



**EPISODE 850**

# **The Truth About Gut Health, Weight Loss, & Longevity**

**With Guest Dr. Tim Spector**

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**SHAWN STEVENSON:** Are you ready to have your mind blown? On today's episode, we're digging into how our microbiome impacts weight loss and weight gain. We're also looking at how our microbiome has a huge influence potentially on how long we're going to live. You're going to hear some fascinating facts about a certain type of bacteria that loves to drink coffee. Also how our environment impacts our microbiome, the people we're around. Do we have pets? All of these factors and so much more impacting the health of our microbiome, which is having a huge impact on all manner of our health outcomes. And our special guest is one of my favorite people to talk to.

Not only is he a brilliant geneticist, epidemiologist, physician, and expert on the microbiome, but he's got one of the coolest voices. All right, being somebody that's from the UK, you know, there's just this, this extra level of sophistication in the voice, but our guest today's name is Dr. Tim Spector. And even Spector, that's a James Bond movie. Coincidence? I think not. All right. If there's an opening for the new James Bond, my vote is for Dr. Tim Spector. All right. Well, one of the things that we talked about, of course, is just how much our food. Food can dramatically change the makeup of our microbiome. And in Dr. Tim Spector's perspective, food is the most impactful thing on our microbiome.

And so this process, this interaction with our food and this process of eating is such an important thing when it comes to our health and our health outcomes. And cooking and food culture is a big part of our culture and our lives. And for many of us, being in the kitchen and cooking is something that we do on a daily basis or at least several times a week. But little did we know, for decades, that our citizens, our world's citizens, were being effectively poisoned by non-stick Teflon cookware. And now the fallout is still being accounted for, but only recently did the company DuPont take Teflon out of their products and replaced it with a compound, of course, has been found to be essentially just as toxic that was Gen X.

But most people are still not aware of all the published data affirming how dangerous and deadly Teflon was one of the most notorious compounds used to make. Teflon is a chemical called perfluorooctanoic acid or PFOA, and it's been found repeatedly in peer review studies to contribute to higher rates of infertility, liver disease, and a variety of cancers. For example, a study published in the Journal of the National Cancer Institute concluded that PFOA is a strong kidney carcinogen with the risk increasing in tandem with levels of exposure. And they only again recently removed this chemical after decades of harming people's health only to replace it with chemicals like Gen X that have been found to be similarly toxic.

What do we do about this? We say no. I don't accept this. I'm done. And we go for real, safe, beautiful, nonstick cookware. And this is actually one of my favorite gifts to give, especially during this time of the year when gift giving is on a lot of people's minds. And one of my favorite gifts to give is the cookware from Our Place. It's non toxic, pFAS free. Ceramic coated cookware with over 75, 000 five star reviews on their award winning cookware, pressure cookers, air fryers and more. And definitely check out their titanium nonstick cookware too. Now this might be my favorite Christmas gift this year because I'm taking advantage of their 35 percent off site wide holiday sale available right now. Just head to [fromourplace.com/model](https://fromourplace.com/model) to take advantage of this right now. And you can see why more than a million people have made the switch to our place. And with their 100 day risk free trial, free shipping and free returns, you can give this gift to yourself and to others with total confidence.

Take advantage of their 35 percent off holiday sale right now at [fromourplace.com/model](https://fromourplace.com/model). That's F R O M O U R P L A C E.com/M O D E L. Head over there, take advantage of this right now, especially if you're listening to this around the time that this is published. This sale's going on up through the beginning of January, but this is a great gift to give. And if you happen to be listening to this in the future, and I love to say this, thousands of people go back and listen to the very first episodes of the model health show every single month. And so if you're listening to this in the future, you can still go to [fromourplace.com/model](https://fromourplace.com/model). And they're always going to have a great hookup for you and use the code model at checkout, of course, but right now, 35 percent off sitewide. So definitely take advantage. And now let's check out the Apple podcast review of the week.

**ITUNES REVIEW:** Another five star review titled "Authentic" by JJDub1111. One of my most favorite podcasts. Shawn, your voice is calming and soothing. I'm stoked you did a feature podcast on Teflon and DuPont. Let me know if you and your family ever trip out to Joshua Tree.

**SHAWN STEVENSON:** Amazing J. J. Dubb, thank you so much for leaving that review over on Apple Podcast. I truly do appreciate that. And if you've yet to do so, pop over to Apple Podcast, leave a review and a rating for the Model Health Show. Truly do appreciate that. And now let's get to our special guest and topic of the day.

Tim Spector, M. D. is a professor of epidemiology at King's College, London. He's a best selling author of The Diet Myth, Spoon Fed, and Food for Life. And he's also the scientific co founder of ZOE, the science and nutrition company. With a focus on cutting edge science, Tim stands at the forefront in his field. He's considered to be the original pioneer of microbiome research, and he's among the top 100 most cited scientists in the world. Let's dive into this

conversation with the one and only Dr. Tim Spector. All right. This is a true pleasure to have you back here in the studio. Good to see you again.

**DR. TIM SPECTOR:** Great to be back, Shawn.

**SHAWN STEVENSON:** I'd love to start off by talking about how our gut microbiome impacts weight loss and weight gain. This is one of those subjects that I call it an epicaloric controller. Right. It's kind of above this calories in calories out paradigm our gut can impact our metabolism, and specifically, our weight gain and weight loss. Let's talk about that a little bit.

**DR. TIM SPECTOR:** Okay. Well, the truth is we don't have all the answers. And this research has been going on in this area for about 10 years now. And it started with what seemed to be very clear cut results that you could manipulate the gut microbes, find the gut microbes that you don't find in, that are rare in obese people and plentiful in skinny people. And you take those microbes, and there are a couple of them, one Christensenella, another one, Oselaspira, and then you transplant them into mice. And if they've got those preventive microbes, it stops them gaining weight when you overfeed them.

And that was an experiment that we did with a group in Cornell over 10 years ago. And so at that time, everyone thought this is really exciting. You know, all you need to do is sprinkle a couple of these microbes on top of your cornflakes in the morning, and you're not going to gain weight. But as usual in science, it turns out to be a bit more complicated than that. And several companies have gone bust trying to come up with a magic sprinkle that they could incorporate into food, thinking there were at least one or two microbes on their own that would do the job. And I think what we're finding out is that, you can have these experimental situations where you can show that definitely microbes influence, weight gain or weight loss. But it's very hard to then take that theoretical sort of model and put it into the average human and know exactly what you need to do for that human to change things.

