Gary Taubesu2019 Background and Path into Nutrition

Yeah. So, I just want to introduce our viewers to Gary Taubes. In case you don't know him, he's sort of the OG. He's like one of the guys in this space.

Everybody knows and everybody really respects. Because you've been probably one of the most, influential voices in nutrition, which is interesting because that wasn't your original background.

In fact, but you came to it sort of happenstance and, in your sort of groundbreaking book, Good Calories, Bad Calories really lead into some of the myths of nutrition and some of the really, things that were just sort of, I don't know, I guess a lot of the stuff had never been, looked at critically and really sort of laid it to bear.

And so that's, one of the reasons everybody really respects you and really been trying, you know, you've been in the space for, for a bit now and really, you know, has been has been a champion of good science, which I really appreciate you.

So thanks for thanks for being here. I guess, let's start off with your background, how you got into the space. You know, what made you interested? I mean, I think that's a great story.

A great back story to start with. Okay, so, yeah, I'm a journalist. I'm not a physician. I'm not a I'm not a PhD. I'm not a nutritionist. I, have a hard science background, physics and engineering.

And, then when I went into journalism, I sort of stumbled into studying bad science. Technical term might be pathological science, which is some science, some things that are.

And so and my first book was about high energy physicists who discovered, much to their chagrin, non-existant elementary particles. And I documented how they came to learn they were wrong.

My second book was about their sort of great scientific fiasco of the second half of the 20th century, called cold fusion. Cold fusion now shows up in every other science fiction movie is the discovery of, the fuel that will change society.

In doing these books, I was mentored by some exquisite experimental scientists in sort of what's necessary to get the right answer in science, how critical you have to be, how skeptical you have to be, how cautious you have to be, because the possibility that you've screwed up and over interpreted in your evidence is just much greater than the possibility that you have to get something right and do something worth paying attention to.

And when I finished my cold fusion book, I had a lot of fans in the physics community, and some of them said to me, that book was called Bad Science, and it came out in 1991.

And some of my physicist friends said, if you're interested in bad science, you should look at this stuff in public health. It's terrible. And I did, and they were right.

That's the short form. Everything I had learned from these, these really hard nosed scientists working in, in, in hard sciences and hard sciences or sciences where you can actually test your hypotheses rigorously.

Everything that I had learned about what you had to do to make sure you got the right answer was considered kind of a luxury in public health, because for the most part, we can do it.

If you have a hypothesis at some aspect of your diet or environment, causes, chronic disease, you can't you can't really test that hypothesis, an experiment.

You can't randomize people to, for instance, smoke cigarets or not smoke cigarets and see you run it out for 20 years and see if the people who smoke and more lung cancer.

So instead of, doing these experiments, I mean, you technically you can do them. They're always possible, but they're either unethical words orbit and they expensive.

They could take decades to do. And, it's very easy to screw up an experiment. So if you take a decade doing an experiment, you don't actually know if you got the right answer or not.

So then you have to spend another decade replicating it, and you have to get the funding to do all that. And so you have to convince the people in the government that they should spend tens of millions of dollars funding a trial that may or may not get the right answer.

And when you're done with that, they're going to have to fund the same amount of money again to do the study over or to improve upon it, to increase the likelihood that you got the right answer.

So instead, we ended up with these fields public health and nutrition and chronic disease, where for the most part, our hypotheses are never really rigorously tested.

And people believe them in part because their colleagues believe them and their colleagues believe them, because they believe them. And you end up with dogmas that may or may not be correct.

And in the late 90s, I was working then doing most of my work for the journal science as an investigative reporter, and I launched into first an investigation of this conventional thinking that that high blood pressure is caused by excessive salt consumption and the evidence to support that turned out to be sort of woefully inadequate to do the kind of public health interventions we were doing.

And it turned out that the the researcher, the who had been most prominent in promoting this low salt diet dogma, was one of the worst scientists I had ever interviewed.

And he also took credit for getting the world on the low fat diet we were all eating in the 90s, and when he did that, I literally hung up the phone and called my editor at science and said, well, I'm done writing about salt.

I'm going to write about fat. I have no idea what the story is, but it's this guy was involved in any substantive way. I can guarantee there's a story there that we don't know about, and the low fat dietary dogma that we all grew up believing that a healthy diet is a low fat diet also turned out to be built on, you know, sort of inadequate scientific evidence.

A lot of, people seeing what they wanted to see in the studies and ignoring whatever they didn't want to see, which happened in that part, that situation to be the great bulk of the evidence.

And then that led me into my first book, Good Calories, Bad Calories.

Why Nutrition Science Went Wrong

And, it turned out while I was sort of in doing these investigations and learning how bad the science was about these, these what I think are incorrect theories, dogma that there was a very obvious alternative hypothesis that had always been mostly ignored or swept under the rug because it challenged the conventional thinking.

And that was this idea that refined, processed carbohydrates and sugars are the primary cause of the sort of chronic diseases that are so common in our lives now.

So d diabetes, heart disease. And then you could even get the, yes, stroke, cancers, Alzheimer's. The further you go out on that spectrum, the harder it gets to.

I mean, the more you're speculating. But I ended up writing my book so that in one hand, kind of explaining why what we had grown up believing was almost assuredly wrong, and then supplanting that belief system with something I believe to be right, which is where I stepped over the line from being a journalist to an amateur scientist and probably pissed off people.

I know. More than I. What I what I think is interesting, is your hard science background because the thing about calories. And so I grew up, I went to medical school in the 90s.

So I grew up in the thick of the low fat era. You know, all fat was bad. I learned that through medical school. Super interesting. Because when it came to weight and calories, what you always hear about is, oh, it's like the first law of thermodynamics.

