

What Foods to Eat to Beat Disease | Dr. William Li

[00:00:00] Podcast Intro

Darin: You are listening to the Darin Olien Show. I'm Darin. I spent the last 20 years devoted to improving health, protecting the environment, and finding ways to live a more sustainable life. In this podcast, I have honest conversations with people that inspire me. I hope that through their knowledge and unique perspectives they'll inspire you too. We talk about all kinds of topics, from amping up your diets to improving your well-being to the mind-blowing stories behind the human experience and the people that are striving to save us and our incredible planet. We even investigate some of life's fatal conveniences, those things that we are told might be good for us but totally aren't. So here's to making better choices in the small tweaks in your life that amount to big changes for you and the people around you and the planet. Let's do this. This is my show, the Darin Olien Show.

[00:01:11] Guest Intro - Dr. William Li

Darin: Hey, everybody, welcome to the show. This is The Darin Olien Show. Stoked to be here with you. Thanks for tuning in. Make sure you like and subscribe and give comments to the shows. Maybe you have suggestions as to who I should have on my guests, maybe you see something that I have in common or I'm opposed to, that we could have a conversation with or something you want to learn about and I could reach out to someone. Let me know, I'd love for your insights, your opinions. So make sure you like and subscribe and promote this podcast because we are diving into things and I am also thinking about other ways for pushing solutions into the world. So I'm thinking about that. I'm really, really thinking about working behind the scenes in a bunch of different ways, working on a fatal convenience book, as I am stoked about right now. But let me talk about my next guest here, Dr. William Li. We actually have a long history, but we haven't been in touch for a while. We met in New York City, probably 15 years ago, he was running the Angiogenesis Foundation. Angiogenesis is about the blood supply, the body creating blood supply for areas in the body that needs it. Also, cancer uses angiogenesis as well to create blood supply for itself. So understanding that science is really in-depth, but it's really at the core of how Dr. Li got into Eat to Beat Disease, and that is the title of his new book, The New Science of How Your Body Can Heal Itself. So he and I met in New York with Edge from YouTube. The last time I saw him, we were all eating at this cafe in New York talking about food is medicine, talking about all this stuff. I remember obviously him and I were absolutely fascinated and continue to be fascinated on the power of eating food with its medicines, the miracle that is. He's had an amazing career. His TED talk entitled, Can We Eat to Starve Cancer was seen by over 10 million people. He's been all over the place, Good Morning America, CNN, Dr. Oz, you name it. But his incredible book, which I love about Eat to Beat Disease, we get into it on this episode. We talk about many things that you can consume that will help but also through his health defense systems that he's highlighted in his book, and that is understanding the angiogenesis foundation of some of these foods. Also, the pillars of regeneration, and microbiome, the DNA protection, the immunity to fight cancer, diabetes, cardiovascular, neurodegenerative, and autoimmune diseases, and other debilitating conditions that you can

alter and change by what you consume, by what you eat. His point of view is not what to avoid, it's really focusing on what you can add to your health, to your plate, to your diet, to support you having the best life ever. So please take a big deep breath in right now, take one more in for me. Now sit back, get your mind blown, and enjoy my next great guest, Dr. William Li.

[00:05:05] First Part of the Interview

Darin: We are recording this the day before Thanksgiving, so it's appropriate that we're talking about food and hopefully people can take the holiday season and take some of this knowledge that you've garnered and gathered and put into this incredible book, *Eat to Beat Disease*, great title. You've got such a great history. Your YouTube talk about angiogenesis, tens of millions of people saw that. You were really the first person I think publicly to really kind of break something down that was very unknown to a general population. Why don't you just crack into that, your pre-book time, your the foundation of the Angiogenesis Foundation, and then really what set the stage because I know you've always been curious about foods and their unlocking ability for the body? So talk to me about that on ramp of the book and your latest passions.

[00:06:00] How it all started

Dr. William: For people who don't know me, I'm a medical doctor by training, internal medicine. That means that I'm trained to take care of young and old, men and women, healthy and sick. One of the things that I've always really been focused on is trying to keep people who are healthy, healthy, so prevent them from getting sick to people who did get sick. You can't prevent it from everyone. My goal was always to get them better, to get them well again. That's a little bit different than a lot of the philosophy that people associate with the medical care system, the health care system, which is you don't worry about sickness until you are sick. Once you are sick, the system keeps on throwing javelins to see if we could spear that disease until you got nothing left. My view is, rather than this being kind of a linear process where you're well until you're sick, and then you keep running after the disease, it's really more of a holistic circular system where we start at the top of the clock, top of the hour, and we're healthy. Over the course of our lifetimes, you might slip down to four o'clock or five o'clock, but the key is to kind of get past six, and get back on your way to health, and so you can kind of get at the top of the hour again. That's always been my philosophy. I'm also a research scientist. I'm what they call a vascular biologist. Vascular meaning blood vessels. I study blood vessels. Blood vessels are incredibly important for health as well as disease because our bodies are filled with about 60,000 miles worth of blood vessels. That's an enormous number of blood vessels. In fact, if you were to pull out all the blood vessels in the body, and line them up end to end, you'd form a thread that would be up around the Earth twice. So you might imagine correctly that this kind of huge system, which delivers oxygen, which delivers nutrients to every cell in every organ in our body has to work perfectly. In fact, when it works perfectly, it defends our health because it prevents our tissues from dying, so you got enough oxygen, you got enough nutrients. It also prevents diseases from forming that can hijack blood vessels as well including cancer. As an angiogenesis guy, angiogenesis is just how the body grows blood vessels, I have done research in this area for three decades, and I trained with the pioneer of this field, a guy named Judah Folkman. My focus has always been thinking about common denominators of

