



EPISODE 1016

Shocking New GLP-1 Side Effect: Can GLP-1s Reduce The Risk of Cancer?

With Dr. William Li

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SHAWN STEVENSON: Welcome to The Model Health Show. Today you're going to learn some cutting-edge new science connecting GLP-1s to cancer prevention, to reducing the recurrence of cancer, and much more. But what about the potential side effects of GLP-1s?

We're gonna dive into the data on that as well, and I'm telling you, everybody needs to know this stuff. Now, because of the exceedingly fast shift in our culture with GLP-1 drugs, this conversation warrants some caveats, and this is not especially for me an advocacy for these drugs or against them. This episode today is about providing access to the latest, again, cutting-edge information that has emerged now that we have accumulated years of data on their use.

Plus, you're going to discover the surprising relationship between cancer cells and fat cells help to fuel or starve them both. It's the process of angiogenesis, and today you get to learn about all of this from the world's leading expert on this subject, Dr. William Li. Dr. William Li is an internationally renowned physician, scientist, and author of The New York Times bestsellers *Eat to Beat Disease* and *Eat to Beat Your Diet*.

His groundbreaking research has led to the development of more than 40 new medical treatments that impact care for more than 70 diseases, including diabetes, blindness, heart disease, and obesity. Dr. Li is a president and medical director of the Angiogenesis Foundation, and he's leading global initiatives on food as medicine.

Let's dive into this conversation with the incredible Dr. William Li. This episode is going to be out of this world, literally. We've got some incredible new insights. We've got the one and only Dr. William Li here with us. How you doing today?

DR. WILLIAM LI: I'm doing great. Thanks for having me back on. Always a pleasure.

SHAWN STEVENSON: Of course. You've got some cutting-edge new research regarding a relationship between GLP-1 and cancer. Please talk about that

DR. WILLIAM LI: I think the rest of the world I've been swept into the interest of GLP-1 because everybody, 30 million people actually are taking it. If some for diabetes, many for weight loss, and it's actually become a vanity drug of choice and kind of a runaway success.

And because my background is in research, I'm a physician, internal medicine I care about the responsible use of pharmaceuticals, right? And because I've been involved with drug development through the Androgenesis Foundation for 30-some years, I know a lot about how drugs sometimes have side effects that we don't want, but occasionally we have side effects that we do want.

And GLP-1 happens to be one of those drugs that are generating... You do hear about the negative side effects, but the positive effects are now coming out like a, like artillery fire particularly in a cancer research meeting. And I'm just telling you I'm a person who works on the thin air of science and discovery of how the human body works.

But I have to say, in the last 10 years, I haven't heard anything quite as startling and as amazing as what GLP-1 can do potentially for cancer patients. But it tells us a lot about how important this peptide hormone that our body makes a little puff of after we eat foods, the profound effect on maintaining health and preventing disease.

SHAWN STEVENSON: Let's dig in because this is one of those subjects, obviously it's on it's really on the tip of a lot of people's tongues. A lot of people are interested in it. As you mentioned, being a vanity drug that's just exploded in popularity, but also having these really viable treatments for people who are struggling with diabetes, with obesity.

And what I love about your work, and, we've been connected for many years, is that you're looking at, first and foremost, how do we do this through our lifestyle? How do we do this with food? And we've talked about this before in encouraging the production of this incredible compound that we make.

But now we see that these kind of therapeutic amounts of it can potentially reduce the risk of cancer or treat cancers. Te- give us some of the details.

DR. WILLIAM LI: All of the above. Before we dive into cancer, though I think it would be helpful for anybody watching or listening to have a little bit of grounding on where this whole GLP thing came from, because the history of biology actually helps us, give us context.

So most people don't realize this, but, 'cause there's a lot out there about peptides and hormones, but GLP-1's a hormone, and it was discovered, the human version of the hormone was discovered in 1986 in Boston at Massachusetts General Hospital. So bunch of researchers that go, "Oh, look, we found this hormone called GLP-1 tied to metabolism."

And and how it works is that, this is how it was discovered the gut, called L cells in the gut, L as in Larry cells, whenever you eat food the body senses the intake of nutri- nutrients. The intestines go, "Let's release a little bit of this GLP-1 hormone." Little puff comes out, and that gets into our bloodstream From our gut it as insulin rises, the GLP-1 makes all of our cells, like our muscle cells and fat cells able to take in glucose better, so the blood sugar goes down.

And then a little bit more of this puff of hormone goes to our brain and says, "Hey, dude, man, you've had enough to eat. Let's slow it down." So it suppresses appetite, and that's the loop that I- in the late '80s led to the dis- to the development of the drug, the fir- whole drug class of GLP-1s to lower blood glucose, suppress appetite, and use that entire principle to develop a diabetes drug, right?

Makes total sense. And what I'm-- The reason I wanna say this is because it's all about the mechanism of action. So much of grounding our understanding in science has to do with understanding the why. Yeah. So fast-forward from 2006 to

two thou-- from 1990 8 to 2000 and 6 or so drug companies began developing this drug. It took a while, 20 years to actually come up with the drug version. You know where the drug vers-version came from? It's an effing amazing story Have you ever seen-- Do you know what a Gila monster is?

DR. WILLIAM LI: Gila monster? G-I-L-A. A Gila monster.

SHAWN STEVENSON: Is this something in the desert?

DR. WILLIAM LI: Lives in a desert. It's a honking big lizard. It looks like it's made with red and black beads, really beautiful, and it is the most venomous lizard in America. When it bites you, it doesn't take a chunk out of you. It sinks its fangs in, and it just nibbles, and it milks out venom into your bloodstream.

And it turns out in the venom of the Gila monster is a peptide that is a mimic of human GLP-1. And drug companies figured that out, that 'cause it's a lot easier to make than human GLP-1, and that's how the first GLP- where the first GLP drugs came from the Gila monster. All right? So that's a little interesting kinda natural science twist to this story, and it was designed to lower blood sugar for diabetes.

Makes total sense. So now people-

SHAWN STEVENSON: But first of all, the places that humans look for stuff. You know what I mean? The Gila monsters or the Gila monsters, they're out there minding their business in the desert. It's just "Let's analyze what's in their blood or in their saliva," and we find these compounds.

DR. WILLIAM LI: I'm telling you-

SHAWN STEVENSON: There are so many medications that are derived like that. I think like lisinopril is derived from snake venom or

DR. WILLIAM LI: Yeah...

SHAWN STEVENSON: You know what I mean? Exactly. Just like the list goes on and on.

DR. WILLIAM LI: And now people are looking at bees and, propolis and, all the other things that, the natural world is a gift to humanity, and I think that's partly why we need to protect

the natural world because we there's so much we haven't discovered yet. But I only say this because a lot of people just sort of say I'm gonna go online and order some GLP-1 or microdose myself and DIY it."