And I'm always like, God, like the hard scientists think that's all crap. And yet the nutritionists and the, you know, people trying to say it's all calories are equal and all this sort of stuff are always like trying to point to hard science.

I called it physics envy, you know, because they want to try and pretend they've got this sort of soft science with very poor evidence, and yet they're trying to link it to physics, which is, you know, much more definitive in that way, especially this whole idea of cutting calories and, you know, fat, being bad for you.

And I find it interesting that, you know, that that's the, you know, the nutritionists think that they're hard science, too hard scientists think that they're just, you know, really, really poor.

Like, it's it's just not science at all sort of thing. Right? Because it's just a lot of opinion. I mean, this idea that we get fat because we eat too much, it seems so intuitively obvious that, I mean, we all spent decades of our life believing it.

It just seemed natural, even, you know, didn't matter. Like I often look back when I was in junior high school in the 60s, I'm not very. And, you know, there was two obese kids in my junior, two kids with obesity in my junior high school class.

I knew it because we all did heavyweight wrestling, and there were three of us who were sort of big kids and two who were 40 pounds heavier. We never thought of them as kids who ate too much or kids who were lazy.

You just thought of them as kids who were different. And you didn't. I, I can bet we didn't treat them with the respect they deserved. But everyone does.

But still, we never thought of them as suffering from gluttony and slot. But this became the sort of common way that the medical community thought about this disorder.

And I do, actually, I'm spoken to very good physicists. I've tried to enlist in my cause, and I can't get them to understand that it's not necessarily about eating too much, and it may not be about eating too much for anyone, that there are people who are predisposed to get having and they're going to get heavier, even if they restrict their diets their whole life.

And there are people who are predisposed to stay lean, and they're going to stay lean even if they eat a lot. I have a sibling like that. No matter how much he he couldn't just like Lean and boss and I would get sick and he would stay thin.

The. You know what happened? And I think when we talk about good science, one of the, founding principles of good science is they can never fall in love with your hypothesis.

So the way to avoid falling in love with your hypothesis, your belief. Because once you fall in love, you're going to just spend it very much relates to romantic attachments as well.

You're only going to see the good things about the person you're in love with. And so you come home and you tell

your mother, I'm going to marry this wonderful woman.

And then your mother looks at her and sees somebody who's completely inappropriate for you. And all you see are, you know, she's got beautiful hair. And look at those big hair and she can hold an intelligent conversation with me.

And like, three years later, you're thinking, I should have listened to my mother, or she's thinking she should have listened to her mother, but here.

And we see what we want to see once her enamored with someone or some idea. And the way you get around that in science is you make sure you have alternative hypotheses.

So there are many different ways you can interpret the data. And if you can think of all those many different ways yourself, you'll be equally enamored with different variations, and you won't selectively see only that which sort of feeds your love.

And in nutrition and obesity, they just never did this. I got this idea, based on the laws of thermodynamics, and they thought it was physics. They did have physics.

Anyway, this is like 100 years ago that this determined why people got, They would never say it. Determined why people got tall, even if somebody tall was very heavy.

Or why children grow or any of these other growth phenomena. But that became their belief system. And it's still nowadays, people spend a lot of time trying to blame obesity on something other than behavior.

So it's like ultra processed food, right? And why is ultra processed food bad for you? Because if you blame it on processed food, you can blame it on the food industry.

But the reason it's bad for you is it's in theory, because we eat too much of it. The reason we too much of it is because it tastes too good. And then if you ask the question, why do some people eat too much?

And other people clearly don't because they're lean. Now you're back to blaming behavior. And so one of the issues that I've brought up in my books is that people we've gotten ourselves into this fix with obesity and diabetes, not because people just doing the research is didn't think very hard about what they were doing.

They didn't never question their assumptions. They never said to themselves something simple like, why is I'm thin and this person's like my and you know, Elmo is not because I've seen a rich in a lot of food and yet she's rotund and I'm lean.

So how can I blame her? Obesity on eating too much if she eats less than I do? Yeah, I think that the the whole idea, it comes from this sort of calories in, calories out sort of idea, which is that, hey, calories in what you eat in, calories out is exercise.

So therefore that's all under conscious control. So therefore if you gain weight it's your fault. Therefore we can make fun of you. We can shame you because it's, you know, it's that person's fault, which I actually think is super, super unfair.

So, you know, in terms of the, you know, they sort of you point out these sort of, prevailing hypothesis, which is, you know, calories and it's just eating too much.

It's all too much. It's all about calories and so on. You know, maybe you can lay out your alternative hypothesis, for this because I think it's very interesting because, you know, when we're talking about longevity, you know, you want to talk about preventing chronic disease, as you said, and maintaining a proper weight is obviously a very good part of that.

Diabetes is another part about, about it. And we'll go into that later. But, you know, how how would you explain sort

of in a nutshell, your alternative hypothesis, which, by the way, I and a lot of other, you know, doctors think is much more correct than the prevailing hypothesis, which unfortunately refuses to die, puts it is always there.

We're always arguing about this, this hypothesis. So okay, so and this let me link it into longevity. Because one way to think about longevity is, is the prevention of these chronic, the laying of these chronic diseases that tend to kill us, as long as humanly possible.

So if you can, if you can delay the onset of of obesity and diabetes and heart disease and cancer and dementia and stroke, and, you know, the longer you delay at the long your first of all, the longer your health span is.

So the longer healthy the better you feel, the younger you feel because you've delayed these chronic diseases. And then ideally you compress the chronic.