disease and common denominators of health. Because of that, I wound up creating a nonprofit organization called the Angiogenesis Foundation. We took this slightly iconoclastic approach, which is not to look at what makes a disease unique in and of itself, like, what makes breast cancer unique, what makes Alzheimer's unique, what makes diabetes unique. There are lots of great, amazing organizations that already do that kind of work. What we wanted to do is to say, what makes all these diseases the same? What are they unified by? And if we could figure out what their common denominators are, maybe we could actually pull the bow back and send a single arrow through the whole kit caboodle, about 70 different diseases. That's actually what we discovered is that problems in our health defense system called angiogenesis, our blood vessel system is the underpinning between cancer, heart disease, blindness, stroke, arthritis, about 70 different conditions. But by that token, if you were to look at the opposite end of the spectrum, it turned out sock inside out. You would find that healthy blood vessels is the key to preventing these diseases, as well. Through my organization, which is a nonprofit supported by donations, we actually have been involved with at the center point of the successful development of 41 FDA-approved treatments for cancer, diabetes, and complications of blindness. What I always say to people who ask me how I got into plant-based foods and nutrition, I always tell people that my street cred, my background is really in drug development. I'm not about replacing medicines with and throwing out all the tools that we've had for 1000 years, I'm about how do we actually add new tools to the toolbox, which is the food all around us. So with the kind of success we've had in developing new treatments for serious diseases, I realized that maybe there was an opportunity to prevent the disease in the first place. And because we've been involved with inventing many of those systems used to develop drugs, we thought, why don't we actually just throw food into those same test systems to see what they would do. The eureka moment for me was in an experiment that I did and I showed to my TED Talk, where we literally looked at cancer drugs, regular pharmaceuticals, and then we threw in a whole variety of foods from soy, ginger, garlic, tea berries, essentially blinded ourselves to what the actual identity was, and let the sight speak for itself. When we actually got the graph, and we saw the bar charts, and we saw all the potencies that are there, the light bulb that went off my head was seeing that in many cases, the food stood side to side, head to head on par with the drugs, and in some cases, we're better. So that really lends a new kind of way to look at this emerging field called Food as Medicine, which is what I'm actually doing.

Darin: That's amazing. I love that approach, in the sense that almost blinding yourself to that and just looking at the raw data. Also, what were the parameters, just out of curiosity, because foods are so pleomorphic, and their ability to help and heal from blueberries to turning on stem cells to antioxidants to all of those things, what was the through lines? Maybe break down the angiogenesis a little bit, then what that through-line was because angiogenesis also is, as you very clearly state, it also works to cancer turns angiogenesis on for its own benefits as well, and so there's that plus and minus. Number one, there's that. Then number two, what were those through-lines that you used to determine and to see those plants doing their thing versus the drugs?

[00:12:15] Food vs. drugs: which works better to beat disease?

Dr. William: To back up just a little bit. When I started to look at food and health, I came at this very authentically because I actually grew up in a household that always had great food. The smells of my mom's kitchens were always amazing. When I travel, and I've done a lot of

