeah, that's a great question actually. So we have to separate the word processed from ultra processed because ultra processed foods, we're increasingly learning about the detrimental effects. Not to say that they're all bad. They're not. That's not fair. But there's definitely something going on there. And it's different from processed and processed. This cooking process is even chewing.

Dr. Will Bulsiewicz

So our food is processed. And one of the ways that we are different as humans compared to other animals is that we cook. And what's interesting is that the properties of our food do change when we cook them. And one of the ways in which they changes the fiber changes in people that have digestive health problems. I would never sit here and advocate for a raw diet ever, because they would feel so unwell, and it's a lot harder for the body to process and digest when we cook our food.

Dr. Will Bulsiewicz

Because in the way that you just asked, we are transforming the fiber. We find that it's actually much easier for us to process and digest it. And the interesting thing is that there's some research out of the University of California, San Francisco. There's a gentleman out there. His name is Peter Turnbaugh. And what he found is that if you take the exact same food and you cook it, it actually has a slightly different effect on the microbiome.

Dr. Will Bulsiewicz

So here's a quick little hack within the context of this idea of dietary diversity. So I'm saying eat a variety of different plants. Yes. But you could actually take the exact same plant and eat it two different ways and have slightly different effects on the microbiome. And that is a beautiful thing. So if you're taking your kale and your plan is to steam your kale, I'd advise you to munch on at least a little bit of that raw kale so you can have that.

Dr. Will Bulsiewicz

In addition to your steam kale. That's like having two different plants.

David

That's brilliant. Wow, I love that. Let's move to some of the things that this sort of stuff that I get all the time. Gluten. There's some strong feelings on this. Give us your thoughts on this.

Dr. Will Bulsiewicz

Well so gluten you know, part of this is that science and where we were at the time was science. Because science evolves, it's constantly evolving. I mean, it's evolving as we see here right now, where we were about ten years ago coincided with a popular health movement to go gluten free all at the same time. And it led to some massive books.

Dr. Will Bulsiewicz

and I know the authors who wrote the books. They're good people. But where we are today in our understanding of gluten is different than where we were ten years ago. So let's talk about gluten. Gluten is a protein. So that's number one. It's a protein. And it is found in specific foods. Wheat barley and rye. Wheat is the big one because wheat is in lots of stuff and not just bread.

Dr. Will Bulsiewicz

There are tons of ultra processed foods that contain wheat, which is part of the context that we need to use to understand why do so many people say they feel better when they go gluten free? Part of it, particularly, you know, ten, 15 years ago, part of it is that back then, if you weren't good free, it was hard.

Dr. Will Bulsiewicz

It was hard for people who had celiac disease. They were my patients because they, had to actually cook their food. There weren't a lot of ultra processed foods that were convenient and easy for them. The world is changed now. We got both gluten containing and gluten free, ultra processed foods more than readily available for us during this period of time.

Dr. Will Bulsiewicz

What we were taught is that gluten is inflammatory, that gluten causes all of our health issues. Okay, well, this is not we can't say that this is true at this point, but we can say is that there are differences in dietary quality. There's clearly a difference between white bread, any slowly fermented sourdough bread made with whole wheat. Both of them contain gluten.

Dr. Will Bulsiewicz

So we have to see these distinctions. Now I want to unpack a few of my favorite gluten studies just to try to illustrate a few points, if that's okay, because I think it's easy for us to do it. Yeah. so and before I jump into this, let me first say that there's one caveat to this entire conversation, which is that if you have problems with gluten containing foods, if you have problems with wheat, barley, and rye, I am telling you, as a gastroenterologist, you need to talk to your medical doctor and be tested for celiac disease, because if you have celiac disease, you need to be gluten free for the rest of your life.

Dr. Will Bulsiewicz

And that is not debatable, and there is no way to bring it back in safely. All right. Celiac disease, by the way, is a genetically motivated autoimmune health condition where when people consume gluten, they they get inflammation in their gut. They may have inflammation throughout their entire body. They may have arthritis or skin issues. All right. That's that's a health condition.

Dr. Will Bulsiewicz

That's not the rest of us. 99% of us don't have that. So a few a few things. Number one, many people, they will consume gluten containing foods and they will say, oh, it caused inflammation. And what do you mean? Well, I feel bloated, I feel bloated, or my stomach is upset or my stomach gets distended. Okay, so there was a study that was published in the journal Gastroenterology, which is one of the elite medical journals in my field.