So I think some of that hype 10 years ago about gut microbes being the sort of panacea for weight loss and having these massive effects and all we need to do was get the magic sprinkle right or get a poop transplant from someone skinny and our life would be transformed have actually not padded out. And lots of people have tried. So I think, so this is why I'm giving you a longer answer that it seemed like it was going to be dead easy 10 years ago and it turned out not to be the case. And so it is much more complicated and we're finding out there's many more microbes that are involved in this whole process than just one or two. And we also know that all of us have a unique set of gut microbes so that if I added a couple of skinny microbes to your gut health from mine, they might not work.

Because your community is going to be different to mine. So I think the whole thing has got much more complicated. We realize there is some control mechanism but perhaps it's not as clear cut, not as black and white, not, you know, you can make someone obese, you can make them lose weight instantly just by transferring a few of these microbes around. And I think this has been borne out, there've been, I think at least 10 studies now of transplanting microbes from one human to another in people with diabetes or Obesity. And the effects are pretty minimal because that was, there were people going to private clinics trying to get their sort of gut makeover and they've generally failed to impress.

You can't really reverse diabetes this way and you're getting any minor changes in body weight. Although some suggest that the internal body fat might be the thing that's changing more than the total fat. So this is the visceral fat that's around your organs, your liver, your stomach, etc. So that's a very broad view of where we are and we're still trying to understand the various mechanisms by which this occurs. We do know that, for example, that some microbes, I mean, microbes in general are chemical factories. So they, you've got to start thinking of if, when you think about how do they work, you're trying to think, well, what sort of chemicals would they be producing to have these effects? And we do know that some microbes, for example, can produce GLP 1 like drugs.

These are the drugs implicated in Zempik and Wegovy, et cetera. Therefore people have been developing probiotics that have these slight GLP1 like effects. And up to now, yes, they've shown that they have these effects. They haven't shown that they're big enough to make a big difference, but again, it's showing the potential of the gut microbiome to do all kinds of things by manipulating the chemicals in your body, which then would affect your metabolism in beneficial ways. So I think the general feeling is that the gut microbiome as a whole, if it's healthy, it's going to be sending out the right chemical signals to balance your metabolism and make it harder to gain weight. But at the same time, we don't yet know enough to sort of have a magic bullet treatment that's going to suddenly say, okay, I can give you this fantastic probiotic or prebiotic or transplant that's going to suddenly make you lose 20 pounds.

I think that's the key difference here. But it is interesting how many of these gut micro centered products do have effects on appetite. And I think this is what we learned from the GLP one drugs, the Wegovy's et cetera is how important for weight loss, these brain signals are rather than general metabolic rate, etc. So that's something that came out of genetics as well, I was studying genetics of obesity for about 15 years, and kept looking for these metabolic genes. But actually the ones that kept coming out from the gene discovery was always brain genes, brain chemical genes. And I think what we've discovered a bit by chance through the discovery of these diabetes drugs that also cause weight loss is that the main effect is on the brain, not on, you know, some key form of metabolism.

And so it is interesting that products, and we've been developing a product at ZOE, which is a prebiotic, freeze dried 32 plants. And which contains a decent amount of fiber in every scoop, five grams of scoop. We did a randomized controlled trial over 12 weeks and it, as well as causing some minor weight loss, had quite big effects on hunger. So it, people felt fuller for longer. And I don't think it's just the bulking effect of the fiber. I think it's actually, it's changing the composition of the gut microbes, improving microbiome health, and then those microbes and then secreting chemicals that are maybe just, you know, telling the brain it's fine, you know. No, there's no great urge to eat at the moment, you know, you can relax. But it's quite subtle. And I think this is what we're learning out is we mustn't keep looking for the magic bullet. It's a series of small changes that get you to these places and it, you know. These are things have to be done daily rather than, you know, one shot wonders.

**SHAWN STEVENSON:** And don't we love those? We love magic bullets. We love smoking guns, the one shot wonder. And I love this already because you started off by sharing the truth, you know, because we were looking for the "fat bacteria" and the skinny bacteria. And if we just target these and previous to that as you mentioned, it was looking for the fat gene. If we could just find this fat gene turn it off get rid of it. And what about the skinny genes, right? And I'm not talking about the ones that people wear. But like the genes that make up who we are and have all of this data basically. And that's the key is that there's such a diversity of data and how it all interacts is going to be unique to me, unique to you, all the environmental inputs. And so yes, these bacteria absolutely have an impact on our metabolism, but there are all these other factors.

So we've got all these strong associations and one of them, this was a really fascinating study and it was published in the International Journal of Obesity. And they were looking at having participants on a similar diet, Calorie restricted diet, but looking at the diversity of their gut microbiome. And they found that independent of calorie intake, people who had more diversity in their gut microbiome lost more weight and had more healthy, as they called it, you know, metabolic factors that lean towards health. And also this was the key efficiency in processing their food, right. So this isn't saying there's this one smoking gun or magic bullet bacteria. The key word was diversity. So can you talk a little bit more about that? You mentioned, you know, having all that diversity of plant inputs in the ZOE product, for example, but is it a diversity of food inputs? Is that the best way to improve the diversity of our gut microbiome?

**DR. TIM SPECTOR:** At the moment, we think it probably is that the more diverse a range of plants you're eating on a regular basis. The more diverse the species in your gut, and probably more importantly, the better the ratio of good bacteria to bad bacteria. At the moment, we're all talking about diversity because that's still the gold standard of scoring for gut health. And that's been around, you know, 20 years and everyone uses it. You know,

what's the diversity score? Has it changed? You know, how many species do you have? But many people have been a bit upset about that.

I got some vegan friends and they say, well, my diversity is not that good, but I have a perfect diet. What's going on? You know, and others who are really not that healthy are getting quite high diversity scores. So, because within the number of species, you can have good and bad ones. So actually it can look good, but actually you've got a lot of pro inflammatory microbes in there that are bringing down your health scores, but it's looking good on the diversity. So that's why we recently and we've got a paper up soon to be accepted it should be out, hopefully by the time this podcast airs, on a new way of scoring which is looking at 50 good and 50 bad microbes in everybody, and looking at that ratio and that Performs better than diversity. Across the board, whether you're vegetarian, you're vegan, you're omnivore, carnivore, whatever, we get very consistent results.

And we did this in, I think, over 50, 000 people now in the U. S. and, U. K. So we've now got a new measure of what it means to have a healthy gut. And hopefully this concept will catch on that it is correlated with diversity. But it's more important to have as many of the good guys and as few of the bad guys as possible. Because they're sort of competing with each other. And if you just took diversity, you'd miss that, that subtle nuance. And I think you're right, to get a good and bad ratio and lots of species. The best way to do that is to eat a variety of plants during the week because microbes are really fussy. And we now are beginning to understand just how fussy they are, if you want to really bring to life all the microbes in your gut.