traveling in my time, I really love to explore the local cuisines and the local produce and what's in the markets and what is regional, what is traditional. That's always been interesting to me. I think that food is incredibly intimate. One of the most intimate things in our lives because it's what we encounter from the time we're born to our very last breath, we're actually having some kind of food. It is a substance we're introducing to our body three times a day. Our food tells us something about how we grew up. Everyone has that recall of something that they loved when they were growing up that they would eat or favorite food that they always order when they see it on the menu or something they would love to cook for themselves. Our food tells us something about our families, our communities, and our culture. Everybody comes from somewhere. So regardless of where your viewers and listeners are coming from, there is something in their background that connects them with food. Food is a common topic, so you and I don't have to know each other or we do, but we didn't have to. If we talked about food, it would be something that we would instantly connect on because it's something that we have this common enthusiasm and language for. If you recognize food as something as pleasurable, as something recognizable, then the question is, how do you actually study that? Because if you just look at the marketing that's out there on diet and health, and it's everywhere, whether it's a meal delivery service, whether it's a superfood product, or you go to Whole Foods, Trader Joe, pick your supermarket of choice, there's always kind of a superfood section. It gets confusing because almost every month or every season, there's another superfood out there. At one time it was the acai berry, and then it was a goji berry, and then it was ashwagandha. The reality is that mother nature has really given us a treasure house of foods that contain natural chemicals, but there's no single superfood. There's no single food that's going to actually do it all. We like to actually try to reduce it to that way, that's human nature but in fact, it doesn't work that way. What's happening is that there's no superfood, but there is a super body. Our bodies are actually designed to be extraordinary. So what I look at for food and health, it's not just about the food, it's how our body responds to what you put inside it. That leads to this framework that you talked about. When I look at food as medicine, what am I looking at? There are so many possibilities of what foods can actually do. So I have a pretty simple filter. Our health is dependent upon five health defense systems in our body and I read about this in Eat to Beat Disease, our circulation angiogenesis. So how does food help grow blood vessels or help prune blood vessels away? Number two, our stem cells, we are filled with stem cells that regenerate from the inside out. We're not starfish or salamanders, so we can't throw a new arm or tail, but we do regenerate our liver, our hair, our skin. It's remarkable that we can even regenerate parts of our brain, which is really, really amazing. What foods actually stimulate our stem cells? By the way, you mentioned cancer, we're going to talk more about this, I'm sure. Cancer is a sneaky thing as they once were normal cells, and somehow they mutated and became abnormal cells. Well, the recent cancers stick around even after you have treated them successfully. The thing, even when they are treated, is that they have these little cancer stem cells, baby stem cells that are continuously popping out the next generation of cancers. There are foods that actually kill cancer stem cells, which is amazing. There's no pharmaceutical in the world that can actually do that, but mother nature has it laced in our foods, our microbiome, and other defense systems. What foods make our gut better? What foods make our gut worse? Our DNA, not just a genetic code, but in fact protects us from the harms of the environment. I always ask people if you still drive a car with gasoline as opposed to electricity, when you're at the filling station, do you stand upwind or downwind? Most people look at me like huh, what are you asking me? What I'm saying is that if you smell the fumes going into your car, you're standing downwind. Those fumes are

petroleum products, the solvent, that's going into your lungs because you smell it, and it's mutating your DNA in your lungs. How come you don't develop lung cancer the next day? It's because our DNA is hard-wired, there's a defense system to fix them. If you're in a sunny location like Southern California, and you're driving on the freeway on a beautiful sunny day, with a top-down and your window down or maybe you have your window up, and you've got a sun visor that you haven't folded down. That ultraviolet light coming into your car window, damaging your DNA on your arm, on your face. So how can we don't get skin cancer the next day? Because our DNA fixes itself. Finally, is our immune system. Our immune system is more powerful than we ever thought, and everybody knows how important the immune system is after the last couple of years. But the best story about the power of the immune system is that even if you're in your 80s or 90s, if you have cancer, even if cancer has spread, our immune system is powerful enough if given the chance to go and wipe out all cancer in your body and restore health. Remember, I told you my goal is to kind of get people back to the top of the hour of their health. That's now possible because we've got strong immunity. When I look at the framework, the through lines which you talk about, I asked the question, how does any given food affect their health defenses? What is the evidence for that, and how do we use the tools of measuring these health systems to know if the defense is working, or not working? That's basically how we do it.

[00:18:02] Vuori Ad

Darin: You know, one of the best things we can do right now is focus on our fitness, on our health. We need to move our bodies. We need to get outside even when it's cold. So I want to introduce you to another amazing company that I love, Vuori. They are active wear working on sustainability, just making great clothes. And Vuori, they're making sure that we are in comfort. I don't know about you, but clothes have to feel comfortable. They have to feel good on my body. And I love the way I feel in these clothes. This company has such a strong focus on the ethical manufacturing and sustainability, so that we can be comforted in knowing that we're supporting a brand that's making these positive changes in an industry that is really horrible. Literally, the fashion industry is the second largest promoter of pollution. So supporting companies that are changing things and not destroying the planet is absolutely what we need to do. So high quality performance apparel is designed to be versatile. I'm such a huge fan. Their shorts are so comfortable to run around in to get my workouts in, then I just stay in them all day because it just feels good on my body. So coming up into this holiday season, I can't believe 2021 has come this far. This is a great gift idea for anyone you love. So gift yourself this incredible treat. You get 20% off your order. You can head to vuori.com/darin. That's V-U-O-R-I dot com forward slash darin, D-A-R-I-N.

[00:20:13] Second Part of the Interview

Darin: I was working on a project with Dr. Henry Young, who at Mercer University in the '80s have discovered totipotent stem cells. It comes to find out that the blueberry when consumed, a cup of blueberries every day for 30 days turned on your totipotent stem cells, and that is basically the genesis of all the mother stem cells turned on production by six times just by consuming blueberries. Of course, now we're finding anthocyanins and everything are actually feeding bacteria. They're not just antioxidants but they're feeding bacteria. It's so cool that you've come down to whichever you want to be simple pillars are obviously infinitely complex, but what are some of the measures, so when you're looking at a

blueberry, you're looking at green tea, you're looking at ginger? Are you scouring the literature? Obviously, you can do a lot of the tests yourself. So what are some of the measures you're taking to determine that this is hitting all five of the defense systems?