Dr. Will Bulsiewicz

And what they did, David, is they sent people home with three types of breakfast bars a gluten containing one, a fruit ten containing one fruit in is what we call Fodmap, which basically means it's a fermentable carbohydrate in the same family as things like lactose. You know, you hear about people being lactose intolerant. Lactose is a Fodmap, and I'm telling you that fructose corn is a Fodmap, too.

Dr. Will Bulsiewicz

And by the way, fruit contains are found in all gluten containing foods. So if there's gluten there, there's also fruit. All right. So they went home with a fruit tin containing bar, a gluten containing bar and a placebo bar. And they didn't know what was what. And they spent a week eating each and they reported how they felt.

Dr. Will Bulsiewicz

Of course, we compare back to the placebo. That's our gold standard. Okay. During the week, the people were consuming the gluten containing bar. They had less symptoms than the placebo. I'll say that again, the placebo caused more symptoms

than the gluten bar did, so it's hard to argue that it's the gluten that's causing those issues. Flip side when they ate the fruit in containing bar, their symptoms were triggered.

Dr. Will Bulsiewicz

The reason why it's not the fruit tins are bad. Actually, fruit tins are very good for us. But people who have gut issues imagine a person with irritable bowel syndrome or chronic constipation or ulcerative colitis. These types of people, when people have chronic bowel issues, they are going to be sensitive to these types of foods. And when you consume too much of it all at once, it will trigger your symptoms.

Dr. Will Bulsiewicz

And there are ways in which you can approach that to address it. But the key here is it wasn't the gluten. So we claim it's the gluten. But in fact it's this other thing that's in the exact same food. It's the fructose.

David

Is it the combination of the gluten with the fruit can or the fruit eaten by itself?

Dr. Will Bulsiewicz

Well, so the gluten in the fruit are always coexisting in in nature. They're always coexisting in nature. But in this study which this was not nature, this was them creating breakfast bars. Right? So these are processed food, ultra processed foods that they're adding the gluten, adding the fruit tins and isolating em. Right. For the purpose, you know, for a research purpose to understand like what's what what's causing these symptoms.

Dr. Will Bulsiewicz

And what they found was it was the fruit tins. Now, here's a quick idea with your question that you just asked, David, there are ways for us to modify these things. And and we can all do this, by the way, through fermentation. Fermentation is the process of transforming our food by harnessing the power of microbes like bacteria and yeasts.

Dr. Will Bulsiewicz

And when we ferment our flour, we create sourdough and sour dough bread. When it's authentically made. Not the fake stuff. The fake stuff is like what you find that most supermarkets where it's made with vinegar, vinegar is not sour though. the real stuff where the ingredients are simply flour and water. That's it. Maybe some salt, flour, water and some salt.

Dr. Will Bulsiewicz

That's it actually substantially reduces the fruit and content, and it does slightly reduce the gluten content, but really it substantially reduces the fruit content. So many people who struggle with these foods and they say I'm gluten intolerant. As long as you don't have celiac disease, try sour dough bread. You may find that you can tolerate it really well.

Dr. Will Bulsiewicz

All right. The other the other thing I want to just share real quick. They did a study where they separated people. They looked at. The outcome was heart disease like having a heart attack. Right. And this is an important question because I mentioned earlier, 95% of Americans are deficient in fiber. Well, actually, there's one statistic that's worse than this, and it's whole grain consumption.

Dr. Will Bulsiewicz

98% of Americans are deficient in whole grain intake, and wheat is the dominant whole grain, for better or worse. It doesn't have to be, but it is. And so when people go gluten free, they may be throwing the baby out with the bathwater because they're reducing their whole grain intake and not replacing it. So in this study, they separated people into those who have celiac disease and those who do not have celiac disease.

Dr. Will Bulsiewicz

And they were all going on a gluten free diet. And the outcome is, does it make your heart disease better or worse? And the answer was that those who have celiac disease, when they go gluten free, they reduce their likelihood of having a heart attack substantially, as expected, because they have an inflammatory disorder and they're avoiding the thing that causes the inflammation.

Dr. Will Bulsiewicz

That's a win. But it was the opposite effect in the people that did not have celiac disease, their risk of heart disease went up. And the reason why comes back to this idea that when we go gluten free, we reduce our whole grain intake and we reduce our whole grain intake. We actually increase our risk of heart disease because whole grains help to protect us from heart disease, in part because of the fiber.

David

As we spoke about earlier. That's in soluble fiber, which is helping reduce the cholesterol, which reduces heart disease risk.

Dr. Will Bulsiewicz

It's both. It's both. So if you dig into fiber in more detail, dietary fiber so, so not separating out and not supplements, but actually just eating these foods that contain fiber that have both soluble and insoluble fiber, what you will find is that the risk of having a heart attack goes down. The risk of dying from heart disease goes down.