You know, at some point your body. Can't do it any more. And it manifests itself in some series of pathological phenomena that will kill you. And they're very likely to be similar to these diseases.

So the question of longevity is also the question of preventing and delaying these major chronic diseases. And when I talked about this alternative hypothesis being sugar refined brain hypothesis, set of appeared in my research, and it's very obvious when you look back at this, it's basically there was a whole group of, physician researchers, mostly British, because the British had this, colonial empire around the world, the British Empire.

So they had physicians working all around the world and in government hospitals and missionary hospitals. And they would notice at populations that their traditional diets, whatever their traditional diets, were.

So it could be, you know, mostly grain and mostly, carbs and healthy Asia could be mostly, you know, meat and fish and, and sea mammals in the, in among, you know, in the Arctic regions, it could be cattle and the pastoral populations and buffalo and elk and the Native American populations.

Whatever it was they were eating, they didn't seem to get these common chronic diseases until they went through what's called a nutrition transition. So they started interacting with the West, with the Europeans and the Europeans descendants, and we start trading them sugar and flour.

And when that happens, you start seeing these epidemics of obesity and diabetes and as this science was being written about in the medical journals, it was fairly prominent.

Researchers studying heart disease, studying obesity and then diabetes, of course, were identifying high blood sugar and elevated levels of the hormone insulin as possible causal factors and driving high blood pressure.

The Carbohydrate-Insulin Theory of Obesity

And this whole science of metabolic syndrome, which, begins to sort of appear in the medical literature in the late 50s and 1960s, courtesy mostly of a Stanford endocrinologist named Gerald Reburn, and then begins to be accepted only in the 1980s to 1990s implicates this whole slew of sort of pre-diabetes, obesity related risk factors in heart disease, and there always linked to, sort of carbohydrate content of the diet and the latter.

So it connects completely with this idea of a nutrition transition. These other populations. So the end result is effectively the, the quality of the carbohydrates who eat.

So they're processing and the sugar content, drive insulin resistance for lack of a better term, which is a what type two diabetes ultimately is, is is severe insulin resistance.

They drive obesity and the elevated blood sugar, elevated insulin levels are the most likely cause of, of atherosclerosis, coronary heart disease. You could link them to stroke.

You could link it to cancer, you could link it to Alzheimer's. So basically it's a very it's a picture that emerged in all

these different fields. In, obesity in body weight per se.

The idea is that, you know, we don't get fat because what we we get fat is what our body does with what we eat. This is a line through which I have to give Eric Westman credit.

What our body does with what we eat is a process called intermediary metabolism, and it's dominated by the central nervous system and the endocrine system, hormonal plans and the dominant gland driving fat storage is the pancreas, insulin in effect the dominant hormone.

So once again, you've got basically raised insulin levels. Your body preferentially stores calories fat, and the insulin inhibits the release of, fat from the fat cells.

So if you're insulin resistant, you're, you know, storing fat, not burning it. In effect, then everything ties together very neatly. It doesn't mean it's right, but.

I think it moves the facts better than than the whole calories. That's for sure. I mean, the calories thing. And we could get into it however that you want.

Explains nothing. Yeah, that's a simplified the value of the theory and is what it can explain. You know, it's it's. Called coterie. Power. And the idea that you get fat because you eat too much has an effect of zero explanatory power or not, like a to explain.

Or even even the you know, if you say that all calories are equal, you get, you get, you know, this is the sort of dominant, sort of theory even now, I find it very strange because, you know, the body runs on hormones, right?

That's that's how, like, everything in our body is run by hormones. Much, much, you know, pretty much. And certain foods stimulate certain hormones. Okay.

That's not controversial in any way. Some foods will stimulate insulin, and some foods really won't stimulate insulin. And again, that's not controversial.

That's just fact. It's accepted fact at this point because you can measure these things. So it's like so you if you eat 100 calories of certain food, which stimulates a lot of insulin, say white bread, or you eat an egg which stimulates 100 calories, same calorie, but stimulate zero insulin.

Yet somehow we have to believe that there's super high insulin versus no insulin. Same hundred calories makes no difference to the human body. Oh, it's like, why wouldn't it make a difference? Like this is nonsensical.

You know? And this is the problem with, people growing up with a belief system because you could sit down and I've done this, sit down with these very, esteemed, respected researchers or their professors at their institutions.

They're ahead of committees. They serve on, consulting boards. They work with the American Heart Association, they write journal articles and commentary, they host conferences, and you sit down and make the argument that you just made.

And I've made this with them. I mean, it doesn't matter what. We're not talking about energy here. We're just talking about the effect on the human body or any organism.

And the macronutrient content of the food has, whether it's a carbohydrate or a protein or a fat, will have a very different effect on the endocrine response to that food.

And upon response has a very, you know, the fat tissue and then the non fat tissue, the liver and the organs and the muscles that are burning the fuel respond the endocrine response differently depending on which hormones are secreted and how much.

And so you've got different macronutrients, different entrepreneur response, different fat storage or fuel oxidation or mobilization of fuel, or use of fuel or even choice of fuel, whether you're going to burn glucose or glycogen or whether you're going to burn fat or, you know, ideally not protein.

And they'll look at you like, I mean, I used to take me seriously. I'd like to think they still do. But the problem is, is what you're saying to them is they have been wrong about the most profound concept in their field for their entire career.

And everybody they know, all the people they respect, who think like they do, are all so wrong. And, you know, Jason from, you know, from allergist in Toronto or Gary Taubes, a journalist of all things, is explaining to them why they're wrong and nobody it's like I compare this to imagine, you know, you're the you're an atheist going in to speak to the pope and you're going to explain to him why God doesn't exist.