That's the vanity kind of movement of it. It's become the Botox of weight loss, right? But I think that people need to understand there was, like, a real scientific basis by understanding how this hormone actually worked. Listen, people got on-- Lots of people with diabetes got on GLP-1s, and guess what?

People noticed they lost a lot of weight, too. Far more weight loss than you would get just from having better blood sugar, be- better metabolism. And so then researchers, including the drug company researchers, basically said, "What's going on here?" And they realized when they ran clinical trials that indeed you get g- good weight loss, massive weight loss.

And for people who are not familiar with the pharmaceutical industry- One of the holy grails of drug companies for decades has been looking for a single drug that could cause you to lose weight. They've tried it. The stuff that came out basically sucked, and had all kinds of nasty side effects.

There was one called Orlistat that you took it, and it just made you cream out your tail end, your tailpipe, and yeah, you've lost weight because you're having diarrhea all the time. Like all no-gos. And suddenly, here was something that improved your metabolism and also caused you to lose weight, pretty well tolerated by most people, and it was intended initially for people with morbid obesity.

Okay? Medical reason. These are people who are heading to the ICU sooner or later, or dropping, okay? And so those people, we all have, in the medical community, we all have empathy for the real deal of morbid obesity. Sure, they should actually get it. But then the word spread. In today's world, it's, you can't keep any secrets.

The algorithm's listening through the walls, so everybody knows that there's a, something that helps you lose weight. And then for s- reasons that still kinda defy my understanding,

medical community just sort of let it come through the sieve and, yeah, let's c- let's give it, let's give it to people.

So now people can get it pretty easily with almost no medical management. You know how many people have actually or have tried a GLP-1 now or are on a GLP-1 now in t- total? 30 million people have tried or are on an GLP-1. 30 million people.

SHAWN STEVENSON: In the US?

DR. WILLIAM LI: I believe that's sort of pharmaceutical numbers worldwide, but I and but, obviously a lot of it's driven by US, which is the biggest market for it. Now, I wanna tell you something. When you give 30 million people free rein to try a drug, you're gonna see what it really does in the real world population.

Sometimes it's not good stuff. So you hear muscle mass loss and bone density loss. It's not universal. You hear about people losing their features of their face because they have, like the Ozempic face or whatever. We've all seen celebrities who don't look so good anymore.

But actually, 30 million's a lot of people. People who suffer those negative side effects are relatively few. Most people do lose a ton of weight. But once you have that many people, you got the attention of the medical community. What's going on here? So the first thing is that this blood this blood sugar drug, diabetes drug, wound up actually being a weight loss drug.

With people losing weight, they observed with so many people on it that people who were taking the GLP-1s had a 30% reduction in having a heart attack or a stroke and deaths from the same. 30%. We don't have-- statins can't do that. We don't have any drugs that can do that. Or do we? And so this was this observational large study, which has now continuously been validated, okay that it actually lowers the risk of heart disease.

And how does that make sense? So people say if you're heavy and you got a lot of body fat and you have high blood sugars, diabetes is a risk factor for heart attack." But when researchers controlled statistically for gender age race comorbidities, and calculated how

much benefit would you get normally from just losing weight or having better metabolism, it was far less benefit from that than you could get from GLP-1.

So GLP-1's doing something all by itself. Enter what I do, angiogenesis. So I run the Angiogenesis Foundation. Angiogenesis, for those of you listening who don't know what it is angio blood vessels. Genesis, how our body grows blood vessels. We got 60,000 miles worth of blood vessels packed inside our body.

These are the highways and byways for the oxygen we breathe, the nutrients we eat, the medicines we take, every organ, every cell in the body, okay? Very important. It turns out Researchers have discovered that the receptor for GLP-1, that's the lock that you would put the key in. The peptide, the hormone's the key.

The lock is the receiving end of it. So you put the key in the lock, GLP goes into its receptor, turn it, and you wind up starting the engines for the cell. Turns out, every blood vessel in the body has a GLP-1 receptor.

DR. WILLIAM LI: So when you actually get GLP-1, it's not just making your having less appetite and having your blood sugars lower, but you're activating all the blood vessels in your body, and this is where it gets interesting.

What does it do to your blood vessels? It right sizes-- it appears to right size the health and physiology of your blood vessels. So we don't know everything about this yet. This is all smoking hot, thin air research. Some of it is still, still cooling out from-- out of the oven. But if your blood vessels are damaged, it seems to repair the blood vessels, gets you back to homeostasis.

If your blood vessels are abnormal, it seems to prune them away and block them from being abnormal. So like a lot of other systems in a body, it's about countering forces to make sure you stay in this Goldilocks zone of health. That's amazing when it comes to the vascular level because it makes sense that you would actually have improvement in cardiovascular disease, heart, and brain, right?

So that's one of our current thinkings, and I'm what I'm expressing here to you and to the audience is we don't know everything yet, but this is a plausible scientific explanation. Now, then recently, a study out of Naples, Italy looked at people with bad blood vessels clogged blood vessels.

It's a condition called peripheral arterial disease, and basically it's you can have a heart attack in your legs. You have blockages of the blood vessels in your legs, in your heart, in your brain. But in the legs, it's called peripheral arterial disease. When you-- people on GLP-1 You know what that drug did?

It mobilized their stem cells, so now you're actually getting a regenerative cell come out of the bone marrow to help to repair the blood vessels. Now, does that help us understand something new about GLP-1? You're damn straight it does, and it's this observation in-- And by the way, this is in a large clinical data set, and they're measuring the stem cells from blood samples, so this is like real deal.

And it's one of the few drugs we know that can actually mobilize stem cells. Again, smoking hot research. You're not gonna be reading about this like in, and hearing about it in a lot of different venues 'cause it is so new. Okay, so that's heart attack and stroke and cardiovascular health, which is cool.

Blood sugar, yes. Appetite suppression, yes. Weight loss, yes. Lowering cardiovascular disease, yes. All right, now that I told you that horse is out of the barn, that the GLP-1 receptors on all the blood vessels, where do we go next? We go to diseases like cancer, which depend on a blood supply, and I told you that GLP-1 seems to correct abnormalities of the circulation, and tumors try to hijack your blood vessels to feed themselves.

So one of the natural questions is, does GLP-1 change the tumor behavior in any way? Again, if you're overweight, you've got diabetes you got a lot of inflammation, that'll drive cancer. So if you get-- If you lose weight and you have better blood sugar, better metabolism, stands to reason that you would actually maybe do better for cancer.

However, and this is like involving hundreds of thousands of patients, presented recently at the American Society for Clinical Oncology, largest cancer meeting in North America, most impactful conference where cancer researchers from academic institutions that would not normally participate in any kind of mumbo jumbo stuff.