Dr. Will Bulsiewicz

By the way. Also, your risk of dying from cancer goes down. The risk of multiple forms of cancer goes down. The risk of having a stroke goes down. The risk of being diagnosed with diabetes goes down. So and then in randomized control trials, when people consume more fiber, dietary fiber, they lower their cholesterol, they've lowered their blood pressure and they've lowered their human hemoglobin A1, C, which means they improve their blood sugar control.

Dr. Will Bulsiewicz

So, you know, basically the risk factors as you're alluding to cholesterol, one of them, but also high blood pressure and also diabetes. We can modify those risk factors by consuming more fiber. And that's how we reduce our likelihood of having, you know, a heart attack, which is the number one cause of death in the United States. This is the advice that the cardiologists need.

David

David, I feel like everything you tell me, it brings up another like ten questions as far as the fruit, ten with the gluten. So let's go for a whole wheat pasta. I get some nice hobby pasta from Italy and I'm going to eat that. Do I have fruit ten in there and I'm Fodmap sensitive. Is that a problem?

Dr. Will Bulsiewicz

So if you if you are Fodmap sensitive you know you have underlying irritable bowel syndrome. And you notice that you have this issue where when you eat we containing products, you are good. Since you get bloating or other symptoms then yes that that is likely to trigger your symptoms if you consume a certain amount. So the key with food intolerances we're talking about a food intolerance.

Dr. Will Bulsiewicz

Now is that unlike an allergy because an allergy a food allergy, you know, for example a person eats a peanut and then they get they break out in hives and their lips swell or something like this. That's the immune system. A food intolerance is not the immune system. It's sloppy digestion. And so your body is struggling to process and digest and with food intolerances like this, fructose or lactose are found in dairy products or there are things in beans.

Dr. Will Bulsiewicz

There's a saying that I have that people need to hear. Low and slow is the tempo. So if you take these foods. So if hypothetically you were you were a person who were sensitive to fructose. David, do you need to eliminate wheat from your diet based upon that? The answer is no. What you do is you reduce the serving size and by reducing the serving size, you get into a zone that you can tolerate.

Dr. Will Bulsiewicz

And then your body actually becomes better at digesting it because much like exercise, you are working your gut muscle. That gut muscle becomes stronger. And now the threshold actually moves up, meaning that you could actually consume more and be able to tolerate it better. And we have the most research that we have on this topic is with lactose, because this is the most prevalent food intolerance.

Dr. Will Bulsiewicz

But the concept is the same. And what they've shown with lactose is that, for example, exposure to dairy products allows people to reduce their lactose intolerance. You just have to gently ease into it. And what that amount is, it will be different for each individual, but the key is just drop it down nice and low and then see where that see, you know, how things go for yourself and even it's kind of interesting.

Dr. Will Bulsiewicz

They have studies where they take people who are lactose intolerant and they give them fiber, no other changes. They give them fiber. And the lactose intolerance improves. And the reason why is because by giving them fiber, you are actually empowering the gut bacteria in the gut bacteria now better at digesting the lactose.

David

I want to touch on a couple of foods that may or may not be ultra processed. Okay, so first one tofu.

Dr. Will Bulsiewicz

Yeah. To me, I'm so I'm a fan. I always get it organic. I always get organic. And it's not that expensive to do this. Soy has been vilified and I get it. But I think that we need to be able to see that there's many different types of soy, and there's a big difference between minimally or non processed soy, like edamame or even tofu.

Dr. Will Bulsiewicz

And comparing that to the the weird vegan chicken nuggets that are made with soy, like they're not the same. So to me, tofu actually is a great source of protein, and particularly for people who choose to eat a plant based diet like a wholly plant based

diet, where they're not actually consuming any, you know, meat or anything of that variety, then this can actually be an important way in which they help to get the protein that they need for their body.

David

When am I other fit? Because I'm trying to. I just like eat too much, like animal based food and it's grossing me out. So I'm trying to like sort of bring other plant proteins in Saturn.

Dr. Will Bulsiewicz

Basically pure protein. So for the listeners at home who are not familiar, Saturn, it's spelled Seton for the record.

David

Oh, right. Not the bell.

Dr. Will Bulsiewicz

Right. Yeah. It's not it's not a double. and basically this is this is actually gluten protein. So it's gluten protein. So you're actually eating gluten. And for a person who is like disease crew, you can't you should not do this. But for many other people, like you may find that this is quite delicious and it's extremely high in protein.