Yeah. Or the pope going to, you know, you're, you know, a devout Catholic going to Richard Dawkins or one of these very famous atheists explaining to them why God does exist.

And you just. Yeah, we're not built to accept this possibility. None of us can do it. Yeah. We a strange part, I think, is that the sort of if you just follow the logic, it's so logical.

That is insulin is not an evil hormone because I get this all the time, right? Oh, you're saying insulin is evil? I'm like, no, I'm not saying insulin is evil.

Insulin is like a normal hormone. But to tell your body to store fat and to block fat burning, which is lipolysis, that's its job, right. And again, that's not controversial.

That's his job. I'm just saying that some foods stimulate a lot of insulin. Therefore it will encourage you to store that energy as opposed to leaving it for you to use, which is, you know, to me is is not controversial in any way.

And yet they can't see past. And that's I totally agree with you. That's what we're that belief system. It just sort of trumps everything. And in the end it's it's always hard to sort of discuss, but even harder I think, is that they look at the studies and then everything gets interpreted ed in that way that, oh, there it is all about calories.

I'm like. Oh, this is yeah, you can show. So one of the reasons we believe what right is you can tell people. So the high simplistic view of what so often called the carbohydrate insulin model is carbohydrates stimulate insulin secretion.

Yeah. And the sugar has an effect that's different than, than grains or starches. But that effect is the end result is to increase insulin secretion and insulin stimulates fat storage, inhibits the release of fat to eat carbs, you get fat or you don't eat carbs, you get leaner.

So we now have, well, there's 200 years of history of very influential commentators, physicians, writers saying, look, you know, carbohydrates make people fat.

That's the simplest way to think about it. Don't make everyone fat. Clearly not. But those of us who get fat get fat because of the carb content diet.

And if we don't eat those foods, we get leaner. And now we have 25 years of clinical trials confirming that. So we have a test. But the problem is often when people get lean or they also eat less, that's because I would say because they're burning their own fat also.

So when you're weight stable, you're not burning more fat than you're storing it staying stable. But if you're losing weight, you're burning that fat.

That's where it's going. So you don't have to eat as much so you're not as hungry. And so you eat less. And now people say, oh, look, we did the clinical trial.

These people didn't eat as much. Therefore they lost weight because they eat less. So there's always a way to interpret the evidence. Yeah. Not always.

The key to doing good science is to creating an experiment where there is not an alternative way to interpret the evidence, depending on what you see.

But there's always a way around it. So they can keep their belief system and packed, and they don't ever have to confront the possibility that they made a mistake of this magnitude.

Yeah, I hear what you're saying. I think it's because there is a confounding between calories and insulin effect, because if you keep the food stable, the more you eat, the more the insulin effect.

So then people say, well, it's the calories, whereas other people say, well, it's the insulin. But could also be the calories include carbohydrate calories.

Yeah, yeah. So, you know, if you let's say you starve someone, this is always the observation. When I was doing my research for good calories, bad calories, I said, we don't talk about calories because when we starve people, they get them.

I mean, and I would say, yeah, but when you start thin people, they also get thinner. Yeah. They don't say they're thin because they need too much. But you're willing to say they're fat because they eat too much, because the people with obesity also get thinner when you start them.

But the point is, if you somebody is eating 2500 calories a day, or let's say 3000, that's a lot. Now, it wasn't a lot 60 years ago. And 50% of that is carbs.

That means you're eating 1500 calories a day. So now you starve them and you give them, say, 600 calories. It's a classic very low calorie diet. They're getting 300 calories from protein or 200 calories from protein.

And the rest is, even if the rest is all carbs. You've cut their carb content from 1500 calories to 400 calories a day, so maybe that's why you're seeing what you're seeing.

And again, a good scientist says, oh, that's an interesting point. What experiment? And I do to examine that hypothesis and see if it's valid. And you can plan experiments to do that.

But in order to do that you have to legitimately be curious. You have to be legitimately accepting the possibility that your belief system is wrong. So then you can devote energy and ingenuity and effort into figuring out which is right.

And that all comes back to having to accept the possibility that you screwed up. Yeah, it's hard for people to do that. I mean, it's almost impossible.

It's, and again, I, I get accused of the same thing and then I say, well, you're right. If I'm wrong, I'm never going to. There is no evidence that will convince me.

Yeah. And then they say, Now this is so close minded that we can't trust anything I said about being closed minded. I'm being honest. Yeah. I'm accepting that.

I'm just like everyone else. We're all like this. The history of science. So the history of science for sure. I mean, I think that that's, you know, what to me is very interesting in your book.

And I think this was quite sort of eye opening to a lot of us who read at least love our physicians, because I've, I've spoken to a lot of the physicians in the low carb sort of space is that there was a lot of history of this being a, well, sort of accepted, you know, that carbohydrates, you know, they didn't know about insulin, of course, in the 20s, 30s, 40, 50, but that wasn't they didn't know about it, but they yet they knew and not just physicians, but almost everybody knew that sort of some foods make you fatter and some foods don't make it fatter.

So some foods are more inherently fattening than others.

Diet, Diabetes, and the History of Treatment

Right. And those foods tend to be sugars and refined starches. And that was sort of just sort of accepted wisdom. And that part was very interesting to me because one, I think, you know, if you ever ask, like your grandmother, they'll tell you exactly that, right?

You know, they'll be like, nobody gets fat eating broccoli, right? It's like, but eat cookies. Yes, you're going to get fat. So stop eating cookies if you want to get me.

Yet there was actually a huge history. You know, and not elsewhere, like, but in North America, everybody, it was sort of well accepted for so long. And then it sort of all changed in the sort of 70 years, 80s.