And I can give you an example of, we published this couple of months ago, there's a microbe called Lawsonobacter, named after Dr. Lawson. And this microbe only drinks coffee, okay. So it hangs around all of us because you know in the u. s. Everyone's drinking coffee. Even if you don't drink coffee I'm not sure you drink coffee. Do you but you're surrounded by coffee drinkers, right? We're breathing fumes and there's coffee molecules all over the place. You go past a starbucks or wherever, you know, you can't get away from it. So you've got little. So resting spores of lack Lawson, a bacteria in your gut not doing anything. They're just hanging around waiting for you by chance or not to drink some coffee. And if when you do drink it, they will increase tenfold in amount and that's what we see. You know in the average American gut we can see Who's a coffee drinker and who isn't? But you can't tempt it with green tea or anything else, right?

It's just not going to grow. So that was the strongest correlation we saw in the Zoe database. And it just brings home just how niche some of these things are, right? That, and why you need to be eating this magical 30 or more plants a week to give yourself that diversity and richness in your gut microbiome, including more good guys than bad guys, so that that rich

diversity gives you that rich diversity of chemicals. Because all of them, just like, you know, this Lawson Abacter, once it's, you know, it'll produce certain chemicals, breaking down the coffee. Getting the chlorogenic acid off there and doing all kinds of weird stuff and possibly contributing to why coffee is good for your heart through these mechanisms.

But if you just try and imagine, you know, thousands of examples of this, this microbe doing different things, waiting for you to have, I don't know, some pawpaw or some mangoes or some monk fruit or things that you don't normally have. And it's like, Oh, ha, I'm going to wake up now. And, you know, when, when's Shawn going to eat some seaweed? You know, I'm really desperate for some seaweed. So this is how we're, we're seeing the way to really develop your gut microbiome is to give it the full range of fertilizers, these prebiotics. And once you do that, then you're going to have this real, really important armory that's going to protect your body against weight gain. And as you said, get these efficiencies in the system so that it's, it can deal with anything, you know? And it can deal with you, you know, having a night out, drinking too much, having some burgers. Much better than someone who hasn't got that baseline. And, it'll still be okay the next day, as long as you don't keep doing it. It'll be fine.

And so that each month we're learning something new about the microbiome, which slightly changes our view of the science and what's important and what isn't. And again to your idea, yeah, it's moving away from the magic bullet to this much more holistic view of how we need to treat our guts and, you know. Just realize each micro, you know, each microbe is sacred, you know, I mean I wasn't at the Monty Python. So each sperm is sacred, but you can cut that bit. You know, there was, I think that that's really cool when you, when you, and we're just tip of the iceberg now, now we're, we've got over 200, 000 samples. We can start to drill down into all these foods and work out for each type of seed or nut, which microbes is that feeding.

And then start to personalize what ones you need to add to your diet to boost those guys. So I think we're, we're really a new phase. So the stuff I was doing 10 years ago with these fat and skinny microbes was showing the principles. But it turns out that when each year we sequencing these gut microbes, we find even more of those guys that were top of my list back then, 10 years ago. You know, they barely make the top 50 now, so there's lots of other ones that are more important for our regulating fat and metabolism, but we don't even have a name for them yet.

**SHAWN STEVENSON:** Yeah.

**DR. TIM SPECTOR:** We don't know how to grow them. I don't think we can. We can see their genes, but we're still a way off yet making that into a magic bullet.



**SHAWN STEVENSON:** This is so fascinating. We've got bacteria that love to drink coffee. That's what they do. They just sit around and sip coffee. And now my question is, you know, you mentioned that the ratio can be exceedingly higher in certain people who are regularly consuming coffee. And so I'm curious if folks, for example, that don't necessarily drink coffee, but you mentioned it being in the environment, right? So maybe you don't drink coffee, but your partner does, and you're lip locking with them a lot, you know, you're around them. Is there going to be an exchange of certain microbes that are above the control of just what you're eating?

**DR. TIM SPECTOR:** Absolutely, yes. So this is what this study of the coffee microbe has shown us is that countries that don't have any coffee, traditionally there's no culture of coffee drinking. Someplace in Africa we looked at, there's none of these microbes in anyone. And other places like, you know, Europe or the US, where maybe half the population drink coffee regularly, you see it in everyone, you know, after they've been born. They're not born with it, infants don't have it, but by about three years old, they've started to acquire it just by, you know, being around parents who drink coffee. And this is really interesting because it really tells us how other microbes are being passed around and explains why when you do studies of sharing households, you see greater sharing of microbial strains. And we did a big study on this, with my great colleague Nicola Segata in Italy, looking at all kinds of nuclear families, cohabiting boyfriends, girlfriends. We had twins living together for a certain point of time.

And all of them showed that the closer the family were living, the more they shared certain strains of their microbes. And so clearly there's a lot of crosstalk going on, even if you're not drinking or eating exactly the same food. So the moral of the story is, you know, if you pick a really healthy partner, some of that's going to rub off onto you. And if you pick a really unhealthy partner, some of that's going to rub off onto you. So, you know, pick your family and partners well, because those microbes are going to be migrating.

**SHAWN STEVENSON:** Wow. There's some invisible change taking place.

**DR. TIM SPECTOR:** Exactly. A lot of it is, yeah, we can't see these microbes and they are all around us. And, you can acquire these good ones. I mean, most of the studies show it's slightly easier to acquire good ones than bad ones, which is sort of good news. But it sort of means if you're cohabiting with some fit, healthy, you know, skinny person, then actually that's a beneficial thing for you. And that's kind of cool. And we did see these trends of twins living together. And then we looked at them, you know, 5, 10, 20 years later. And they do lose some of it as you, as you stop living together. But yeah, so, we do share microbes, and there's some evidence we share it with our dogs as well. But also, yeah, probably more so with our partners.

**SHAWN STEVENSON:** Yeah, I was going to ask you about that, about pets. You know some data with people that have pets that have more diversity and things like that with their microbes.

**DR. TIM SPECTOR:** Yeah, this the data's still not brilliant, but there've been a few studies suggesting that having a dog in the house gives you extra microbes and you do share them with the dog whereas you don't seem to share them much with a cat. Maybe the cat.