David

Since we're getting to the foods that I eat all the time, I eat an enormous amount of sweet potatoes as we discussed, what I do is I take the thing, I put it in the microwave. Seven months later I have this like pre wrapped carb that I can like eat before or after I go to the gym and I and I feel better because I do that.

David

Is that okay? Did I just like by nuking the thing. Did I like destroyed the the value in it.

Dr. Will Bulsiewicz

No, I think I actually I think it's great. There's fiber, there's also starch and not all starch is bad. There's something called resistant starch. Resistant starch is like conceptually similar to fiber is it's not exactly the same as fiber. But imagine a starch that our body does not have the enzymes to break down. And so because we as humans don't have those enzymes that starch, we'll call it resistant starch will pass all the way through and get down to the colon in the same way that the fiber does.

Dr. Will Bulsiewicz

And in the colon, much like fiber gets broken down by our microbes and their enzymes into short chain fatty acids. Right. So resistant starch is a beautiful thing and people tolerate it really well. And there's a trick, David, when you heat your potatoes both white and sweet potatoes when you eat your potatoes and then you let them cool, perhaps you've noticed, the way it tastes is a little bit different, the consistency is a little bit different.

Dr. Will Bulsiewicz

And what you're actually doing is we call it retrograde starch. So by heating it and then allowing it to cool, you are actually forming new starch molecules that are resistant starch. So the second day potatoes the twice baked potatoes. Yeah. The ones that were you prepare it and then you create a potato salad and let it cool off.

Dr. Will Bulsiewicz

Or in your case the sweet potato that you heated up. And then you let it come back down in temperature. Actually, this can be a great source of source of prebiotics.

David

Dr. Will Bulsiewicz

And the resistant starch, this is one of the tricks with potatoes. The other thing about, sweet potatoes that I love is the color. So the color comes from polyphenols, whether it be orange or purple. The, the orange is typically from the carotenoid family, and the purple is from the anthocyanin family. And both of them have their own unique ways that they benefit you.

Dr. Will Bulsiewicz

But what's interesting is that these polyphenols, they give all of our foods their colors. So like, think about blueberries in the blue or think about the red of a tomato. Those colors we only get access to these, healing nutrients once again, because of our microbiome, 90 to 95% of polyphenols are activated by our microbiome before we get access to them.

Dr. Will Bulsiewicz

So again, it's another part of the story of how there's this interaction between us as humans and these microbes. And we don't realize they're there, but they are they are embedded in a central part of our physiology on a day to day basis of how we feel and how we get access to our nutrition and what makes us healthy.

David

I once heard that, next day pizza, it's sort of the same deal, right? That you're reconfiguring the starches. I didn't know it was the same for potatoes. So now I'm going to cook my potatoes. One day I'll put them in the fridge and I will eat them that day.

Dr. Will Bulsiewicz

Yeah. Yes. I think it's a pretty cool trick. And it's it's conceptually similar to also like there's resistant starch that you will find in the green banana. So a green banana is not as sweet because the sweetness comes from that starch being broken down in the sugar. But when it's green actually it's firm. And then you have the resistant starch and it's actually in that setting really good for the microbiome.

Dr. Will Bulsiewicz

So if you're making a smoothie, right, if you want to be a sweet smoothie, fine, get the brown banana. But if you want it to be a gut microbiome smoothie, but your blender, whip up a green banana and take the benefits of the starch resistant starch that come from that.

David

And this is brilliant. We're going to run out of time soon. And I want you to tell us a little bit about the books that you've written and about Zoe.

Dr. Will Bulsiewicz

yeah. We discussed in the beginning that my mission has been to to share the story of our gut microbiome and how have we feed it and fuel it. It can change our lives. This is what we're talking about here in this podcast. I wrote a book that came out in 2020 called Fiber Fueled, and it was a New York Times bestseller.

Dr. Will Bulsiewicz

It's now I don't even know the exact number. Clearly, over 300,000 copies sold. My second book came out in 22. It was called the Fiber Fields Cookbook. It is a cookbook. Technically, it's got over 100 recipes for color photography. It's beautiful. But like for me, when I write a book, David, I feel like I'm creating a tool for healing.

Dr. Will Bulsiewicz

So my first book was an introduction to the microbiome and the general strategies that we can use to improve our microbiome. and my second book was about food intolerances. So for people that have food intolerances, whether it be FODMAPs like we were talking about or histamine intolerance, actually the cookbook has food

intolerances strategies built into it. So, now with Zoe, I mentioned earlier, I'm the US medical director of the Zoe, which, which is a personalized nutrition company.