So a lot of us just don't remember then, you know, this. Is so. Rich in. Eating at exactly the time that people started that obesity started becoming such a noticeable problem, that diet books were becoming bestsellers regularly.

And clinicians would experiment on themselves. Right. So they'd get this idea. There was some research articles, through the 40s, guy named Pennington who was a worked for the industrial medical division at DuPont.

And he had done experiments putting executives on low carb diets. And then people like Robert Atkins and Herman Taylor, who wrote a famous book called Calories Don't Count.

And so they tried it on themselves, and it worked. And you try it on your patients. It's this conversion experience that we've all gone through. People say, well, you only wrote this because it worked for you.

And I said, well, that's not actually true. But if it didn't work for me, I would have been a much harder sell. The science wouldn't have meant so much to me if I when I tried carbohydrate restriction, I got fatter, for instance.

And there are people out there who swear this has happened to them, and I'm willing to believe them because I think we should believe everyone until remarkable evidence demonstrates otherwise. But, Yeah, it just it's, you see, the same thing happen, and virtually everyone.

And again, it's hard to judge without really well done clinical trials. What proportion of people benefit? I mean, you know, in your patients, the, you know, did you give these foods up, you get healthier.

But this was happening in the 1960s. Again, there are other dogmas that entered into this field. And one of them, beginning in the 1960s, was his idea that dietary fat causes heart disease and particularly saturated fat.

And so now you have obesity. Doctors and cardiologists like Atkins saying, look, if you want to get lean, don't eat carbs, just eat, you know, mean cheeseburgers, double cheeseburgers, lobster Newburg.

Don't worry about the fat content. Just stay away from the carbs and this outraged the rest of the medical community because they were beginning to promote this idea that it was a dietary fat that caused heart disease.

And it's the reason people like me never experimented with Atkins, because who cares if you lose weight, if you have a heart attack, right? So trade off isn't really worth it. So, this.

Saturated fat causes heart disease. Dogma became conventional wisdom. It was tested in multiple clinical trials. It never panned out. And the trial, you know.

And yet people believed it anyway. Right, people? Well, again, is this the sociology and politics are fascinating. So researchers go to the Congress in the United States, and they say, we want to test this hypothesis.

And Congress says, okay, we're going to give you $50 million to do the test. It's only seen as a success if the test

turns out it's a hypothesis can be confirmed.

So if you do the test and then you say, well, it turns out we were wrong, which in any other science is a massive victory. If refuted your hypothesis, that's that's what you have to do.

You have to get rid of all the wrong stuff, and then you're eventually only left with some ideas. There's a few of them that might be right. And then you slowly do those experiments and you whittle it down until there's only one theory left that you can trust.

But in this world, if you came up with what was seen as the wrong answer because your hypothesis was incorrect, you not only failed the medical community and the public, you failed the congressmen who had been so kind as to a lot to this money to do this study.

So there was an extraordinary amount of pressure, both the researchers who wanted to prove they were right, but who wanted to justify the investment. And again, despite that, study after study failed to confirm and but we pushed it anyway.

The public health people, the US, the, the Pentagon, the agricultural, department, the USDA, you know, you're pushing this idea that we should all we low fat diet.

It was probably not just a coincidence that most of the processed foods in America are a high carb. So, you know, you're pushing agriculture, you're pushing grains and sugars as much as livestock.

We end up with an untenable sort of conflict between what do you have to do to lose weight and what you're supposedly have to do to prevent heart disease.

And if we're talking longevity in doing this conversation, 30 years ago, you're telling people to avoid fat and avoid salt and avoid saturated fat specifically.

And now, 30 years later, we're saying, you know, don't eat sugar, refined grains and seed oils, depending on the strength of your belief system, where.

The whole salt thing hasn't really, there's not been a lot of evidence for that either. Well, that's it's come into this. It's. Yeah. Let's let's press.

But it's still also one of those things that got pushed them still out there. I mean, it's sort of but again, as a nephrologist, I get this all the time.

And this whole idea that eating a low, low salt diet is good for you. Yeah. It's it's there's no evidence, really to suggest that that's true. There's even evidence that suggests quite the appetite for.

Yeah, the, but this was just, you know, it was the nature of the sign that the whole idea of establishing dietary cause of chronic disease is basically a post-World War Two concept.

Yeah. And this idea of, you know, using epidemiological studies, observational studies is huge cohorts of 100,000 people to see what they eat, who's healthy and who's not is a post-World War Two phenomenon.

This brand new sciences. And the people doing this, they weren't trained as like physicists or engineers. They didn't have, they were they were nutritionists and dietitians and, they had no real conception of what the real science is.

And they were making up the rules of these sciences as they went along. So let's talk about, diet and diabetes, because you wrote another book, your most recent book, Rethinking Diabetes, which was, again, the very insightful sort of, you know, huge amounts of information that I hadn't known before.

About diabetes, because that too is linked to obesity, obviously. So weight loss, diabetes, they're linked and both have a huge impact on health, mostly cardiovascular disease and cancer.

But how does that sort of bad science play out in the field of diabetes? Well, again, that's another long story in the book. Was regulatory during the research, by the way, I wrote that book just because I thought diabetes is the most it's kind of a crucial disease in this discussion because, okay, you could argue with obesity.

It's not the carbohydrates, it's the calories. A calorie is it calories or calorie? But diabetes is a disorder of insulin dysregulation. Type two diabetes is insulin resistant.

Type one diabetes is insulin deficiency. And the insulin is responding to the carbohydrates on a fundamental level. I mean, the glucose in the circulation stimulates the pancreatic beta cells to secrete insulin.