All right? They're looking at rigorous data. They presented study after study showing that if you had cancer-- They looked at 20,000 people, okay? Half of them were to-- on GLP-1s, that you could, on average, for four cancers, reduce the risk of s- the cancer spreading. That's the one thing, you've got cancer, you don't want it to spread.

But if you were on GLP-1, it reduced the risk of the spread of lung cancer by 45%, reduced the risk of spread of breast cancer by 50%. It reduced the spread of colon cancer by 45%. It reduced the risk of liver cancer spreading by 30%. And I'm giving a moment of silence here because it is a mic drop. If you have cancer, it's been found that if you're taking GLP-1 for other things, that the risk of your cancer spreading is significantly lowered.

That-- We don't have a drug to do that. We don't have drugs... And this is an accidental side effect discovery. Now, it went further. What about if you had colon cancer and you were treated successfully, right? So colon cancer, it's getting more and more common in younger people. I've heard of 16-year-olds that are getting colon cancer now.

It used to be like somebody you-- something you get in your 70s but you can treat it. Surgery, early detection, colonoscopy, some chemo, targeted therapies, immunotherapy, radiation. We have-- Colon cancer is like breast cancer. It's never good, but we actually have pretty good ways of treating it. The one thing when you've treated it completely, you don't want it to come back.

You do not want it to recur. And it turns out in a study of more than 100,000 people, okay that if people were on a GLP-1, it reduced the risk of recurrence by about 25%. So you know, you-- And this is over five years. You can actually basically shut it down. It ain't coming back. We don't have a drug to do that either, okay?

That is quite remarkable that as a side effect, we notice this is another benefit. Now why would that be happening? What the heck is going on with cancer? And this is where, as a scientist, you and I talk about this all the time off camera and off the podcast, but listen we gotta go back to biology.

Like science tells us everything if you look deeply enough. So do you y-you know the Rand McNally atlas that people used to have to

SHAWN STEVENSON: Of course,

DR. WILLIAM LI: Yeah ... go on road trips?

SHAWN STEVENSON: Of course.

DR. WILLIAM LI: Okay. So Rand McNally is you wanna know how to get around the Colorado Rockies, you order a Rand McNally you flip open the pages back in the old days, and you look at all the roads, you look at the mountains, and then where the stops are, and you pretty mu-much know everything there is to know about that terrain and the roadmap.

There is a Cancer Genome Atlas. Have you heard about this? The Cancer Genome Atlas is a Rand McNally. It's a roadmap of all the genes in known cancers. And they've cataloged this over decades, so we know the genetic markers, and we know what the genes are. And you know what these researchers found?

This is from the Cleveland Clinic. They found that tumors are actually expressing making the receptor, some tumors, for GLP-1. They are painting the target on themselves. And what they found when they dove into this, again, presented at ASCO, this m- recent cancer meeting, that the tumors who were m- the tumors who were making the GLP-1 receptor, painting the bullseye on themselves, people who had those tumors had a 30% lower risk of death if they had a tumor that was expressing a GLP-1.

Now, what does that mean? We don't know yet. This is all smoking hot research. This is thin

air, okay? If you were a scuba diver, you'd be like, "My tank's almost out of air. I gotta look and get as much information as I can on this stuff, and then reload." So this is what research is like.

We observe something, we gotta reload to do the research. Now, what we think is happening is that in cancer cells, they might be ... that are making the receptor for GLP-1, they might be painting themselves with a target. And now, if you're on GLP-1, basically the treatment for blood sugar, obesity, appetite suppression, maybe some cardiovascular benefit, it's not just the blood vessels and other body parts making-- the disease is making it, and somehow the body knows, or this hormone knows that it can just strike out, a, like a sniper to take out that tumor cell making the receptor.

It raises so many interesting questions. If we have a tumor biopsy, we know there's targeted therapy. Should we be sending a biopsy to the lab to see if it makes GLP-1 receptors? Because that might be an idea for what treatment you might wanna select for the patient. That's amazing. Then they looked at, and this is all at ASCO, looked at breast cancer to see in women who are getting breast imaging for whatever reason, no breast cancer in the beginning, any reason at all if they were they followed them over years any woman getting any breast imaging, they found that people who were taking-- the women who were taking GLP-1 had about a 30 to 50% reduction in developing breast cancer.

Now you got a preventative effect for breast cancer. And this is what I'm telling you, that this conference, it was study after study showing that this effect was coming up. So number one, there's a preventative effect we're seeing in some cancers.

Number two, it prevents cancer from spreading. Number three, improves survival. It might be the cancer painting its own target on itself, and we didn't even know that this runaway vanity drug could actually have a benefit for it. And the other thing is... I found it so mind-blowing that, again, presented at this cancer meeting, people on GLP-1 getting chemotherapy had fewer side effects to chemotherapy.

It's protective against neuropathy, which is can happen, this really debilitating, distressing tingling or pain of the nerves. Cut that way down. Cut down the effect on knocking down your blood counts, neutropenia, which is a big problem. It knocks down your immune system. And it's anti-inflammatory as well, GLP-1s.

So I'm not plugging the drug. I don't get paid by the drug companies to, to talk about it, but I'm a biologist. I'm a scientist. I'm a vascular biologist. This thing is present on blood vessels. I'm a clinician who's been involved with drug development. And, we so often we just go black or white, good or bad.

We assign characteristics quickly. We pass judgment quickly on drugs and drug companies and everything. This is an example Of where a drug that came th- through a discovery in the mid-1980s turned into a drug for d- diabetes 20 years later, then became a weight loss drug, then started showing benefits for heart disease, now is actually showing, the biggest bullseye of all, which is improvement in survival, improvement in cancer response, lowering side effects, maybe prevention, preventing spread.

This, to me, is one of the biggest jaw-droppers I've seen in the last decade, and who knows? It might- this might actually be the discovery of the century. I would be very surprised if the person who discovered the GLP-1 axis did not win the Nobel Prize, 'cause they deserve it.

SHAWN STEVENSON: Wow, this is powerful.

This is powerful. Longevity isn't just going to come to us. We've got to walk towards it, and walking is the key word in this sentiment. According to a study published in the journal PLOS Medicine, walking for just 11 minutes a day is enough to extend your lifespan by two years. Let me get that, 11 minutes, two years?

Yes, please. Research from Australia's University of Sydney shows that swapping one hour of sitting for an hour of walking daily can slash your risk of premature death by about 14%. That could mean roughly nine additional years of life. How, Sway? A big part of this has been affirmed by research that was published by the American Heart Foundation, noting that

walking for an average of 30 minutes or more per day can lower the risk of heart disease and stroke by 35%, and lower the risk of Type 2 diabetes by 40%.

The researchers called it a wonder drug. If they were selling this and getting these kind of results, it'd be the biggest blockbuster drug of all time, and it's unlocked by simply walking. And what's at the foundation of this is that it's improving our insulin sensitivity. It's helping one of the most important aspects of life and durability.