Dr. Will Bulsiewicz

And I think that this is an important concept because, David, if you had an identical twin, literally an identical twin, you would share the same genetic code. And in the majority of cases, you would share, you know, you would grow up in the same home and eat similar food and things like this. Right? Yet your microbiome would be very different.

Dr. Will Bulsiewicz

You would only share about 30 or 35% of the same microbes. We are very unique. there is no one on the planet that has a microbiome exactly like you, David, or the listeners at home. And that's a big part of determining how we interact with our food. And we all know that this is true, that there is no one size fits all.

Dr. Will Bulsiewicz

And the problem is that our advice in the 20th century was very one size fits all. This is what's good. This is what's bad. You need to do this. And sometimes we do it and we go, but I'm not. It's not working for me. So enter the 21st century where we're trying to basically crack the code on those personal aspects of the individual so that when we give them advice, that advice is not just one size fits all, but instead has been actually tailored to their unique biology.

Dr. Will Bulsiewicz

The way that we approach this is interesting, and I think, like, I think it's very interesting and unique because it used to be that if you had a study that you wanted to do, you had to ask the government for money and the government would never be able to afford what we're doing. Instead, we ask community citizens to participate in our big science project, and they do this knowingly or not, by purchasing a kit.

Dr. Will Bulsiewicz

And the kit comes to your home. So, David, if you bought this, you the kit would come to your home and in there you would find a microbiome test. Any continuous glucose monitor where basically you would wear that for two weeks and it would tell you about how your blood sugar is changing. You'd be able to test yourself different foods.

Dr. Will Bulsiewicz

Oh, what happens when I eat this? Let me see. And you would see in real time those changes. and simultaneously you would enter into an app what you're eating and what your health history is. And we then take that information and we put it into a

database that includes now close to 200,000 people. Right. And it's, by the way, the American Gut project that I mentioned earlier, that was 11,000 people close to 20 times that.

Dr. Will Bulsiewicz

And using that database and the statistical power that we have, we stop asking the question, what's good for all? And now we start asking the question, what's good for David? And we can model that using AI and machine learning technology and then deliver that back to you. And this concept is not just an idea at this point. We ran a randomized controlled trial, which is the gold standard.

Dr. Will Bulsiewicz

We compared it to the advice of the USDA, and our results were published in May of this year in Nature Medicine, which is literally the top medical journal on the planet. And what we found is that by following our program, compared to following the advice of our government, which is it's not horrible advice, it's not per it's not what I would say, but it's not horrible.

Dr. Will Bulsiewicz

It's a B-plus at least. compared to following our government advice, if you use the Zoe program, people lowered their cholesterol significantly, lost more weight, shed more inches off their waist. Which is important because that's the visceral fat. Lower their hemoglobin A1c they improved their mood. They slept better. They had more energy. This is my favorite one.

Dr. Will Bulsiewicz

They were less hungry even though they're losing weight. So there are all these benefits. Anyway, I think that the message that I want to get across to everyone is that we're transitioning now from the days of standard advice to the new era of personalization and our companies. Zoe, we're the ones that are leading this charge with the world's largest nutritional science study.

Dr. Will Bulsiewicz

And being a part of Zoe is being part of a community where, yes, we contribute to this greater good. But yes, also simultaneously, we derive the benefit directly to ourselves from understanding our own biology and how it works and being able to tailor our choices to ourselves, which I think is kind of cool.

David

Everybody's different and.

Dr. Will Bulsiewicz  
Different.

David  
And the more that we can like get that dialed in, the happier everybody is.

Dr. Will Bulsiewicz  
I think that's so true. Look, this is not the only way to do that, right? It's not the only way. But I think it's, quite fascinating to have an approach that allows us to do that using real data like our microbiome.

David  
Absolutely. Well, this has been fascinating. I do a podcast every week, and I think this is going to cause me more behavior changes in what I eat and how I eat than anything. It's been great. I personally very grateful for your conversation today.

Dr. Will Bulsiewicz  
Oh my gosh, it's a pleasure to be here with you, David, and with the audience. And again, like if there's one thing that you take away just to remember, think about diversity of plants, whether you're in the supermarket, you're in the kitchen, you're at the kitchen table putting food on your plate. Think about diversity of plants. If you start counting plants, all other stuff falls into line.

Dr. Will Bulsiewicz  
You don't have to, you know, be perfect about calories and things like that. I think this takes care of that for you.

David  
Brilliant. Keep it simple. Well, thanks so much for your time today. I know you're busy guy. Great to have you on.

Dr. Will Bulsiewicz  
Thank you so much.