**SHAWN STEVENSON:** Typical of cats.

**DR. TIM SPECTOR:** They're fussier I guess and so.

**SHAWN STEVENSON:** Very cat-like behavior.

**DR. TIM SPECTOR:** But dogs definitely and there are, and there are again, in medicine, some associations between, pet ownership and various diseases and things. So I mean, having a pet is somehow a protection against depression, but can predispose you to some interesting disease that might be viral, like Paget's disease and things like this. So, we've never thought before this might be microbial, but, yeah, we just need to keep our, you know, an open mind on these issues. But, yeah, certainly who you cohabit with, really important. Pick the right partners. And it's another reason to get your, if your partner isn't healthy, it's in your interest to get them healthier as well. Yeah. Certainly on a ..

**SHAWN STEVENSON:** Get out of here with your bad bacteria.

**DR. TIM SPECTOR:** Yeah. We'll certainly get them on a better diet. You know.

**SHAWN STEVENSON:** I'm just saying not to kick them out because of that.

**DR. TIM SPECTOR:** No, no, no. We're not going to kick anyone out on the street. But, I think that attitude said, well, listen, I'll do my thing. You do your thing. Well, actually, they, you know, they might be a bit like passive smoking.

**SHAWN STEVENSON:** Yeah. Secondhand.

**DR. TIM SPECTOR:** Which people didn't used to worry about until the science started saying, well, actually, you know, that does, that can affect your partner. This could be a thing that sort of passive microbial transmission.

**SHAWN STEVENSON:** Yeah. Our partner, our kids.

**DR. TIM SPECTOR:** You heard it here first.

**SHAWN STEVENSON:** That's what it's all about. That's what we do. Got a quick break coming up. We'll be right back.

If there was one beverage that is most correlated with reducing stress, it's tea. Now, the only tea that I knew about growing up was sweet tea. All right. My grandmother would make sweet tea or I'd go to, you know, different restaurants that ordered the sweet tea. Matter of fact, when Lipton brisk hit the scene, right? So this is sweet tea that was in bottles that you could buy from the vending machine. It was so full of sugar that it had this frosted appearance. It was like frosted tea. All right. So I'm not talking about that abomination of tea. I'm talking about the storied traditional teas that have been utilized for thousands of years to support human health. Now, one of the most well known and well researched teas that help to manage and reduce stress is green tea.

Green tea contains a unique amino acid called L theanine. This is one of the rare nutrients that's able to cross the blood brain barrier with relative ease. And impact the activity of a neurotransmitter called GABA, which helps to reduce anxiety and makes us to feel more centered and relaxed. Now, some teas like green tea might have a small amount of caffeine. But because of L theanine, not only does it not have that stimulating effect, it actually helps to reduce and calm the nervous system. A peer reviewed study published in the journal Brain Topography found that L theanine intake increases the frequency of our alpha brainwaves, indicating reduced stress, enhanced focus, and even increases creativity.

Now, this is the most important distinction about this conversation when talking about green tea. Not all green tea is created equal, not in the slightest. Quality matters immensely here more than ever because not a lot of folks realize that even some organic teas are contaminated with heavy metals and microplastics. We want to make sure that we're getting teas from the best source possible. And the green tea that I drink is a matcha green tea. That's actually shaded 35 percent longer for extra L theanine. It's the first quadruple toxin screened matcha. And there's no preservatives, sugar, artificial flavors, none of that stuff.

Just the highest quality matcha green tea in the world from Pique Life. Go to [piquelife.com/model](https://piquelife.com/model). That's [PIQUELIFE.com/model](https://PIQUELIFE.com/model). And you're going to get access to some of their incredible bonuses for the different bundles like free shipping and also an exclusive 90 day risk free guarantee. If you don't love their matcha green tea or any of the products from Pique Life, you can send them back for a full refund. All right. So they're really

standing behind their tea quality. They go above and beyond and highly recommend checking them out. It's [piquelife.com/model](http://piquelife.com/model). That's [PIQUELIFE.com/model](http://PIQUELIFE.com/model). And now back to the show.

**SHAWN STEVENSON:** What's great you brought up coffee drinking and the association with our gut bacteria, because we're sitting here sipping on, because I've got my friend from the UK, I decided to have some too, which I rarely do during the show, but we're going to sipping on some.

**DR. TIM SPECTOR:** The Earl's tea as well. Yeah.

**SHAWN STEVENSON:** The Earl's tea. So we're sipping on some Earl gray from Pique shout out to Pique Tea. This is a big part of the culture, right? And I'd love to know a little bit about this, because I know that this is something, again, even the association with coffee. What about drinking tea? Like, first of all, because I don't have any experience with the UK culture, why is this such a big part of the culture? And are there any health benefits to drinking tea?

**DR. TIM SPECTOR:** Certainly a big part of British culture because of its colonial period, when it set up importation of Chinese tea. And then when it had a big war with China and supplies got tough, they basically took all the tree plantations and put them in India. And then got the Indians to grow it for the empire. So tea was a huge business.

**SHAWN STEVENSON:** And there were tea, like tea houses in all over Europe.

**DR. TIM SPECTOR:** Yeah. It's interesting. I mean, coffee had always been around and it was quite big in the UK in the 17th century, but tea took over as the main drink consistently until about ten years ago, it was the predominant drink. And then ten years ago coffee had made a fight back and slightly more people now in the UK drink coffee than tea, but it's still pretty neck and neck. And people, just they there's obviously tea has caffeine in it, whether it's black tea or green tea. There's always slightly less caffeine than in coffee, but there's still, you know, a waking up kick to it. But it's a mellower kick, so you don't have that sort of jolt that some people feel in the morning. It's a smoother way into the day. And, it became associated with British culture, you know, and the famous British tea time. You know, with having your cakes and biscuits and, uh, sitting around with fine china and spending, just having a little break in the day and having your tea.

So I was brought up on definite, on tea rather than coffee by my parents, although now I probably drink more coffee than tea. And in terms of health benefits, the studies show that drinking black tea has some mild benefits. It's either neutral or slightly beneficial for the

heart. But green tea is definitely has more benefits, cardiac wise, and potentially anti cancer wise. And the British don't drink that much green tea, and so there's quite a big difference depending on how about the leaf and how young it is and how it's been dried and fermented, et cetera.

And it turns out that the green teas, they have contained more polyphenols. So, you're getting a rich, richer amount of chemicals in that are likely to have beneficial effects on your gut microbes. And it's that that might, having these antioxidant effects on the body, more than the black tea. So, anyone who likes black tea, you know, well means carry on but if you try and do it for your health, then you might start to mix it in with some more green teas because the epidemiology these large scale population studies are really quite consistent that long term green tea drinking really is very beneficial and it's probably from this chemicals in the leaf itself that filter out into the water and then your microbes use those as an energy source which means they're more prolific and they're going to produce more healthy chemicals and help your immune system.