It is triggering the creation of more mitochondria, the energy power plants of our cells, that is utilized and unlocked when we are actually using our muscles. The list goes on and on. Now, what if we are able to not just get all this value from walking, but habit stack that bad boy, and help to get some rehabilitation to one of the most important aspects of human function and performance, which is our feet?

When it comes to walking and human performance, our movement truly is built from the ground up, and each of your feet has 26 bones, 33 joints, 19 muscles, 107 ligaments, and each foot has over 200,000 nerve endings that are all there for collecting data about your movement. And we're muting all this intelligence with these crazy iterations of Boxed up shoes that are scrunching our toes together and muting, again, muting this intelligence in our movement and our performance.

And so for rehab and prehab for my feet and for my performance, one of my favorite things to do is not just to go walk, but it's to go walking wearing my Peluvas. Peluvas have an incredible stylish design with a wide toe box and science-backed five-toe functionality. And right now, you're gonna get 10% off of your new pair of Peluvas when you go to peluva.com/model.

Just use the code model at checkout for 10% off. Again, that's peluva.com/model, P-E-L-U-V-A .com/model to take advantage. They are up-leveling things in a big way. You're going to notice how you're moving better, how you're feeling better, and how your performance is elevated once you start wearing and walking in your Peluvas.

And by the way, they've also got some new court shoes for pickleball and things like that. They've got their golf shoes as well. They've got designs for hiking. The list goes on and on. If you want to live an active life, definitely check out [peluva.com/model](https://www.peluva.com/model) to show your feet some love. And now back to the show.

And what we're seeing, what we need is time, and as time is going on, just being able to see all of these are either warning signs or, as you just mentioned, a potentially beneficial side effect that wasn't expected. And using the analogy of a target or a bullseye is such a great one for what I wanna ask you about.

Because we potentially have a very powerful weapon in this battle against cancer, but we don't wanna shoot ourselves in the foot.

DR. WILLIAM LI: Correct.

SHAWN STEVENSON: And so it's having- Access and awareness and education around tools like this, around treatments like this, and really being mindful of the other end of the equation, right?

So you mentioned a little bit about the potential for protecting our muscles and muscle loss.

DR. WILLIAM LI: Sarcopenia.

SHAWN STEVENSON: We have to be even more, as the data's indicating, even more proactive for people who are utilizing GLP-1s to protect their muscle.

DR. WILLIAM LI: Gotta exercise. Gotta stay active.

SHAWN STEVENSON: So this isn't just this one-stop shop, you just take this and all your problems are solved.

DR. WILLIAM LI: No. Gotta work at it.

SHAWN STEVENSON: You gotta do the stuff as well.

DR. WILLIAM LI: Yep.

SHAWN STEVENSON: And so that part of the education as well as, and I wanna ask you about this as well, because we can see potential benefits. As you just mentioned, there's a myriad of benefits in relationship to cancer, so prevention, treatment, reducing the risk of reoccurrence, which is something that's not talked about enough.

Incredible. One of the early concerns as the semaglutides were hitting the market, Ozempic Wegovy, and this is from the Mayo Clinic, and this is a quote, "Ozempic and other formulations of semaglutide, like Wegovy, have been associated with an increased risk of thyroid cancer." And according to their drug data, and so I wanna make a clarity point here, quote, "Ozempic has caused thyroid cancer in animals It's unclear if this drug also increases thyroid cancer risk in humans

DR. WILLIAM LI: New data, it does not.

So it's now that the nail's been put in the coffin on that in a recent clinical study that looked specifically for thyroid cancer, and the answer is no. So again, this is where we gotta be careful about what kind of information from the lab is ready for prime time to be announcing, and I think this is true for longevity, this is true for, all these other kinds of remarkable, even peptides, remarkable things that we hear about so easily with all the voices out there in social media.

What's from the lab? Does it translate to humans? What kind of evidence is there? Does it make sense? And what's ready for prime time, and what needs a little bit more time in the oven to bake?

SHAWN STEVENSON: Yeah.

DR. WILLIAM LI: That's how I think about it.

SHAWN STEVENSON: One of the things that I saw back when this data came out, and you actually go and look at the data, it was in regards to thyroid cells with these rodents having far more receptor sites for GLP-1.

Their receptor sites were operating differently than ours.

And so but it still had to do with this powerful, as you've been mentioning, this the receptor sites for GLP-1, it's connected to so much more in our bodies than just this metabolic pathway that we might think about, and so with your experience, your massive influence in this conversation around blood vessels and cancer and this-- and I wanna tie this all the way back to something that we don't often think about.

In this whole weight loss equation... by the way, a matter of fact, I'm just gonna share some data on this, that weight loss is very powerful as an anti-cancer modality as well. So according to the NIH at least 13 types of cancer, significantly the risk goes up when we're overweight or obese. This includes higher risk of colon cancer, breast cancer, pancreatic cancer, two times higher risk of liver cancer, two times higher risk of kidney cancer, four to seven times higher risk of endometrial cancer if we're overweight or obese.

And so addressing it on that front, and what people don't think about, and I know I sure didn't in my university education, when we're talking about Blood vessels are needed for us to grow, as you mentioned, to get oxygen and nutrients, and the same thing holds true for cancer cells. They'll hijack those blood vessels, as you've shared with us over the years, but fat cells are the same. Our fat cells need that nutrient supply for them to grow. And so we're looking at the potential of tapping into an intelligence and immunomodulation in a way, like what's actually getting fed and what we're starving, i- if that makes sense.

Yeah. So can you talk a little about that in the context of our fat cells?

DR. WILLIAM LI: Oh, yeah. So this is a really important, and I think unappreciated, underappreciated aspect, that fat, which everyone knows about, even a kid, like a grade school kid knows how to use the word fat, and then, and usually assigns a negative meaning to it.

You go to the grocery store, you go to the meat section or wing by it, and you see, a rib eye with a big thick rind of white fat, and "Ew, I hope nobody buys that. Nobody eats fat." Fat has a negative connotation in our modern society. However, biologically, and this is what's important, fat is actually an organ of the human body.

Fat is one of the first cells that forms when your dad's sperm meets your mom's egg and you are just a bunch of a ball of cells. First organ system that gets laid down is blood vessels. Soon after, fat cells form. Long before you have a chin or an arm to wobble underneath or a midline to, a wa- waistline to to have a, have a muffin top, fat cells are forming.

And you know where fat cells form? They form as a cuff around blood vessels. This is long before you had any visible, recognizable body parts. Very early on. And the question is why does that happen? Because fat performs an organ-like function. It's near the blood vessels because fat is our fuel tank for energy, and that energy comes from the food that we eat, which is, turns into blood sugars and it's in, and sent through the blood vessels.