Dr. William: The great thing is that there are well-defined measures for each of these health defenses. For blood vessels, you can measure your circulation. There are lots of different ways you can measure your circulation. Some of the simple ways of measuring the health of your blood vessels is done with a simple blood pressure cuff, actually. You do a blood pressure cuff, and then there's a little probe that was an ultrasound, and you just listen for the rebound, and how quickly your blood comes back. That's a reflection of your blood vessel health. Sometimes you do a biopsy, sometimes you do a blood test. There are lots of different ways. Sometimes there's imaging. There are many ways of evaluating these outputs of the functionality of each health defense. Stem cells are pretty straightforward, which is, generally speaking, whatever the organ that you're trying to heal or make better or preserve its health, you can correlate it by doing a simple blood test. And you end up in a vial blood, same kind of blood that you would actually see in a typical physical exam. You can actually measure the stem cells that are in there. It's not a routine test, but it's a research test, and you can actually count 1, 2, 3, 4, 5, so on and so forth. If you're going to do a research, you can actually give somebody pomegranate juice, so you can give somebody blueberries. Then you can actually draw their blood and counter stem cells. Then you can actually start to track what the impact is at the clinical level. Now, of course, you can go into the lab and study that as well. Gut microbiome, the output is poop, frankly. We're able to use a technique called metagenomic to be able to take a schmear, and you send it into the lab, and it's really difficult. By the way, we got like 39 trillion bacteria in our body, so that's like a starfield. No way you can actually do the genetics of every single thing. So metagenomic sounds exactly like what it's been intended to sound like the meta-analysis. It tells you generally what the populations are, what the ecosystem is, what the neighborhood is actually like, we can measure that. DNA 10 years ago, it cost a million dollars to actually look at your DNA. Now, for a couple of 100, you can actually do a pretty good genetic analysis. For a few 1000, you can actually do the entire human genome and get right down to it. So less than the cost of a rental car for a week, you can actually get your entire genome analyzed. Partly that's due to the advancement of technology. Partly that's due to the power of computing because technology has really been able to give us tools to be able to do everything deeper, harder and faster. Then the immune system, there's a lot of ways of measuring your immune system. I talk to people and say that our immune system is like an army of super soldiers. If you remember, when we were kids, you got a toy bag of greens, plastic soldiers. You open up that bag, and you pour them out, and they're all different, but they all look the same. So the immune system is kind of like that, and you got to sort the soldiers to see which ones got kneeling down, and it's got the bazooka, which one was carrying the rifle, which one is got the grenade in their hand. You sort those out, you find this whole army of super-soldiers, and each of the cell types of the immune system is trained with its own weapon to fight invaders from the outside and the inside. Invaders from the outside: bacteria and viruses. Invaders from the inside: cancer. What you do is you can measure the blood cells. Sometimes these immune cells also produce antibodies, and how we know, everybody knows just from the internet, and with COVID, you can measure antibodies, and you can actually compare that over time. Of course, you can actually just see if people get sick, and you can measure that as well. There are both really practical, easy to do, relatively easy to do measures for our health defenses, i.e. our health. Then if

you want to get down and get down to the details on this at the genomic level, we can go there too.

Darin: Wow, you've really condensed it. Obviously a lifetime and body of work, you've really taken so much of this foodist medicine concept, and really actually quantified it and brought it down to earth into this way that then verifies you're backing up your blueberry recommendation, you're backing up your olive oil recommendation, you're backing up the Mediterranean diet, which has been studied quite a bit and largely a plant-based diet. Let's talk about that a little bit, and what are some of the things that may surprised you along the way and maybe are still surprising you along the way?

[00:25:56] The surprising factors about disease fighting foods

Dr. William: I always get asked, hey, doc, what are the top five foods everyone should eat, or what's the one thing that I should actually eat? I come back at this by saying, you know what, from the research I've done, there's some great news. The great news is that you can eat a lot of different things. In fact, I write in my book about 200 different foods, and because food should be aligned with what you enjoy eating. I'm a little bit different than a lot of doctors who tell you what not to eat. I can tell you what not to eat, but I prefer to tell you what to eat, what you should add to your life rather than elimination because human nature is pretty predictable. Human nature abhors deprivation. So when you tell somebody you can't do it, you want to do it, you're thinking about doing it. The other thing about food and health, so many people are actually discouraged because they associate healthy eating with deprivation, I can't do what I want, or they anticipate their cringing in anticipation of fear, guilt, or shame, you're a bad person for eating this. Well, actually, I don't believe that. I think that if you go back to a lot of the traditional diets and look elementally at the ingredients, plant-based foods, hands down, has shown in every research study to do something good for us and something that we should actually be leaning more into. It's not eating a wonder food or five foods, eat as diversely as you possibly can because our gut, our healthy gut bacteria loves diversity. That's really something that we should do. There are some basic principles, eat plant-based foods. So that's fruits, vegetables, legumes, nuts, and seeds, healthy oils, all good for you. The other foods that are actually beneficial, it happen to be seafood because oily fish actually eat a lot of plants over the food chain. The omega threes that we found in salmon, for example, originally came from plankton and algae. So it all still comes back down to the plant. But seafood can actually be very rich in omega threes and that's healthy as well. Then there are some beverages, which also come from plants, coffee and tea to a different extent, red wine and even beer, not because of the alcohol, but because of the fermentation process, you wind up having all the stuff that makes red wine red, and beer. The stuff that's floating in beer from the hops actually are also healthy as well. There is a rich choice of healthy ingredients. You just seemed to know what those are, and just have your radar ready to light up when something healthy comes before you or as on the menu.