**SHAWN STEVENSON:** You mentioned that keyword polyphenols and we know that's like it's not necessarily something that our human cells are taking up but the bacteria you know our microbes are. And this is such a great bar that you shared. You said a smoother way to start that was like that was sexy as hell. That was amazing. And that's kind of something that I can see.

**DR. TIM SPECTOR:** I should be doing adverts, shouldn't I?

**SHAWN STEVENSON:** Yeah, that's what I, that's what I mean. Smooth the way.

**DR. TIM SPECTOR:** If there's anyone out there, then yeah, I'm available.

**SHAWN STEVENSON:** And it's very congruent with the, you know, the vibe. That I see with you, you know, and they the UK gentleman, you know, so a smoother way to start the day I love that. And, you know, I think that this is another opportunity for us to just understand the power of these inputs because it's not just food It's not just our relationships in our environment, you know, it could be the beverages that we choose to have. And I would imagine we talked about this before we got started on the show these extremes, right? So we've got the people who are very mindful, very demure, and they're drinking their green tea. And then on the other end of this, we've got people who are, you know, knocking down Coca Cola and, you know, Mountain Dew every day. And what are your thoughts on the impact of, like, "soft drinks and soda", beverages, those type of things, and our health, but specifically for our gut microbiome?

**DR. TIM SPECTOR:** I think they're absolutely terrible. Consistently comes out as the worst thing to be eating or drinking in all the epidemiology studies is the use of these sodas. Whether they've got and doesn't matter whether it's high protein, it's got added vitamin C, it's got, you know, whatever it says on it. They've generally either got really high levels of sugar in them or they've got high levels of artificial sweeteners in them. And, in different ways they're both really, really bad for the body. So, all the studies around the world show that people who consume large amounts of these sodas, are gonna get, you know, more heart disease, more diabetes, more obesity, and also interestingly, more mental health problems.

That's a fairly new phenomenon. We've started to look at the effects of these ultra processed beverages on mental health. And yeah, this is absolutely consistent and yet they disguise a lot of them. I mean, I was doing a bit of a sort of podcast tour through some stores around here and you go to a CVS pharmacy, which is supposed to where you look for health and all you see is these cans of sodas and beverages and high protein drinks packed with sugar. And you think it's not surprising the average American's pretty confused when the health stores, you know, a full of the least healthy products.

**SHAWN STEVENSON:** Isn't that ironic?

**DR. TIM SPECTOR:** And just, you know, because they stick to something like protein or proteins good for you, therefore the rest of this is going to be good for me. Oh, it's got vitamin C and vitamin B in it.

**SHAWN STEVENSON:** Or zero calories.

**DR. TIM SPECTOR:** And zero calories. Yeah It's the magic bullet but of course, you know, we know the effects of these sugars have which cause sugar spikes and build up of inflammation and changes in your mood and energy that we weren't evolved to deal with. And we now know that the artificial sweeteners are having perhaps not as bad an effect, but they're still affecting our gut microbes in really disruptive ways that are having some other chemical consequences for our body and changing our perception of food so that we're always seeking to add sugar to it that you're just ramping up the thresholds. And, yeah, this is a shocking thing I see, and it's so hard to get any sort of sodas here that don't, aren't super sweetened. If you're lucky you can get a you can get a nice tea, you know an unsweetened iced tea, but they're quite rare and they're quite unpopular. I've noticed this compared to all the other drinks.

**SHAWN STEVENSON:** Yeah, I did not. I grew up drinking something called sweet tea. Right, it look frosted. There's so much sugar in it. Yeah, so, drinking tea that was not sweetened or like a green tea or something was completely foreign to me

**DR. TIM SPECTOR:** Yeah, and I think it is a big step, because the average American is just, has such a sweet palate. You've got to realize it's going to take time to wean you onto something like green tea and then appreciate the subtleties of flavor, etc.

**SHAWN STEVENSON:** I quite enjoy sitting here and having this Earl Grey tea. You know, this is like very pleasant, you know, and I think again, as we can step away from all the bombardment of these newly invented chemicals, these artificial flavors and sweeteners and high sugar intake and all this stuff, we start to rekindle this relationship with our ability to taste, you know, and that's what I enjoy. Like, I think that my food experiences now are so much, I can't even compare them. I can't even compare how much joy I have in eating versus when I was, you know, waking up and eating Hostess blueberry mini muffins. And, you know, having, uh, Coca Cola and, and I was a big fan of the more fruitier sodas. So like "fruit punch" soda, grape soda, and you know, fast food and all this stuff. Yeah, there was like, there was an attraction there. Almost an addiction. But I wouldn't say that it was like a real joyful food experience. Versus now, you know, that I have a pretty much on a daily basis.

**DR. TIM SPECTOR:** Well, there's a difference between taste and flavor, which a chocolate specialist explained to me that you know, when you have a bar of Hershey's chocolate all you're getting is that massive sugar hit. There's virtually, you know, there's less than 15 percent actual chocolate bean in there. Most of it is sugary milk and sugar. So you get that sugar hit and that's just a taste, you know, you've got these receptors. But if you go for a craft chocolate with 75% Cocoa bean, and you just added a small amount of sugar to it. You can get all the flavors of the bean and the fermentation, and you're getting, you know, like ten different flavors on your palate. You can really appreciate it. But anything that's smothered in sugar, you can't get that next level. So I think this is really important. And, you know, anyone listening who just, ah, I'll never be able to, you know, drop my sugar.

Just, most of us, when we were kids, when we first had tea or coffee, we had four spoons of sugar in it, and you did wean yourself off, most of us, anyway. And so you realize that's quite doable. In the same way, you know, if you want to work up from Hershey's bar of chocolate to, you know, an artisan one. You just do it slowly. You just, you know, 10 percent at a time. You don't have to go cold turkey. Realize that, you know, you, but you can shift your sugar preferences, and I think this is really important.

And this, because this is what all children do. But I think, you know, the food industry treats us all as children and wants us to keep in this baby state, serving us baby food, that's soft and sugary and, you know, reminds us of our childhood and mother's milk and all these things. And we've just got to say, no, I'm going to wean myself off. I'm, you know, I'm, I'm an adult now. I don't need baby food anymore. And I want to appreciate, you know, whatever real flavors.

**SHAWN STEVENSON:** Yeah, and that flavor, that word. And our experience, this has a lot to do with the brain, and you talked about that a little bit earlier, you know, and how so many of these responses are brain related. And the same thing holds true with these artificial sweeteners as well, that isn't being talked about enough, is that we're essentially tricking our brain. We're tricking our brain, because your brain is sensing that this is sweet, but it's hiding, right? It's manipulating and incomes, you know, that taste is associated with certain inputs as well. Certain things are supposed to come along with that. And so you're, you think you're tricking your brain into being like, it's fine. I'm not going to release insulin, but that's not what the data is showing.