So we can put aside this whole calorie as a calorie thing because it's not relevant. And we can just ask for patients with diabetes. What's the proper way to control this disorder.

And how do we prevent, you know, in the past 60 years, the prevalence of diabetes in the United States has increased sevenfold. I mean, imagine any other disease increasing seven X and 60 years, and there'd be this public outcry.

And here there's none. It's just people say, well, we have drug therapies, a drug device. Therapies are getting better and better every year. And it's linked to obesity.

So these are people just don't have the problem in moderation. So we can have an outcry because it's their it's the patient's fault right. They're they're eating too much or eating the wrong foods or whatever they're doing. But it's there fault.

So it turns out when you look at the history. So the first sort of successful treatment of a diabetes case was in 1797 by a British physician working for the British military, who put an army colonel with diabetes.

A guy had lost a lot of weight. He was thirsty all the time. He was peeing constantly. And all these symptoms of out of control diabetes and this, this, this, this British doctor, decides, Rollo, that, you know, look, the the way you diagnose diabetes, you look for sugar in the urine.

Or back then they had their assistants taste the urine. And if it tasted sweet, you knew that diabetes ideally had an assistant for that job. The the, it was interesting how many diseases were diagnosed by tasting the urine back then, but that's a digression.

Anyway, he figured that the urine sweet. That's a carbohydrate turn not being properly metabolized. So let me make this guy ate a diet without carbohydrates.

It's basically fatty meat and rancid meat. And then some green vegetables. And the guy gets better. Colonel Meredith gets better. He actually lives for 12 more years and rather tries him on another patient, a general who sometimes gets better but then falls off the diet, goes back home.

His regular doctor says, don't worry about you. Eat me, eats whatever he wants, and he dies. So Rollo writes a pamphlet, explaining what he's done, and he circulates a pamphlet all throughout the United Kingdom.

And he asks physicians back. Then they try it with your patients. Diabetes was so rare that a physician might see a patient once or twice in his lifetime and let me know what happens.

And a few dozen physicians write back to many publishers who are, you know, revised versions of this pamphlet with their letters saying, you know, it works.

I get people off carbs. Their diabetes more or less goes into remission. And so through the 19th century, this

becomes a standard of care. So diabetes is seen as the sort of carbohydrate metabolism.

And the idea is that they can't metabolize carbohydrates safely, don't eat them. But because the patients usually whether type one or type two and they didn't differentiate back then, they would usually show up at the doctor's, only after having experienced significant weight loss.

You want to put weight back on them, so you don't want to you want to replace the carbohydrate calories that they're not eating with something. And the one macronutrient that doesn't stimulate instance secretion is fat.

So through the 19th century, these diets became higher and higher and fat. And by 1900 doctors are saying, look, the essence of a diabetic diet is butter.

And they're patients, you know, they're older patients. The younger patients who have type one diabetes cannot they they need insulin, and they're going to die without it.

And they do. This diet will slow down the disease progression, but it won't stop them from, passing away from pretty awful deaths. But the older patients who we would now say have type two diabetes did fine.

They lived as long as anyone. And there's some variations in therapy. A Harvard doctor comes along and does what I'm getting used to Harvard doctors doing, which is push is a bad idea and it gets accepted.

And now they're starving all these patients, and you end up with these photographs of these kids who, suffer from this disorder, type one diabetes, that makes them ravenously hungry.

And then they're treated by being starved. So it's a little bit crazy. And they're emaciated. They look like they, you know, the concentration camp victims from World War two.

And then insulin is discovered in 1921. It's a hormone, insulin, and it's a miracle drug. But I one piece for the Atlantic earlier this year that how this affects how I see the drugs like will go by and, you know semaglutide which are obesity drugs and also can be wonder drugs for the people who suffer with these disorders.

So as soon as insulin comes in, you could give it to these kids. The emaciated kids who are days away from dying are already in diabetic comas and revive them.

And within days, they're putting weight back on. And within weeks they're running around the wards, and within months they've gone back home. And as long as they take their insulin, they're living.

Apparently perfectly normal lives. And the problem is one of the side effects of insulin is low blood sugar is almost impossible to figure out how to dose this drug.

Everybody was different. And you can be different at different times of the day and different days of the week. And if you exercised, you needed less or more insulin than if you didn't.

And if you got a cold, you needed to move. I mean, this was an incredibly dangerous drug. That was a wonder drug. And it turned out that the easiest thing to do was if you wanted to prevent low blood sugar.

So you told these kids to eat carbs so they these are kids who didn't eat carbs and adults who didn't need carbs to stay alive. And now you're telling them to eat carbs to avoid the possible fatal side effect of the cure, which is.

And so on. And as time went on to the 20s, doctors said, look, you know, these kids don't want to be on diets. And when these kids have been diagnosed with this awful disease, you don't want them to go their whole lives not getting ice cream at their birthdays or cake.

So let's just give them more and more and so on and, and let them eat what they want. And in fact, this is known as a liberal carbohydrate diet. And it got ever more liberal.

And it started with kids and then it moved to adults. And by the late 1930s, this is sort of now the standard of care. You might tell them to carefully, consume the same amount of carbs every day to make it easier to dose their insulin to the carbs.

But they're also eating carbs to make the insulin doses safe. Yeah, and they get to eat like their family, so nobody has to go on a diet. And by the mid 1930s, it's clear that there is a new epidemic going on.

And these all these kids, you might have been there at age 12, you've now kept alive for 10 or 15 years, are manifesting all the classic complications of diabetes, heart disease, kidney failure, neuropathies, nerve failure and amputations.