So you want the fuel tanks to be near the fuel pump to get, actually to store the energy, like a car. You wanna pull up to the gas station and make sure your tank your fuel tank cap is on the same side as the gas station pump, right? How many times have we done that? "Oh, man, it's on the other side. I gotta go around."

You wanna line them up just like fat cells do with blood vessels, and that, as we begin forming- you wind up actually seeing that fat actually plays not only a metabolic function for energy, but it also plays a hormonal function as every woman knows around menopause and obesity. Like fat the accumulation of fat can change the way your hormones work, and not enough fat also affects your hormones.

Think about those women ultra-athletes that have zero body fat. What's the first thing that happened? They stop menstruating. Their hormones are whacked, okay? You need fat to be the negotiator of hormones in your body as well as the fuel tank for energy. So this role of fat is fat's not bad.

Fat is good until you got too much of it. You got too much fat, it now becomes inflammatory, and it can leak out the fuel, and now you got, like the using the gas station analogy, if you overflow your gas tank with fuel... L- look the thing, good thing about cars and gas gas stations that you fill up your tank, when it's full, there's a clicker goes click, no more gas comes out.

Could you imagine if you didn't have the clicker, and the gas kept on going there? You're distracted, and the fuel comes right out of the tank, rolls down the side of the car, around the tires, and spills out onto the ground. This big pool of toxic, flammable gasoline mess, fuel surrounding you. That is very dangerous, and that's exactly what happens in our body when we overeat.

We have too many calories. We are filling up the tank way more than the fat cell allows. Now look, gas tanks in cars are hard, and they're structured. They're metal. It's basically like a rectangle or a square or a cube. Fat cells are round. The gas tank in a car can't expand, so it's gonna spill out.

Fat cells can expand 300% and they can enlarge three times larger than they're supposed to. And then the body will make more fat cells, more fuel tanks, which can expand three times larger, 300%. Do that day in and day out, week after week, month after month, year after year. What do you think is gonna happen to your waistline?

Or the viscera in your body, your visceral cavity, you're gonna accumulate a ton of visceral fat. You're gonna get bigger because the fat cells, the fuel tanks are bigger, and now you actually have disrupted the physiology of hormone control, energy balance. And that's why fat is good until it's bad, just so many other things in our body, right?

Back to this whole idea about GLP-1 and lifestyle. Listen, we would-- we're all born, pretty much most of us, to have a normal physiology. Everything is doing what it's supposed to do. The m- the machine of the body is quite remarkable. Everything is hardwired to work well. It's kinda like a complicated laptop.

You go to the computer store, w- it doesn't matter whether you're on a PC or a Mac. What you pull out of that box, it's pretty amazing what it can actually do, right? And your laptop and my laptop, we get the same model, gonna work exactly the same way. We can count on it, and that's how our bodies are engineered.

That's how our fat system's engineered, metabolism's engineered that way, and it's only when we go off the reservation and lifestyle makes a huge difference in going off that reservation, that we need to find ways to debug, to reprogram, to virus-- that will clear out the viruses. Sometimes you need to take it back into the genius bar to get it looked at and find out how you're gonna fix it.

And so I think, going back to this whole GLP-1 story, I'm not advocating that everybody gets on a GLP-1 or microdose or DIY or anything like that. If you are thinking about this, listening to this episode, what I want-- the take-home message I'm trying to send is that we are learning something about these drugs, but we're learning something much deeper about the biology of our body and how our bodies actually work.

That's the question. That's the opportunity. And we should be respecting our body fat. We want-- We don't wanna get too low. We wanna get it just right. That Goldilocks zone, not too hot, not too cold, not too hard, not too soft, but just right, that's where we wanna aim for in, in-- If you want healthy aging, and you wanna get towards longevity, that's what you should be aiming for.

SHAWN STEVENSON: Yeah. I love that so much because our b- we wouldn't be here without our body fat. It's-- Our human body fat in particular is incredibly intelligent. It's helped us to survive. But the conditions that we're in now are not what we evolved in. And as you mentioned, having that capacity eventually creates more fat cells, and they're all gonna be signaling to do what fat cells do, which is "I'm here to store energy."

So of course, our fat cells do have this capacity to release or signal the release of satiety hormones as well- ... once they're filled. But we know that sensitivity can go down as well, and

also those fat cells are still gonna be sending signals because they need more fuel in here. And so this is one of those reasons why long-term weight loss can be a struggle.

What happens when those fat cells have become accustomed to carrying a lot of extra energy, and you, now you've made more fat cells. And so the biology piece here and understanding what our bodies are doing and the intelligence and not trying to f- go to war against these fat cells, but respect them.

How do we create conditions so that all this stuff works in synergy? And this leads me to asking you about, again- There's a huge movement today, thank goodness, where people are really owning the agency that they have for their health. We've outsourced our health a lot in recent decades, and it-- and the environment around us has been conducive to rapid weight gain, to put it bluntly.

And so people are really paying more attention to their nutrition, their lifestyle, all that kind of stuff, which is awesome. And then we have this, obviously this movement of new medications, and we finally found one that is incredibly effective. Incredibly effective. And now we're finding out what's happening long term.

Now, my question for you is, what happens once we start this process? Because The largest study that's been conducted on this subject, this was published in Diabetes, Obesity, and Metabolism. The title of this study is "Weight Regain and Cardiometabolic Effects After Withdrawal from Semaglutide." And so the researchers found that after withdrawal for, from-- for a year, again, these people are losing 10, 20, 30 pounds.

One year later, they've regained two-thirds of the weight, and their cardiometabolic numbers go back to where they started and basically just progress back to that point. Very similar to conventional weight loss, right? We do all this stuff, we lose weight, people gain it back, and then some. And so are we looking at a situation where in the context of weight loss, insulin resistance, diabetes, but specifically the reason that you know most people are using it for, which is the vanity piece, having to be on this forever.

Is there a way forward where these drugs can be utilized, or is there a workaround for us to get some of these results without needing to be on these drugs for the rest of our lives?

DR. WILLIAM LI: Yeah, those are all good questions. We don't really know. The rebound that you're talking about and the, it's what I call it the there goes the neighborhood kind of effect, right?

You spend all this time trying to get a community to be good, and then you get a couple of crack houses set up, and that's it. All of a sudden you're back to where you were, and all that work you did got, just got unwound. I think this speaks to that complex biology that you're talking about.

Once you take this perfect machine that we-- most of us are when we're born, that perfect laptop out of the box, and you kinda take it off the reservation, you start dropping water on it, you drop it a few times, expose it to intense heat download stuff you shouldn't be downloading, and the viruses get on there.

Listen, it's hard to restore it back to its pristine state. So the fact is that there are, in medicine, many drugs that we do give over the course of a lifetime once we are off the reservation, right? A great example of something simple is blood pressure. If you have hypertension, which a lot of people have, it's a silent killer.