Darin: I love that you said that. And I don't consume fish anymore. Actually, I have phytoplankton sitting in my fridge right now, and I consume that. I also raw spirulina consume that on a daily basis. So I keep going to the source. You know me, I've spent my career going to the source of stuff, so I just keep doing that. What are your thoughts though then on the bigger picture of the seafood industry, the quality, the contaminants in our

societies that certainly from a fatty fish perspective can bioaccumulate heavy metals, pesticides, everything else? Have you tinkered around and seen any of the contamination issues at all?

Dr. William: There's a macro picture here about our own individual health, the health of our communities, the health of our species, as humans, and of course, how that's tied to the health of the planet. When you realize all of those health recipients are interconnected, it's very quick that when to see that we actually do something that's not good for our planet, we pay for it on an individual basis as well because it's going to be found in our food, it's going to be found in the air we breathe, the water we drink, and we can't get away from that. For generations, decades, there's been sort of, well, 50 years ago, nobody even thought about it, or they were not wanting to think about it, then became awareness. Now we've come to kind of a critical point where a critical mass with the health of the planet. Climate change, honestly, it doesn't matter who caused it or what caused it. The bottom line is that we got to get back to equilibrium. That's what we're looking for, we're looking for balance, just like everything else. So as it relates to food contaminants, if we don't treat our planet well, the fish are going to get contaminated with heavy metals, we already heavy metals in the ocean anyway. But anything that we dump toxic in the water winds up getting into the smaller fish, which are eaten by the bigger fish, which are eaten by the bigger fish. Then you wind up actually having them accumulate in fish that we might eat higher in the food chain. It's not just seafood, the same degree of alertness and alarm that we need to be having is what we put into our soil. Two really healthy vegetables that I always tell people they should consider eating, especially if they have high blood pressure, which a lot of people do in this country are beets and spinach. I love both. Both beets and spinach are great for our blood pressure because when they grow, they absorb a lot of nitrogen from the soil. That nitrogen builds up in the food, and if you cook them in ways that you really love, or if you juice them or however you want to actually do it, if you juice them make sure you use the fiber, keep the fiber in it. If you're eating it, and you chew it long enough, the beet or the spinach, so don't wolf your food, chew it. It turns out that the healthy gut bacteria on our tongue, our tongue microbiome is amazing, will actually change the nitrogen from the soil in the beet or the spinach into a form that when we swallow it, what gets absorbed into our bloodstream is nitric oxide. Nitric oxide is a powerful signal for health. One of the things it does is it opens up our blood vessels, so our blood pressure comes down. A serving of beets that you would have at lunch or dinner will lower your blood pressure by a few points for a whole day, 24 hours, quite amazing. Every single point that you lower of your systolic blood pressure, which is the top number for your blood pressure, every one millimeter of mercury, every one point it goes down, lowers your risk of a stroke by 5% over the course of your lifetime. Again, amazing power food. But let's go back to the soil, like I told you nitrogen's absorbed. Now, what else gets absorbed? Toxins, pesticides, contaminants. Again, this is why we do need to be so mindful of how we grow, harvest, treat our food in terms of what's not good for our planet, it's not good for our food, what's not good for our food is not good for us as humans, and that's the interconnectivity.

Darin: You can obviously make the uneducated understanding that if you have healthy soil, you have healthy plants. But it's so much deeper than all of that pun intended because there's so much diversity, it's like the same diversity you're just describing on the tongue is also the diversity we need to flourish in the soil, and that's through the diversification of other plants, no more monocropping, and a strong microbiome, bacillum, all of that stuff creates

this strength of a soil, which then creates the strength of the plant more bioavailable compounds. Then that creates the strength that is going to be consumed by the person making the person stronger, and the whole loop continues. I love that you are hitting on these points because it also is a reductionist attitude. Even in myself, when I started my career, let's find the best superfood, let's do all that stuff. But even in our pursuit of health, and even in our pursuit of the best food, and even the pursuit of creating the next book can be a reductionist at mindset that we need to continue to kind of step back and keep looking at all of these scenarios from a wider lens.

Dr. William: What's interesting is that biology also plays into this. For years, I was asking myself the question as a scientist, does organic make a difference?

[00:34:05] Does organic make a difference?