They're going blind. And many of these patients, it's happening very quickly. They go from being apparently healthy to dead within 18 months. And the medical community is mystified.

They assume it's because of poorly controlled blood sugar, because that seems natural. And the older patients are also manifesting these same chronic conditions.

It's just happening slower with them. But they're all getting insulin. And what they don't even think about is it's they don't actually know what the blood sugar is doing alone, because they didn't have people staying alive without using insulin to control the blood sugar.

All they know is that the combination of the insulin doses, which are very high compared to what you're paying for, is secretes naturally and the high blood sugar, because you're still doing a lousy job of controlling blood sugar, might be causing these chronic conditions.

And they struggled with these chronic complications. We still struggle with these complications today, 80 years later, 90 years later. The side effects of complications, consequences of living with diabetes are can be awful most of the year.

You know, as an astrologer, the dialysis, the kidney failure, most of the amputations in America, amputations are from neuropathies and poorly controlled diabetes.

And along the way, they never said to themselves. And they meaning the medical community at large never said, well, wait a minute. You know, we never, never tested this alternative approach.

There were actually physicians writing about this in the 1920s. Just don't feed these people carbs. Yeah. And I think there's yeah, back then it was also confusing because there's the type ones and the type tools, which are really two completely different diseases.

Right? Yes. They both have high blood glucose. But, you know, so they're like past diabetes. But that's sort of like saying, oh, you have a fever. Well it could be from, you know, Covid, it could be from the bacterial abscess.

It could be from 10,000 things. Right. Lupus whatever. And saying, oh, it's the same disease. We should all treat them the same. It's like, so this. Is, it's.

It's it's just so stupid sometimes. I mean, it's when you look at the history, I began reporting this book to. It is not that, you know, it's not a diet book.

It's not an easy read. But the reporting was. And writing was fascinating. The, they couldn't measure we couldn't measure hormone levels in the blood.

Okay. So the assumption was if you have, what they call an endocrine disorder, endocrine is a fancy word for hormone, you know, some kind of glandular disorder.

We assume the problem is with the clients. So there's something wrong, and they would identify, you know, you

had hypothyroid conditions, too much thyroid being secreted, and you had hypothyroid, too little thyroid, but you couldn't actually measure the level of thyroid hormones.

You just knew that you saw these symptoms, for one, and the symptoms for the other. And the hypothyroid, too little could be treated by giving the person thyroid.

So the assumption with insulin was it was all insulin deficiency because we could treat it by giving them insulin. And there was some talk of insulin resistance because these older, heavier patients with diabetes needed massive amounts of insulin to lower their blood sugar.

But nobody really knew what that meant. And until 1960, is there a technology, a test and assay that allows you to measure hormone levels in the blood?

So the very first paper by this team, Yellow and Burson, very first paper, they talked about insulin resistance because patients with type two diabetes or overweight, older patients with diabetes and obese patients have high levels of insulin and high levels of blood sugar.

So if they're not insulin deficient, they actually have too much insulin. And as you said when talking about hormonal disorders in every other field, I'm reading textbooks from German textbooks, which I get translate ChatGPT or translate for me.

I'm reading them from the 1920s and it's, you know, you've got, like I said, hypothyroid and hypothyroid, you've got hyper pituitary diseases and hypo pituitary.

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They hadn't discovered growth hormone, but then you've got hypo genitalia and you did too much sex hormones, created this disease too little, created that disease.

But if you didn't actually see the symptoms, you just assume the symptom was high blood sugar. Then nobody ever questioned why is there one disorder? Not until the 1960s.

Do you learn type two is too much insulin. Type one is not enough. Type two is insulin resistance type. But what's interesting about that is that that whole idea, like you're saying that these sort of when you see everything through a belief system, right?

So even through now, you hear this now, which is, I find stunning type two diabetes where you can measure insulin levels, you know, they're too high. Everybody knows they're too high.

But it gets called in the medical literature as relative deficiency. It's like what they. Stop doing its job right. It's not doing its job. So it's too low actually.

You know, it's too high. Oh yeah. And that justifies right. The that justifies them. More and so on. Yeah. Exactly. Which I think. Yeah. And then you. Know.

You do clinical trials and to the diabetes communities benefit. They actually do these trials because in obesity research they won't do what they're they know it's all about calories.

So they're not going to test it. But the diabetes researchers have done clinical trials clinical testing their fundamental beliefs. And they've refuted almost all of them.

And now where they lose credit is they don't say the I mean, one of my favorite quotes was from a guy at Harvard who, in the New York Times in 2013 is quoted saying, you know, they do this huge study because fundamental belief in diabetes, if you could reduce weight, type two diabetics, you will have less what are called macro vascular complications, heart disease, stroke.

And a huge study called look ahead, $200 million. Get these people to lose weight. They get them to lose weight. There's no difference in heart disease completely demolishes a fundamental belief system in the field.

But gone back 100 years is the professor at Harvard very well-respected diabetes ologist, is quoted in the New York Times saying, we have to have an adult conversation about this, and they never do because it's what do you do? Like I said, nobody wants to accept the fact that they're wrong about these things.

But then when you're demonstrated that you're wrong, what do you do about that, particularly if you're a clinician, you know, a medical doctor. If you're a scientist, you can say, well, let's do some more tests, and then you're accused of being in it for the money because let's do some more tests means give me more funding and I'll do my studies.

But what do you do with that? And what they do with it is they just kind of ignore it. They just they write some commentaries and some some opinion pieces and they move on and go back to doing what they've always done.

And if they wait long enough, you'll get a better drug, which is what's happened. Yeah, I think that happened too. And I'm going to have to wrap this up.