**DR. TIM SPECTOR:** No.

**SHAWN STEVENSON:** When we're having artificial sweeteners, we are in fact releasing insulin as well. And we can see the storage of more fat. As well, and they might not be right there in the moment, but your body is now this hormone is circulating and it's looking for its payoff because that's how we evolved, and so we got to keep that in consideration. And this is my question for you. This brings me back to something powerful. You said earlier about GLP one because obviously I was just watching a basketball game, an NBA game with my son last night. I'm not gonna say every commercial break, but almost everyone had a drug commercial and there were so many drug commercials for Wigovi and Ozempic and like it's crazy. They're reading off all these side effects, including death, by the way, you know.

**DR. TIM SPECTOR:** They read them very fast. I don't know.

**SHAWN STEVENSON:** You know, there's people who they're in like a flight simulator where they're simulating Ski skydiving their line dancing. They're having this great time. But then right underneath they're whispering how you know massive diarrhea and you know vomiting and all this stuff and I'm just thinking about what if they have the massive diarrhea while they're in the flight simulator and I looked at my son. He was like the shit's going to go up, but you know, he said the poop's going to go up and it's just like they create this imagery. Meanwhile, there are all these potential downsides that are not really talked about because people are seeing that and they're just like, I want to fly. I want to dance.



I want to feel good. And it's so manipulative. It's just, it's wrong. It's wrong. And here, this is the country that allows this in New Zealand as well, but they have much more tighter regulation. They have carte blanche just to make up all this story, basically this imagery. And meanwhile sell you a drug because they're telling you, instead of your doctor informing you this is gonna be a good fit. Go ask your doctor to treat them like a drug dealer and tell them what you want. And, you know, so with this being said. And not to open a whole can of worms, but a little.

**DR. TIM SPECTOR:** Definitely not a fan.

**SHAWN STEVENSON:** Obviously it has its place and some appropriate uses. But, with you, what you brought up was the fact that our bodies make this. This is something that our bodies do. We make GLP 1 and this has a lot to do with what, with our microbiome and the health of our microbiome. So let's talk a little bit more about this GLP 1 phenomenon and it's just one of many satiety hormones, as a matter of fact.

**DR. TIM SPECTOR:** It is, and I think in the future we're going to see more drugs targeting some of these other hormones, or in combination. You know, there are about 20 of these hormones in the body that can regulate, to different extents, our appetite. And all of them are being examined now, and to see which can be the next blockbuster. But I think a combination of these is likely to work. We're going to see that within five years and it will be even more effective than the current ones which are already pretty effective for weight loss. Let's not pretend. They're not an amazing drug, you know, they are an amazing drug. They're an amazing breakthrough. You know, I was working with 20 years on the genetics of obesity to find something like this. You know the magic bullet drug and it is but it's not for everyone. It has major consequences.

As you said, 15 percent of people, you know, one in six people is going to have really quite bad side effects. And, you know, they get pancreatitis and can go to, end up in the emergency room. So this is not a trivial thing that we, it's not a lifestyle drug, because people can die from it. So you've got to really, really need it, and I've tried other things before, and I think also we need to start thinking, and this is something we've been thinking about with Zoe is, you know, for people who are taking it, because you know, they've changed the whole diet industry overnight. I mean, I don't know if you've noticed, but you know, Weight Watchers doesn't exist anymore. They just sell these drugs, you know, through third parties. They've gone out of business. This, that was, these were billion dollar businesses that suddenly they realized, well, they can't compete. It didn't, calorie counting never worked anyway.

And these guys are just blowing them out of the water. So, you know, let's, let's You can't beat them, join them. So that's what they've done, which I think is really insightful. But I think there is an opportunity for if millions of Americans are taking these drugs, you know, that driving force between people buying junk food, which is this appetite. The little voice in the brain saying feed me, feed me. I'm hungry. Give me sugar. Give me this. If that's taken off then there is an opportunity to improve the health of millions of Americans and, you know, this is what we're thinking about with Zoe is how could we possibly interact?

Getting people to do the, you know, the Zoe program to make them eat better whilst the pressure of, you know, not constantly thinking about food is taken off. And no one's really doing this. And it, you know, that's the bit of the, that's the sort of scandal. So the government's approved all these drugs, but there's nobody saying to them, Well, you know, there is a healthier way to eat. You know, yes, the drug might make you lose weight, might reduce while you're, you know, a lot of your risk factors for disease, but you could do so much more if you're at the same time, you improved what you ate. You didn't lose weight. You shifted away from ultra processed foods to, you know, plant based diets and other things, which is so much easier to do when you've taken that stress out of the brain and you've changed your approach to food.

So I think we're missing a trick here. So I, you know, while I agree with you, these things are risky, they shouldn't be like a lifestyle fun thing for people to do. And, you know, here we are in L. A. near Hollywood and we know of, you know, all these celebs and stars taking it just to look better. But that's not, yeah, I absolutely don't agree with that. But for the people who really do need it, you know, it is game changing. They're reducing their risk of cancer and death and dementia and all kinds of things. But this is suddenly an opportunity that we can start to talk about junk food more and convert them into prone. Because they're spending, you know, tens of thousands of dollars on this.

It's trivial to get diet programs in there to, you know, like the Zoe program that would really transform their lives permanently. So maybe they need a quarter of the dose going forward or whatever it is. We're not doing that at all. It's all or nothing as you see with these ads, you know. It's like. It's just and it goes back to the American dream, you know, everyone wants that magic bullet, that magic pill. I don't need the details. Just give me you know, what's that magic vitamin? What can I do? But we need to educate people that you know life isn't about that. You know, you have to look after everything in your life and it, you know, your diet, your sleep, your exercise are all part of that. You can't just focus on one.

**SHAWN STEVENSON:** Yeah, the jack in the box is out of the box. You know, just as soon as that thing pops out, now it's all, you said something very profound.

You said it earlier, you heard it here first. This is another one that there's going to be more than the, just the GLP targeting medications. And I really see that coming as well because again, there are all these other components. Actually in 2020 I had completed a book called Eat Smarter and, you know, it came out the first week of 2021 is a massive, massive national best selling. Very grateful to say that. But when in the writing of that book, which was about two years of research and writing I put into it I was talking very adamantly about all these different satiety related hormones, you know, like CCK, GLP 1, adiponectin, leptin.