Dr. William: There are pundits on one side that say organic is the most important thing. Then there are others that say organic doesn't matter. You kind of get ripped between these two points of view and don't really know what to think, but now science actually gives us at least partial answer. I learned this and it was quite amazing. It turns out that if you grow conventionally, pesticides are thrown on to prevent bugs from eating away at the plant. If you grow organically, you have to take measures to try to minimize the pest but pests are still going to be eaten at the plant. The plant might not look quite as pretty as the pesticide-treated one, but it does get attacked. Turns out that plants when they're nibbled on by bugs, the stems and leaves, they view that nibbling as a wound, so they have a wound healing response. So a strawberry plant that's sitting on the ground that gets nibbled on by little pests during the summertime, the plant is basically reacting to the nibbling creates a wound healing response. It makes a substance, a chemical called ellagic acid. That ellagic acid fills up the fruit, that strawberry fruit, so you get a ton of this ellagic acid. Guess what? Ellagic acid is when we eat it, it actually is anti-inflammatory. It cuts off the blood supply to cancer. Organic growing is actually more natural and it stimulates the plant to create more of the bioactive that we seek, our body responds to, our body's health defenses respond to whereas if you treat with pesticides, let's extend ourselves, it would be generous to say we get some credit, we're trying to protect the plant. But maybe that is really kind of the wrong thing to do because we want the plant to actually react normally. Then we picked that fruit, or that vegetable, it's now loaded with what it actually used to defend itself in mother nature. That's part of that ecosystem, that broader harmony that you're talking about.

[00:36:03] Bite Toothpaste Ad

Darin: Hey, everybody, I have a secret to minimize your waste in your own bathroom. That's right. Now, it may not seem like a lot of waste, throwing out your toothpaste tubes or your toothbrushes but keep in mind, none of it is recycled. Then add it up over the population, these are a big number. This isn't necessarily our fault though because we need toothpaste. We definitely need to brush our teeth. But thankfully, one company that has really thought of everything when it comes to taking a big problem and finding solutions is Bite Toothpaste. Their best seller and the product that really caught people talking is their dry toothpaste tablets that come in reusable glass jars. When you run out, you just order a refill, and it comes to your house in compostable pouches. So there's the impact, they're making an environmental waste problem go away, but they didn't stop there. They care about you. They

want to make sure that what they're selling is the best of the best. All of their products are vegan, cruelty-free, and they're made from clean ingredients. I'm excited to get you in touch with Bite Toothpaste because it's good for you and they actually work. They do exactly what they say they will. If you're ready to ditch the toothpaste tubes and try literally this Bite Toothpaste, it's awesome. I love it. Bite down and boom you basically have the toothpaste all right there. So all my listeners, you get 20% off your subscription if you head to trybite.com/darin and use the promo code D-A-R-I-N. That's trybite.com/darin and get rid of the waste and get healthier with this amazing product.

[00:38:17] Third Part of the Interview

Darin: That's what I love about you in particular. You take incredibly complex things, the way you communicate, how you're gone about it scientifically, and then the way you share it in the book. You're bringing it down backed in science, backed in your experience, backed in your credible library of experience, but you're making it down to like that strawberry story. That makes sense. That's the beautiful arc that I hear from you. I just want to reflect that back because there's an art to that. As a researcher, you know as well as I do, there are many researches that you can't follow. You can't bridge, but you've done such an amazing job bridging that gap between things that are so infinitely complex in the biosphere of humanity and the earth and then making it digestible for people. So it's getting back to that which is the most basic but also, we have to look at this. What do you think about food insecurity, like food choices, food insecurity, what are your thoughts around that?

Dr. William: The whole idea of nutrition and supplementation came at the beginning of the first part of the 20th century, so over 100 years ago because within a highly developed nation, America, we were having people who were starving, who didn't have enough nutrition. Then if you take a look at the rest of the world, it's magnified. There are places everywhere, India, Latin America, South America, Africa, but also in Europe, and also in Russia, and also in China, where the disparities that exist, the inequality that exists really threatens the survival at such fundamental levels not being able to actually access good quality food. We live in strange times where, as you pointed out, on one hand, there's abundance in many places. In those same places, you end up having these ghastly differences where people can't even get enough food. Add on top of that, another layer, where the food choices that both sides have access to are not healthy choices. This is sort of the food industrial complex. It's very tempting to actually start going down that road to say, who's the bad guy and who do we need to take down and legislate against and who needs to go to jail? It's kind of like taking food as like the tobacco industry. There are plenty of people that are doing or are on that mission and are going to continue to do it. I sort of choose to look at a different side of the equation, which is, first, what do we have around us that mother nature already gave to us that's not expensive, that might be grown locally, that we can actually find in the forest for ourselves, not in the woods, but really just looking at a community around us. Sometimes convenience, nothing more convenient than going on Amazon or Instacart, and clicking something and you don't leave your house, but there's something to be said for looking, for choosing food that we want to actually eat. That's coming in terms of our own nature, that we can go out to look and find and decide and choose what we want to actually. I also think that the more we're individually armed and aware of what are good choices to make, you don't need to make a lot of good choices every day, you need to at least make one good choice. Well, hopefully, more than one but at least

one good choice. I think this is where education is starting to really set into the community. People are paying attention to food. I sort of thank the food channel for that because people watching TV a decade ago are watching Master Chefs whip off crazy ingredients and they got interested in food and started to talk about it. So I think that there's an openness now to talking about food in a way that we didn't have before. But the idea of insecurity, if it's not delivered to your doorstep, go look for it. If you have to go look for it, know what to choose. On today's world, partly aided by the fact that almost everybody has access to the internet, we can go search on Google for a healthy ingredient, come up with celery seed, tomato, kale, chard, swiss chard, bitter melon. They want to get a little bit more exotic. You can search around and find someplace that can actually get it for you. Economics is a whole other issue. That's a whole other tangled ball of yarn to kind of go through. But if we all actually became more aware, and we all stood up for each other to really try to get better food. And by the way, although the pandemic makes it difficult, if you think about the traditional communities that I know you spent a lot of time in, in traditional societies, people would gather together to share food. It wasn't individual entree-sized servings. You had plates and the community got together which itself leads to health, that idea of socialization as part of our health.