You tend to see it after the age of 40. Even people who look healthy, who are fit, who are working out, they wind up just automatically, maybe some of it's genetic, they wind up actually having high blood pressure to dangerous levels, which sets you up for stroke and cardiovascular disease and heart failure.

And tho- for those people, if you wanna keep them in good shape, you gotta give them some blood pressure medicines. We got a lot of them out there. They're not very expensive. They're pretty well tolerated. Most, even a family doctor or GP knows what to do to manage blood pressure, and it's a lifesaver.

And so we are used to thinking about chronic medication. Is that sustainable for an expensive drug that, ... Actually, drug companies were having trouble keeping up with supply because the demand was so huge, and it's expensive, okay? And yeah, maybe the federal government's gonna cover it, but not for everybody.

And, and if you think about everybody who wants to prevent cancer and heart disease, we didn't even get to dementia yet, but there's actually benefits that look like they're happening for people from a brain health perspective and even potentially Alzheimer's, but dementia for sure with GLP-1. There's no way in heck we can actually afford to use a costly drug to treat everybody, nor should we necessarily.

So back to this agency thing. Actually before we go to the agency thing, let me say again really clearly, and I want-- I don't wanna be beat around the bush on this, if you are listening to this episode or watching it and you're thinking of going on a GLP-1 drug, you must talk to your doctor about it.

This is not a DIY thing, okay? I know microdosing is really... I know the formulation, you can get it in all kinds of places, but please talk to your doctor. I'm a doctor, and I want my patients to be able to talk to me about it, and I will give them the best possible advice given their entire situation on what's safe, what's reasonable.

And if you run into any complications, you want the Coast Guard to pull you out of the surf, and you can only do that if you're having your medical doctor involved with getting you on it in the first place. So that's my first thing I wanna say. The second thing is really about agency, because it turns out if you go-- if you rewind back to where we started, I told you that the body naturally makes GLP-1.

It's a normal human hormone, makes a little puff of it in order to be able to absorb that energy, the blood sugar, and also to your brain to tell you to wind down on the food. It takes a little time, so you don't wanna be eating too quickly, but your body will respond to these signals, like clockwork, literally.

What's the difference between natural GLP-1 versus a drug? Natural GLP-1 that your gut makes after you eat something only lasts for a few hours max, okay? The drug, the semaglutides, Ozempic, was it, Mounjaro, Wegovy, Jardiance, you name it, they last for a week. So what I would tell you is that you get the puff from your body just what you need, okay?

And the drug is like a sledgehammer. That's why it's so powerful. That's why we might be seeing some of these ultra effects from it, and that's why you need to talk to your doctor about it. And that's why we don't know whether it's a good idea to scale this up for everybody, and whether or not vanity is a good enough reason to be able to justify it for everybody.

These... listen, with medical discoveries, usually you wind up opening a little bit of a Pandora's box about some social conversations as well. Can we afford the cost of treatment? Should everybody get access to treatment? Once you scale it up, you're gonna get side effects that you might not have seen with a smaller population.

Some of them might be really scary. Is that a responsible thing to do to unleash the kraken, so to speak, and let everybody deal with it? I don't know. These are what science shows you something new, and it inspires awe and wonder about our human body. For those of us who are working in this space, it's "Oh, man, tomorrow's gonna be a better day because yesterday we didn't know this, but tomorrow Oh, wow, what can we do with this information?"

It's gonna be wonderful. Back to agency though, but we all can control our body's production of GLP-1. Again, this is a whole other area of research. Turns out our gut microbiome can help our intestines, our gut makes GLP-1. Once again, you can't escape from a healthy gut. If I- we've listened to... People ask me, "Dr.

Lee, if you can tell people to do one thing to keep themselves healthy," 'cause there's so many things you can do, "what would that one thing be?" And what I tell them when it comes to food is, "Make sure you're taking care of your gut health," 'cause that gut health has a scalable impact for all the other systems of your body, one of them being GLP-1.

So it turns out, and I think we talked about this in our past episode, there are gut bacteria- healthy gut bacteria, 39 trillion of them in the gut. They live in the part of the colon, most of them live in part of the colon called the cecum. That's the beginning of the ascending colon. So anybody who looks at the colon, and it looks like an arch.

You got the ascending part that goes up on one side. You got the transverse part that crosses the bridge. And then you got this descending colon that goes down the arch, down for the other side of the arch, and then it goes to your rectum, and then the poop chute. Then it's the tailpipe. All right? That's how our gut is.

The m- a lot of the microbiome lives in the as- the beginning of the ascending part of the colon called the cecum, spelled C-E-C-U-M. Happens to be where the appendix is, and it, and we used to think the appendix is a useless-

SHAWN STEVENSON: Throwaway ...

DR. WILLIAM LI: Throwaway organ. But it turns out that we think that the appendix is related to the immune system, related to the gut microbiome.

And like a Pez dispenser, it might be the reload- ... like the ammo clip for more microbiome than when you need to restore it. So keep your appendix if you can. All right? Now, what's interesting is that the healthy bacteria are eating whatever we eat, so you don't wanna be... If we eat junk, we're also ditching the junk on our bacteria, and they're eating the junk, too, and that can actually screw up the neighborhood, right?

So you don't wanna, you... And so your healthy bacteria, when you eat fiber polyphenols, prebiotics, pay us back by making it m- their own metabolites called short-chain fatty acids. We've talked about this on the show. You've got plenty of episodes talking about healthy guts. But one of those short-chain fatty acids made by healthy gut bacteria called butyrate actually helps our gut produce GLP-1.

So our gut bacteria, as a consequence of being fed by whatever we choose to feed it, will

make a substance that will help our body create natural GLP-1, that little puff that we want, okay? Why shouldn't we optimize our puff if we know that this is, this natural hormone is gonna be important for us? Maybe for prevention, maybe for cardiovascular health, maybe for survival.

This is a way we can do it. And the gut is something that's pretty easy to think about if you are intentional about it. And of all the bacteria, one of the bacteria has been shown to produce GLP-1, which I've talked about before, called *Akkermansia muciniphila*. That is a GLP-1 producing bacteria

SHAWN STEVENSON: Boom.

DR. WILLIAM LI: Bingo

SHAWN STEVENSON: Mind-blowing

DR. WILLIAM LI: Back to the basics. It's back to that interconnectedness. It's back to the machine, all the parts working together. And *Akkermansia*, you can grow your own by eating the right polyphenols, the ellagitannins, the pomegranates- Pomegranates, yeah ... the cranberry, dried cranberries, the Concord grapes.

Now there's an increasing number of foods that help to foster the natural growth of *Akkermansia*. Peach juice, summertime, love peaches. Hot chili peppers, sprinkled onto a pizza kind of thing. Chinese black vinegar, recent discovery. You go to eat soup dumplings at a restaurant. They always have a little canister of soy sauce, and they got another canister of black vinegar.