I had no idea that the GLP 1 drugs were in the pipeline. I had no idea, but I was, I just knew that this was something so important in this conversation about health and nutrition that is not getting talked about. Just to give people an insight into what's going on in their body. And there are all these different factors that are working in your favor. If you give your body certain inputs that it expects to keep you feeling good. And, again, unbeknownst to me, these drugs were coming down the pipeline. But in the book I shared all these different foods and the data we have on, hey, this actually has this resonance with certain microbes that kind of tinker up or turn up your body's production of GLP 1. We see more satiety when you eat these foods, whether it's like some blueberries or prebiotic fibers, right? So from..

**DR. TIM SPECTOR:** Yeah, like yeah, the Zoe Daily 30, which we tested and improves your gut microbiome compared to a probiotic much more. So we did this study, and we're doing some other studies to look at the function of those microbes to see if we can show that one of the pathways it acts was by, because we know it, reduces hunger. And GLP 1, we think, you know, by doing genetic analysis, you can look at the function of those microbes that have improved and say, these are the GLP 1 producing guys. Each of them does only a tiny amount, but if you have a lot of them, they can contribute to this. So I think this massive surge in interest in these gut hormones is going to have other effects across science.

But I think we're going to find other ways to do this more naturally. But I think, yeah. So, I'm cautiously optimistic. I think it'll even itself out. People aren't going to want these side effects, which can be very nasty. So, you know, there'll be a number of varieties. People have choice. There'll be a tablet soon, so you won't have to inject yourself. That's already in trials and these combination of so small effects, but with, you know, affecting two of the hormones may have less side effects than these, you know, than the current ones. Or it a whole thing will be personalized, you know, just like with your nutrition that you know, though you do some tests and you'll say which of these six drugs is gonna suit you better.

So in a way, in one hand, it's depressing that the only advert you see when you're watching a, you know, a basketball game are these for these drugs. At the same time, you know, it is offering a temporary solution to a major health crisis in the U. S. And we have to start to work out how do you switch that round so that you can use it for good. Because I think, you know,

there are some people say we should just say it's terrible, right? You should just say don't take it. It's terrible. This isn't the way everyone should just be, you know, vegan and, you know, that's what we should be teaching. That's putting your head in the sand, right? That's not gonna work. So we've got to work with these drugs realize they're gonna be part of our life, you know, for the next 20 years. And see how we can sort of use them for good rather than just for vanity.

**SHAWN STEVENSON:** Yeah. Because everything has a cost, you know, and it's kind of like the paradigm you mentioned with CVS and we can get your prescription here. Meanwhile, you are, you got to walk through a sea of ultra processed foods to get there and to get out of the store. And the same thing with the TV advertisements right after that is a beer commercial and then followed by Taco Bell. You know, they're throwing a little insurance commercial here or there, but you just see this stuff cyclically and before you know it we become numb to it. It's normalized and this is just how it is. And so with this being said there, there's a lot of change taking place right now, simultaneously, like things are on extremes. But then there's also this growing number of people who are becoming much more educated and empowered with their health and making better choices and extending their lifespan and not just that their health span as well.

And if you could, let's talk a little bit about the connection between our microbiome and our longevity. You know our health span because, you know, again this is something that more people are thinking about. And there are places all over the planet still where people are living long healthy lives, you know. But here in the United States right now we're living shorter lifespans. We're sicker. And this recent meta analysis, it was 10 wealthiest countries. Looking at lifespan, and disease outcomes, and how much we're spending on healthcare. The United States spends by far, and this was the Commonwealth Fund, and this was on all the major news sites, by the way. Regardless of the political spectrum, all of them were published in this.

But, we spend by far, right now we're right around 5 trillion this year, and we're projected to hit seven trillion in healthcare expenditure within the next, you know, five years. And we're at the bottom, very, very bottom, far at the bottom, as far as our health outcomes of our citizens. We spend the most by far, but we're the sickest. Something's not adding up. And so looking to, looking inward, right, our gut health, our health, and looking at the association with taking care of our gut and living a longer, healthier life.

**DR. TIM SPECTOR:** Well, certainly I, the reason the U. S. is doing so badly in the charts has got to be due to the, you know, the standard American diet, the SAD diet. And, because you can't really explain it with the other lifestyle factors.

Yeah, it might be slightly less exercise, but you know, the sleep is not quite as good, but the biggest massive factor is the American diet. The fact that over 60 percent of all the calories are ultra processed and over 70 percent in kids, you know, eating fake foods that we hadn't evolved to eat. And I think that is what's driving the obesity problem, driving the mental health problems, the stunting of growth of the kids, so there's been no increase in height, and it's actually dropped. Across many groups in the U. S. Because as the body weight increases too fast, you don't get enough time to grow the skeleton, so it reached puberty earlier. And that's why Americans who used to be the tallest in the world in 1945 are much shorter than the average European at the moment.

And so this is all diet related, and I mean, the healthcare system has its own problems, so, because it, you know, you've got 30 million Americans who really have no healthcare. Which no, really no other major developed country has that huge proportion that don't receive care. And you've got people at the top who receive the very best care. And so it's very inequal and whenever you have very great inequalities of health care, then you get more of a problem and there isn't one clear message that goes throughout the country. And this is obvious when you see what's going on in the U. S. So spending much more, which helps the people at the top with all the big dollars, but really doesn't help the people at the middle and bottom.

So microbes and longevity is really interesting. There've been some studies in mice that you can take the gut microbes from a young mouse and put it into an old one and make it live longer. And they've done this three or four times. You know, I'm a bit skeptical about mouse studies, but it shows things, things are possible. And no one's effectively done this in humans. Quite hard to do. They might have done at home, but no, not in a proper journal. But the data, when you look across populations, is that the gut microbiome is a pretty good marker of your mortality and your longevity. So they've done some studies of centenarians, looking at their gut health.

And these are people living often in the blue zones where they, you know, get the right food, the right exercise radiation, but they've also got the right genes. They tend to have microbial health similar to 40 to 50 year olds on average in those countries. So, there's good and bad evidence that if you can maintain your gut microbiome. If you're a healthy person in your forties or fifties, you keep it at that level, you can live into your nineties or hundreds in a healthy way. And the people that drop off are, when you lose, you know, these are all based on diversity. So you lose some of that richness, that's associated with increased frailty, and we've done studies on this. And when you look at the Zoe database now, we see, yeah, that most of the, the best results are someone in 40 or 50. And there's a very slight decline overall, but there are huge differences between people.

So you can have an 80 year old who's got the gut microbiome of a 50 year old or who really looks like, you know, someone who looks like a hundred, you know, a hundred and is really frail and is losing it. So I think increasingly we're going to see people who want to live have a healthier health span. I think we should be focused on health span. Nobody wants to live forever with, you know, ten different diseases in a wheelchair in a home. That's not fun. But if you can delay all these diseases, it's looking like the gut microbiome is one of the best ways to do that. And it's a holistic marker really of the rest of your body.