Darin: The other thing that I want to just say and that since we're talking about it is one easy way for really a few cents, you can grow broccoli sprouts, sunflower sprouts, whatever. Soak the seeds, get the seeds for a few, literally 25 cents, and get them twice a day. Then within five to seven days, you have a whole salad. Of course, the benefits of broccoli sprouts are extraordinary, sulforaphane, that's anti-cancer stuff. There are ways to do it, but what you're bringing up, it's an empowerment thing. People need to empower themselves together. Listen, I need to break the cycle of my habitual patterns of maybe nutrient-starved food that I'm choosing and go back, let's go look, let's go take, maybe little outside of my community and find a healthy grocery store or farmer's market or whatever because it is our responsibility for our health and our life as well.

[00:44:18] Broccoli superpowers

Dr. William: Exactly. By the way, the sulforaphanes in broccoli sprouts, there are some amazing facts about them. I've done research on broccoli sprouts, the whole broccoli, and most people who eat broccoli, just eat the treetops. That's what your mom told you to eat. But if you go to a farmers market, you know that a broccoli, an adult grown broccoli, grown-up broccoli, it's not just the treetop, there's this long stock, and then a little bit of treetop on top. If you go to the frozen section of a grocery store and you go to frozen broccoli and you cut open the bag, they just look like perfect florets. They're all the same size. When got to ask your question like what happened to that gigantic stock? So we did research on this. We wanted to study broccoli florets, the treetops and to see if they had anti-cancer, cancer-starving effects based on the sulforaphanes. We found, indeed, that broccoli treetops or florets have pretty powerful anti-angiogenic cancer starving effects. But then we got the stocks and it's usually thrown away. We actually studied that as well. You'd be surprised the stocks have twice the activity as the treetop. By the way, the same thing we found with mushroom caps versus the mushroom stem. We also found the same thing with carrot tops, you know the green carrot top, compared to the taproot, the orange or purple or yellow carrot. If you study the top versus the bottom, the tops have twice as much of the good stuff, and twice as much of the activity. Now the reason that's important is sustainability, in part,

because why throw the parts of the way the food when we should be eating it, but now there's a reason to eat it, which is it has a lot. Now, back to the sprouts. So if you measure the amount of sulforaphane that's in an adult grown-up broccoli. I already told you that it's pretty potent, the treetop, the stalk. The broccoli sprouts have 100 times the sulforaphane as grownup broccoli. So that means that when it's broccoli seed sprouts, it's pretty much got all the sulforaphane it's ever going to have. As it gets bigger, it just distributes it throughout, not evenly, because the stems have twice as much as the florets. Makes sense, right? It's coming out of the ground. It's more on the bottom, a little less on the top. It all makes sense. This is what you're trying to say is like, folks, this is not that difficult to understand. If you really pay attention to what the science is telling us is revealing a lot of common sense things. But when you asked me what surprised me is that the sprouts are so much more potent, and not only for cancer-starving effects, but studies have been done in young people just during flu season getting the flu vaccine, that if they actually got the flu vaccine and drank a tall glass of broccoli sprout shake, so made a shake with broccoli sprouts, and you measured their immune system at the beginning versus a week or two later, those people those young people who had the broccoli sprout shake along with their flu shot had a 22 times increase in their immune response, 22 times. Basically, they were much more protected against the flu. That's not food versus medicine, that's food and medicine. People getting immune treatment for cancer, it's been shown that if you are going to respond to the immune therapy, you got to look in the gut. You have one bacteria that's critical for responding to immunotherapy, some forms of immunotherapy to treat cancer. If you're missing that bacteria, you're probably not going to respond very well, which means that you might not make it. But if you have that one bacteria, it's called Akkermansia muciniphila, you're going to respond as a cancer patient to the treatment. Like my mom, who's 87 now, actually had this bacteria. We gave her pomegranate juice because you can't have the probiotic yet. You gotta grow it naturally by eating whole plant-based foods. In this case, pomegranate juice has [00:48:05] tannins. These are natural substances that cause your gut to secrete mucus. The mucus basically acts as fertilizer for those bacteria, healthy bacteria, talks to your immune system, and basically says cancer cells, let's go get them. So it's really quite amazing thinking about the remarkable benefits that foods have to activate our health defenses.

Darin: how exciting of a time where science is really starting to see into the body more and more. You've always been passionate about what you do, and it comes out of you. This has got to be exciting as a doctor, as a researcher, and someone who's passionate about food, all those things coming together, and for you to be able to share that.