That black vinegar helps your body create the conditions to grow natural *Akkermansia*. Amazing, right? So *Akkermansia* you can also get as a probiotic obviously. And that, that's re-recent development, so you can actually have that. These are ways that we can actually support our body's own natural GLP-1 production.

And so back to this agency, back to the diet and lifestyle. How do you get good bacteria? You wanna stay active, exercise. You wanna lower your stress. You wanna lower your catecholamines. You want to be as chill as you can to allow your gut bacteria to recover, 'cause sympathetic stress, epinephrine, cate- not good for your gut bacteria.

Long periods of stress, what happens? Your gut feels weird. Wind up having to run to the bathroom more often, that's what happens when we're in a position of high cortisol continuously. Gotta reset and back to basics. It's all connected, right? And sleep, our gut rebuilds itself during sleep.

When we're sleeping, we think we're inactive. Physically, our whole body looks pretty inactive, just like a lump lying in bed under the covers. But inside that shell of our skin, there's a ton of activity that's going on. The rebuild of our immune system, lowering inflammation, the purging of our brain toxins, and the rebuilding of our gut bacteria, the rebooting.

That's all going on. So the biology that I'm talking about comes from the discovery of beneficial side effects of weight loss. A popular weight loss drug class is leading us to rethink about what our body does all by itself. And then it naturally leads to what can we do on our own without a prescription, without an insurance company, without medical supervision in order to be able to optimize ourselves?

And this is not about high performance. We're not talking about winning the World Cup, winning the Olympics. We're talking about winning the game of life. We gotta just get through day by day, month by month. If you want longevity, you must find ways to dodge the diseases that'll take you out, and then you wanna enjoy your life along the way, and that's why lifestyle and diet. I'm a big believer in finding those combinations that give you joy and pleasure in your life.

SHAWN STEVENSON: Wow. I love this. You said something that we simply just don't think about in the context of disease, and when it comes to our microbiome, when it comes to cancer prevention, the impact of stress. And there's a system in our brains that's wired for calm, wired for happiness, and chocolate has been found to influence that pathway.

This was something that you were just recently sharing. And obviously it's been around for thousands of years, but the science is so cool to see it to see clearly how... And you are the pioneer in this movement with food as medicine backed by science. And I just gave you a gift. My wife went and got you a mug that has the L for William Li.

DR. WILLIAM LI: Yeah. I'm very thankful.

SHAWN STEVENSON: And I gave you some Nandaka from Pique, and I know that we have a shared appreciation for Pique and how they do things. And so the highlight ingredient in there is the highest quality cacao. There's pu erh in there. There's a lion's mane in there. And it's just one of those drinks that's really designed for longevity to support the microbiome and also calm and reduce stress. So talk a little bit about that.

DR. WILLIAM LI: Okay. First of all I think that unlike pharmaceuticals, natural compounds, and particularly whole foods, are actually a matrix of different substances together. And so when you talk about products that are-- have lots of different ingredients to it, the people who make these are always very proud about their formulation.

I sort of say this is our best attempt to mimic what Mother Nature naturally does by putting things together. The advantage we have is we can draw from different pots to combine them in new ways, right? That's creativity, and I think science and the health of science, or the science of health both together, are actually quite a creative act, right?

Yeah. You were talking about cacao. I, you know- Cacao defines what chocolate is. You can't have chocolate without, really without cacao. Now, in other words, it's not chocolate. But chocolate the term, the name chocolate the product is a confection. It's a candy. It's made... it's made by adding different things to cacao.

But cacao, and a lot of people don't realize this, that makes chocolate a plant-based food by na- by definition 'cause cacao pods are plant based. They're these big football shaped pods that come out of trees. I don't... have you ever played around with a cacao pod? Of course. It's cool. It's heavy.

You can shake it. You can feel things rattling around in it. You can throw it like a football actually. And it's also b- really interesting colored. You got the brown ones that look like chocolate, and then you've got these bright yellow ones too. So again, mother nature is so interesting, so beautiful actually.

And I don't know if you ever did this. When... a friend of mine sent me a box of cacao pods, these footballs, and I didn't know what to do with it. So I had to look up and have a little AI guidance on oh, how can you make your own chocolate? You get these things to ripen. You cut open the pod.

The seeds inside them are surrounded by a white colored skin- Looks like a bunch of teeth ... that's the fruit.

SHAWN STEVENSON: Looks like a bunch of teeth.

DR. WILLIAM LI: Like teeth. Yeah. It looks like a bunch of teeth. Did you, do you, have you ever tried to taste the fruit around? Of

SHAWN STEVENSON: Of course, yeah.

DR. WILLIAM LI: It's a little sweet and sour, like a little lychee with a little bit of sourness to it.

Actually, it's quite delicious. It's too hard, too much work to get at it. But anyway, you peel it off, then you dry out and ferment those seed pods, and then you crush them and roast them, and then you're on your way to having cocoa or cocoa powder or cacao, and that's the root base ingredient to make chocolate.

All right. So what's in it? Like many plant-based foods, I got polyphenols. You got all kinds of bioactives we haven't ident- begun to identify. Even the tip of the iceberg, it's just the beginning. But we do know there's proanthocyanidins. Those actually help to recruit stem cells. Like chocolate is one of those things that can mobilize stem cells naturally.

We talked about it in a past segment. Pretty amazing that you can actually improve your circulation by eating chocolate. That's crazy. And through stem cells. Like chocolate's a regenerative food. Yeah, it is if you get it the right dark chocolate and, and this has been studied clinically in people who have cardiovascular disease, you can improve vascular function with dark chocolate.

I find that to be mind-blowing you could do that. But back to this whole brain effect for a second. There's a whole other class of substances in cacao, dark chocolate, called anandamides. And anandamides, when you eat the dark chocolate, work on your brain.

And the part of the brain that it works on...

You know what part, what receptor it binds to?

SHAWN STEVENSON: The Endocannabinoids. I'm sorry.

DR. WILLIAM LI: Exactly.

SHAWN STEVENSON: Endocannabinoids system, yeah.

DR. WILLIAM LI: Yeah. So it's a little bit of a tongue twister, even for me. But the w- the anandamide from dark chocolate activates this receptor system, lock and key, in your brain.

It's called the endocannabinoid system, and there's a couple of different types of receptors, different types of locks. And when you trigger the key into the lock, the endo- the anandamide from dark chocolate into the endocannabinoid receptor in your brain, it actually produces feelings of elation, feelings of joy.

Anandamide is actually known as a, also known as a bliss molecule.

Makes you feel happy, and that's probably one of the reasons why, you know, when you talk, when I talk to people about food as medicine, and when I bring up chocolate everybody stands up and claps and cheers. Like- chocolate's a food that, that doesn't suck. Everyone

loves it, right? You cheer for chocolate that's good for you? Yeah, it's actually got some really positive attributes to it. And anandamide and activating the endocannabinoid system in your brain, making you feel bliss and happiness is one of them.