So I always tell everyone now to get their gut checked, tested, see how they're doing. Because, you know, most people have got no clue what's going on in their gut. And yet they measure their blood pressure, they'd go to their doctor for blood work. But I think, the state of your gut health, your healthy ratio, your diversity is a much better indicator of your health than getting a DNA test or most blood workups. And you want to then maintain this as much as you can. And the nice thing is that unlike a lot of your blood workups or your genetics, you can do something about it. You can actually, by monitoring every year, you can keep it at a really high, high level. And yeah, this is what. Zoe absolutely believes in so, you know, doing everything you can to improve your gut microbes, which then help your immune system.

And we think the immune system is key to longevity, to the way your body repairs itself all the time, you know, it's fixing stuff. And if your immune system is not working properly, that's when your body starts to go wrong. And you start age related damage starts to occur, so you need the best toolkit and the best toolkit is to have a really well functioning gut microbiome.

**SHAWN STEVENSON:** So we've already shared with everybody a couple of big takeaways for improving and supporting a healthy gut microbiome. One of those of course is eating a diversity of foods real foods.

**DR. TIM SPECTOR:** 30 a week at least.

**SHAWN STEVENSON:** 30 a week. We've even got a number to target. Also being mindful of not overdoing it and avoiding processed sugar as much as we can. Also getting yourself around some healthy people is going to be a good idea as well. Some really interesting things there. But in closing if you could, can you share a little bit about how time restricted feeding can potentially support the health of our microbiome?

**DR. TIM SPECTOR:** Yes. Time restricted feeding or time restricted eating is where you eat the same food, but you're compressing the time window of eating into probably what our ancestors used to do. So, they would generally eat and within a 10 hour time window, and I spent some time with a hunter gatherer tribe, the Hadza, and you see they don't have

breakfast, and they don't really eat when the fires, when it's too dark to eat. So, you know, everything is naturally compressed for them between about ,you know, 10 a. m. and 7 p. m.

You know, that's about, that's when they, they tend to eat. And that's how our ancestors, how we evolved to eat. That gives a really long time for your gut to recover. So, cut out those late night snacks. You know, don't be tempted by the cookie and milk as you go to bed. Really bad idea. And that's because your microbes come out at night and clean up your gut lining. That tidies it all up. The night time team is very different to the day time team. So they're not looking for food. They're just looking for bits of your body that they can tidy up like giving it a haircut. And the lining of your gut is full of little sugars on the mucous layer and they eat those. And having that in really good shape means that you're not getting leakage across your gut barrier and it's for reasons we don't understand, it seems to improve your general metabolism and your efficiency.

And also, we did a big study with Zoe of 140, 000 people doing this. So this is one of the biggest citizen science projects ever. As you know, Shawn, the average study is about 20 people, normally students, usually male, you know, not generalizable. So we asked 140, 000 people who were Zoe customers to try time restricted eating with a 10 hour eating window and a 14 hour fasting period. And a third of them hated the idea. They said, that's not for me. A third of them tried it and sort of half did it. A third of them tried it and loved it. And those third that did it, they're still doing it, you know, a year later. Those people reported less hunger, more energy, better mood. And that's really interesting as well.

So, I mean, it's coming back to the first point about what are the other things you can do. And that possibly, you know, is triggering GLP 1 as well through ways we don't yet understand. But it's, it's clearly just, in a way, giving your gut microbes a really good sleep. You know, we all need, sleep is crucial for our metabolism. And, These microbes also need a rest. So, this constant 24 hour, you know, the U. S. idea of snacking 24 7 is like the worst thing you can do for your microbes. They're like on shift work all the time, right? They can't relax. So, increasingly, we're seeing this data that suggests that, you know, rest is really important. You combine your eating times with your, when you're supposed to be awake, and you're exercising and doing stuff, and this other time is for rest. And it seems that the microbes also are fitting into our schedule. So yeah, time restricted eating is great, but some people find it hard. So maybe those people, you know, don't go for 14, just go for maybe 12 hours, most people can do that.

And I think it's important to realize it's all very, very different, and that's, you know, the essence of understanding Zoe is all about this individuality and this personalization. So find what works for you. And we mustn't forget fermented foods.

I'm a big fan of fermented foods. And in the U. S. we don't eat enough of those, you know. And there's plenty around if you can find them. I mean, look for them and you will see them. But they're an extra boost for you as well and they'll really help. So, yeah, that, I think we've covered most of the basis there and reduce ultra processed food. I mean, it's hard to get to zero, when you're surrounded by everything. And we all like the odd treat every now and again. So my view is, you know, don't go for perfection, go for something that you can sustain for years. And which means not being perfect. I'm certainly not perfect.

**SHAWN STEVENSON:** I beg to differ. I beg to differ. You've talked about Zoe. Throughout this episode, and if you could share where people can get information, access to Zoe.

**DR. TIM SPECTOR:** Sure, so Zoe is a science and nutrition company that offers a program of personalized nutrition based on a home test. You get a home kit, which allows you to test your blood sugar response to food with a glucose monitor, your blood fat response to food and test your gut microbes and you get a gut test. Get those together and they give you your personalized scores into an app, which you can use to get recipes to eat. You can photolog all your foods, you get your own personalized scores and people who do this will improve their energy, their mood, and their gut health improves. We did a randomized trial of this. No one else does a randomized trial. So, you know, everything we do is backed by science and they'll just change the way they eat for forever.

It changes your whole concept of eating. And in addition, we've also got a product that's now out in the U. S., which we also tested with a randomized controlled trial, was better than a probiotic. It's called Daily 30, and it's a prebiotic fiber. That you just sprinkle on your breakfast every day as a, as a routine habit, and that's made of real plants. It's not just green chemicals in a powder. This is real food, and it makes a real difference. So there's many ways people can connect. We also have our own Zoe podcast, purely on nutrition, called Zoe Science Nutrition. Zoe.com the website. You can find the podcast, follow Zoe on Instagram or myself on Instagram. They're the ways to keep up with all the exciting science that we're doing.

**SHAWN STEVENSON:** I love it. This has been amazing. I really do appreciate you stopping by. I know that you're on a tour right now and this has been fascinating. I love talking with you. This is really great. Thank you.

**DR. TIM SPECTOR:** Pleasure for me too. It's great fun.

**SHAWN STEVENSON:** Awesome. Tim Spector, everybody. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. If you did, you already know what to do. Share this out with the people that you care about. Send this directly to



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