But yeah. Also in 2009 when they acquired the advanced study. So this idea that everything bad was due to the high blood sugar. So therefore do whatever you have to do, get that blood sugar down.

You're going to do better. Intensive insulin therapy. Give them more insulin do better. In fact, they did worse. And then there wasn't one study. It was multiple studies showed this.

So that I remember being, you know, you know, I was in practice by that time. And I think this changed. I was reading these paper. I like this changes everything, like everything about treating diabetes, because that's a huge disease for me as an for ages.

And what changed in the treatment of diabetes? Nothing. They didn't recommend any changes. I was like, oh my God, like what is happening here? And this is an obvious issue. It's just like there are two levers you can use to manipulate blood sugar.

You can use diet, or you can use drugs. Two major levers, minor levers like exercise and sleep. But those are the major levels. And so we've demonstrated that drugs don't help a natural question to ask because, well, what if we pull the other level?

What if we use diet to lower blood sugar because we know we did that for 123 years before insulin was discovered? It seemed to work. It's just a natural question to ask.

But these people, they may. They also have, when you. Do hold an incorrect belief system and it's constantly being challenged by evidence, you developed sort of a defense, immune system to defend yourself against these these infectious nuggets of evidence.

And so you develop all these ways to think about the problem that convince you you're still right, even as the evidence is saying you're wrong. So one of these belief systems is nobody follows a diet.

So why would why would we do that? Why would we tell people to eat this way when we know they're not going to follow it? And then you can have a conversation when I've had a conversation like that, how do you know people are not going to follow it?

And it's, well, it's because it's it's who wants to eat like that, nice and warm. And yeah, I'm going to acknowledge to you that that I do because I find that I can sustain a 30 pound weight loss.

You know what I mean? I seem to be very healthy for the guy who's getting on in years, and I want to stay healthy and they'll say, oh, you're one of those keto people, and now they can dismiss you because of the it's just a and

again, you can't blame them.

The people like you who actually allow the evidence to change your mind are few and far between. Yeah. And you. Know. You need not only, personal experience.

Ideally it's personal experience. A lot of the people who think like we do now do it because they said, okay, who knows, maybe it's fun. Character knows what he's talking about.

Let me try something within fasting and then give up carbs and see what happens. And they get healthier. And then it's like, oh well that was interesting.

Yeah. Now I care or they're they try it on their patients and their patients get healthier. But if you're like, if I'm talking to a lean marathon running physician, it's like I'm never going to get through it.

Yeah. It's it's it's a like a wall. You know, they just can't break through that wall. I think the and the academics are even harder because they've got this, you know, they've got this idea that they're the smartest people in that subject in the room.

And they've got all this feedback right. They've moved up in their careers officers. They've got accolades. It's like, who wouldn't, you know, from the human center running out of time.

We should tie this back right? Yeah. So let's just, I think we're just over, actually. But let's let's just tie this back quickly to the longevity story and then and then wrap it up from there.

All right. So long. Every. You want to prevent the late chronic diseases. That's part of as long as you can if not indefinitely. This alternative hypothesis, these chronic diseases are triggered.

And in fact that predisposition it's a genome. Yeah. The genes triggered by the environment. The environment is changed. We've added sugar and refined grains.

And it's like I said, if you believe the seed oil hypothesis sugar, refined process grains, seed oils, we know from now several hundred clinical trials that if you move the car, if you tell people don't eat the sugars and the grains and the starches, don't drink caloric beverages for the most part, which are inevitably sugar, you know, beer.

They don't get healthier. We see that happening with people, and you can't. I mean, I don't believe you can. I can promise these people will live longer.

Again. That was the scary thing about the diabetes, experience with type one and insulin is, you know, you clearly wonder drug comes in and saves these kids lives.

And then 15 years later, you know, all hell breaks loose. You never know. But you can make a very good argument that if you want to, the first step to maximizing your longevity is removing these foods from your diet.

I completely agree, because if you think about, you know, the two main causes of death, like by far and away in the United States, cardiovascular disease and cancer, both huge, very, very powerful links to both obesity and diabetes.

Diabetes much more strongly because of course, that's a much more serious, health condition. But, you see, like there's tons of, data showing that there's obesity.

Associate cancers, including extremely important ones such as breast cancer, colorectal cancer, pancreatic cancer. So very, very strong, link between obesity and cancer, a very, very strong link between diabetes and cardiovascular disease.

So clearly it and so those are the two sort of dominant diseases of our day. Right. You know, a hundred years ago

we'd be talking about, I don't know, TV or something like that.

Right. But you know, of, of this modern era, those are the things we have to focus on. And, you know, I, I thank you for sort of bringing your hard science, hard nosed approach to a lot of these fields because it's opened the lot of, people's eyes, including mine.

And, you know, I think that's, you know, thank you so much for being here. And thanks for having such a great conversation about this. I really enjoyed. Again. Thank you. Jason.

All right. That's that's good I think where we're at. Thanks so much, Gary. I know we went a bit over Renee, but hopefully that's okay. It was I was here in the background the entire time.

And as a first row seat viewer I can say it was incredible. And I wish you guys could have gone for another hour. It was wonderful. So thank you both for your time.

Gary, I'm probably going to ping you maybe in like a month or so, just to let I know you're you're pretty active on old OG Twitter. To just let people know that your interview with Doctor Fung is going to be coming out, and otherwise you guys are all set.

So and nominal. Okay. Thanks so much. All right. Thanks, John. It was fun. Thank you. Hopefully I'll see you soon. Yeah. And would be nice okay. Yeah.

All right. Bye bye guys.