There's another food that actually has anandamide that activates the brain as well that way. Do you know what the other food is? Is

SHAWN STEVENSON: It's spirulina?

DR. WILLIAM LI: What is?

SHAWN STEVENSON: Spirulina?

DR. WILLIAM LI: Nope. It's actually truffles.

SHAWN STEVENSON: Fascinating.

DR. WILLIAM LI: Now, these are the... Now, I'm not talking about chocolate truffles. Yeah. Those would too, if they're made with dark chocolate.

Yeah. I'm talking about truffles that pigs sniff out of the ground- Yeah ... in, in France and in Italy. They're... Listen, this is a little bit of bougie food, okay? It's super expensive. You're not having it. N- nobody has it all the time, and it's pretty potent. But these are little kinds of fungus-like balls that can...

are dug out of the ground. Pigs can smell them. They're seasonal in the fall and sometimes in the summer. Black truffles, white truffles. You've probably seen them on a, maybe on a menu in a restaurant, a fancy restaurant. Pasta with s- white summer truffles actually tastes very tasty.

I have to say I find it to be delicious, but it can be overwhelming if you have too much of it. It really affects your brain. You feel it. That has... It also has anandamide, and so when you eat it, you also activate this part in your brain. And by the way, those endocannabinoids, those

receptors are the same types of receptors that marijuana- THC, the real cannabis, actually activates as well. So again, this whole lifestyle thing, understanding the biology of the brain, connecting it back to food, connecting it to behavior and mindset and mood, all of this is really part of the marvel of the human body.

SHAWN STEVENSON: Yeah. Wow, incredible. And it speaks to why humans have prized these foods for so long as well.

Our ancestors figured some stuff out about them. And I mentioned spirulina. I was thinking about phycocyanin- ... and spirulina and the relationship with stem cells, because I had the stem cell conversation still on my mind in relationship to GLP-1, which is, again, another mind-blowing revelation that we're getting here first, exclusive here on "The Model Health Show" with Dr.

William Li. And by the way, if people are interested in that chocolate drink that I was talking about, NDACA, go to piquelife.com/model, and you're gonna get up to 20% off there. So it's P-I-Q-U-E-L-I-F-E.com/model, up to 20% off. And it's my wife's favorite beverage from Pique. And chocolate, you were telling me about some research around the microbiome when it comes to pu'erh as well, so that's in there.

And it's just tasty. Good, longevity-based, feel-good beverage. And listen, having you here is always extraordinary. There's always some revelation, some new way of looking at something. I appreciate you so much for staying on top of the data because I know you got a lot going on, but you're just so curious as well.

And you were giving me the analogy before we got started about this octopus and the tentacles going this way and that way with this emerging research and innovation with what we're doing as humans when it comes to food, when it comes to medicine, and seeing the intersection, and how do we stack conditions in our favor?

And that's what it's really all about. So again, we're seeing these targets with GLP-1s, but being aware enough to not shoot ourselves in the foot. So we're stacking conditions. How do

we use this with efficacy in the right situations for the right people at the right times? And also stacking our conditions with food as medicine.

What are those foods that are gonna support our body's production with all of the satiety hormones, which I know scientists are working on trying to target those as well, adiponectin and CCK and all these other things. And right now we're at a very interesting and powerful time, and so I encourage everybody to stay up to date, stay connected with you.

Where can people follow you? Where can they pick up your incredible bestselling books as well?

DR. WILLIAM LI: Yeah. I wrote two books, New York Times bestsellers, Eat to Beat Disease, Eat to Beat Your Diet. You can get them anywhere that books are sold, on Amazon or whatever. But one of the things that I'm so glad you mentioned is I really try to stay on top of the bleeding edge science.

And because this is one of the first times in history where anybody can get on there and spread information, which is a good thing, but misinformation is also everywhere. So I feel really strongly about contributing to the information that people can access by being a credible voice that is a scientist, that I can parse through what's real and what's ready for prime time.

And anybody who wants to keep up, and follow on with what we're talking about here, come to my YouTube channel. It's @drwilliamli, LI. I put out stuff every single week, new things every single week that are practical. The key thing is that I'm a science geek, so I can talk about all kinds of stuff that is in the clouds.

But I think when it comes to communication, what's most important for what people wanna know is what can I do about it? And that's what I put out on my YouTube channel.

SHAWN STEVENSON: Amazing. Thank you for being here with us today. I look forward to many more conversations.

DR. WILLIAM LI: Thank you.

SHAWN STEVENSON: Of course.

DR. WILLIAM LI: Always a pleasure.

SHAWN STEVENSON: Of course. The one and only Dr. William Li, everybody. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. There's so much for us to explore and to process and to consider in this conversation, all the way from the Gila monsters and the development of pharmaceuticals to their rampant use in our society today, and for us to continue to question things, to analyze the data, and most importantly, for us to continue to find that balance and respecting the innovations when it comes to this pharmaceutical model, but also deeply respecting the evidence and the efficacy when it comes to food as medicine and our lifestyle practices and exercise as medicine and joy as medicine as well, and that's another innovative field that Dr.

Li has been doing some work in. He's been sharing some of the early data, and it's fascinating. And so we are able to influence our biology in a myriad of ways, and for us to be open to the possibility of this pharmaceutical model really having some innovation when it comes to this field of cancer treatment.

And cancer rates have obviously just grown precipitously in the last few decades for specific types of cancers and, and it and cancers are happening at higher and higher rates in younger and younger populations. We've gotta find some solutions. And also, as important, we've got to address the environment that is causing the development of more and more cancers as well because this stuff doesn't just happen.

That was my fear. That was my fear and my belief when I was in college. "I hope cancer doesn't happen." And this is abandoning laws of physics and causality. There cannot be an experience or expression of something without a cause and effect. And we know what many of these carcinogens and the environment that we have allowed to be created around us and the catalyst that they can contribute to the development of cancer, stacking conditions against us.

And so we've gotta address that piece and also address when lives are on the line, what can we do to help survivability? But also, what was so interesting, one of the things that was so interesting is the reduction, 25% reduction if I remember correctly, that he mentioned in the recurrence of cancer.

That's incredible. That's incredible. So again, this is something for us to keep our eyes on. Also for us to remain skeptical All right? And to continue to ask questions, to advocate for ourselves, for our family members, for our communities, and stay connected to cutting-edge information like this and teachers like Dr.

William Li. And this is why I'm so grateful for you being a part of this community. And with that being said, we have a significant number of people who listen to The Model Health Show on a consistent basis who aren't subscribed. Hit the subscribe button so that you don't miss a thing, whether you are listening on Apple or watching or listening on Spotify, whatever platform you're listening on, or even pop over to the YouTube channel so you can join us in the studio for these episodes.

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