Dr. William: This is why I love working with chefs and people who are trained in the food world and farmers. What we need to do, the future of food as medicine are people coming together that wouldn't normally be in the same room, normally. You got your doctor, you got your researcher, your biologist, you got your farmer, you've got your chef. Previously, in past decades, it was really just the person who's a nutritionist, or dietitian. They were all by themselves trying to do all this hard work. Now when you add them, and you bring everybody together, like this multi-talented group of people together to contribute, all of a sudden we're able to actually better appreciate what we actually put into our bodies.

Darin: Yeah, and that's a representation of a bigger lens. So they're seeing stuff that you're not seeing and you're seeing stuff that they're not seeing. Also, that indigenous knowledge.

There hasn't been a time that I showed up in some foreign country, foreign land where I was looking at one thing and came away with 10 other things, or 10 other ways or different ways of looking at it or growing it or processing it or understanding it that I wasn't looking for. That's where I think the value of what you're saying, the value for me was always showing up. That was infinitely more valuable than sitting back and researching something or reading something. Not that that's not important, but it's really when shown up, you get the researcher that hasn't published anything but has studied it, or has grown it for generations. It's wisdom that is just so powerful when brought together.

Dr. William: I'll tell you a quick little story. Before I went to medical school, I did a gap year. In my gap year, I actually went to the Mediterranean and I lived in Italy and Greece. Among many things that I did, this is long before people even heard of the Mediterranean diet, long before the blue zones were discovered. I was walking the walk, really living there looking at markets and watching people cook, being in people's kitchens, showing up and seeing it and living it. I embedded myself in a monastic community that you had to rock climb to get to. This group lives a medieval lifestyle, 16th-century lifestyle. It's called Mount Athos. It's in the northeast corner of Greece, and no running water, no electricity. They grow all their food, and they cook everything like over fire. It was quite amazing to take part in the Easter feast when I was there. The monk that was supposed to be the chef responsible for the cooking got sick. So I got tapped to help throw my weight in for the community to help cook. Here we were in this ancient monastic kitchen in this ginormous cauldron of stewed beans with spices and herbs and healthy oils. We were stirring this thing, I remember stirring it with a canoe paddle, or a spoon the size of a canoe paddle because we were feeding the whole monastery. Again, knowing where the food came from, being in the fields, being part of that community, I walked away learning something about that indigenous practice that I couldn't have had just reading about.

Darin: Man, you get everything from that perspective. You're getting the microbes from the area, you're getting this the lowered stress, you're getting the cultural connectivity. It makes me want to get up and travel right now. But that's such a part of it too, lowering stress and celebrating food and celebrating the wholeness of it and really celebrating that whole unbelievable collaboration we have with the plants. Here, we show up, there are plants all around us. Some can kill us, we've learned but many of which can help us thrive and live our life. It's just an extraordinary, unbelievable experiment that we are participating in. Dude, this has been such a pleasure to reconnect with you and just to see and to feel your passion again. Really, Eat to Beat Disease is incredible, and I want people to check it out. Where can people find you, and what are you working on right now?

Dr. William: I'm working on a number of different projects to really move food as medicine forward. We're really trying to figure out how to actually take these principles and move into metabolism, and move into having a brand new view towards body fat. Even if you're somebody who's skinny or slim, even if you're somebody who's perfectly fit, there's a reason for you to actually pay attention to what body fat can do for you or to you, and how food can actually be used to amp up your health defenses, and also streamline your metabolism. So that's something I'm working on right now. I'm actually working on my next book. It's going to be all about that. It's pretty exciting. I'm very excited about it because you can actually eat food to lose weight is kind of a cool light bulb to go off. And anybody who wants to follow me, I'm continuously putting out information based on what I'm doing. You can come to my

website, it's www.drwilliamli.com. You can follow me on social, my handle's @drwilliamli and I'm on Instagram, I'm on Facebook, I'm on Twitter, come check me out. By the way, I periodically offer these free masterclasses, and I welcome people to come on board. It's pretty cool. I actually have thousands of people to sign on when I do these free masterclasses. One had people from 30 countries all come in at the same time. It's an opportunity for me to share the research I'm doing, what I'm learning about the body's health defense systems and just spreading the word. The key I look at for what you're doing and what you're taping and what we're talking about, it's an opportunity to have a ripple effect on the community around us. So if you like what you're hearing, there's a lot more to learn, come to my website, drwilliamli.com and would love to actually continue to stay in touch with your community.

Darin: It's been such a pleasure, dude, and let's stay connected. I love what you're doing. I can't wait for your second book. Can't wait to talk to you again. Let me know about the masterclass. So great to see you.

Dr. William: Thank you. Great to be on.

Darin: Thanks, brother.

[00:55:29] Generic Outro

Darin: What a fantastic episode. So tell me, what is one thing you got out of today's conversation? If this episode struck a chord with you and you want to dive a little deeper into my other conversations with incredible guests, you can head over to my website, darinlien.com for more episodes and in-depth articles. Keep diving my friends. Keep diving.