THE MODEL HEALTH SHOW

EPISODE 930

How Your Diet and Sleep Control Your Metabolism

With Jonathan Wolf & Dr. Tim Spector

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SHAWN STEVENSON: There isn't an area of your life that's not impacted by your metabolic health. Now, metabolic health is a layered complex topic, but today I'm going to break it down into vital parts to consider so that you can paint a picture of what metabolic health means to you. And most importantly, your most vital places for you to support and improve where to define leverage. Now, this insight into metabolic health was a result of something very special. A friend and colleague who's a world renowned geneticists and nutrition expert is an incredible combo, and his business partner, who's a genius in his own right, they reached out to me and asked if they can interview me about metabolic health, and this interview was featured on one of the top shows in the world, the Zoey podcast. So today you're going to hear this interview in its entirety, and we're going to cover a lot of ground. We're going to cover what metabolism actually is and why it's far beyond just food. We're gonna talk about how the type of food that you're eating can dramatically alter your metabolic rate.

We're gonna talk about the impact of inflammation on your metabolic health. Plus I'm gonna throw in one of my all-time favorite science-backed foods to help to reduce inflammation in a really remarkable way, and make sure to stay tuned for the powerful connection between your sleep quality and your metabolic health. We're covering this and so much more, so get ready to enjoy the ride. Now really quickly, keep in mind your metabolic health and your rate of aging are intimately connected. Our nutrition has a huge impact on our metabolic health, and there are certain things that move the needle for us nutritionally far more than anything else. One of those things was highlighted recently in the peer review journal, the Lancet, and it found that people who regularly drink tea age slower than everyone else. There's something truly remarkable about teas and there are so many different tea varieties for us to take advantage of.

But which ts really stand out when it comes to metabolic health? Well, the study that was published in the Journal Clinical Interventions and Aging took 59 overweight or mildly obese subjects to see if the renowned traditional tea called puer makes a notable difference on weight loss. The randomized doubleblind placebo controlled trial had participants to receive either a placebo or Pu erh for a 20 week study period. There were no other interventions noted. Here's what happened. The scientist stated quote, consumption of Pu erh was associated with statistically significant weight loss when compared to placebo. Fat loss was

seen for arms, legs, and the hip and belly region. The participants who received Pu erh lost more overall body fat, and what was especially remarkable.

When it comes to metabolic health and staying youthful is that people drinking poor air, were also able to maintain their muscle mass. The tea that I personally drink most often is Pu Erh but I only drink the Pu erh from peak life. It's triple toxin screen for purity and made through a patented cold extraction technology that makes it as effective as what was noted in that study. It's wild harvested and truly the best Pu erh on Earth. Head over to piquelife.com/model right now and you'll receive up to 20% off plus some limited time free bonuses like an electric frother. To mix your favorite beverages, go to piquelife.com/model. That's P-I-Q-U-E-L-I-F e.com/Model and please note that you get to try Pique Tee's risk-free with their 30 day money back guarantee. You'll either love it or you'll receive a full refund. They've got several other award-winning tees and so much to take advantage of. Definitely head over there, check them out, piquelife.com/model. And now let's get to the Apple Podcast review of the week.

ITUNES REVIEW: Another five star review titled Outstanding by AF Listener. This podcast is real educational as well as being highly supportive wherever you are in your journey. Thank you, Shawn, for excellent and purposeful content.

SHAWN STEVENSON: Thank you for taking a moment to leave that review over on Apple Podcast. I truly do appreciate it. If you've yet to do so, please take a moment, take a hot minute, and leave a review for the Model Health Show over on Apple Podcast. It really does mean a lot. And without further ado, let's get to this very special interview. By world renowned geneticist and bestselling author Dr. Tim Specter, along with his phenomenal business partner and co-host Jonathan Wolf. They're going to ask some fantastic questions about metabolic health. We're gonna dig deep into the weeds and also look at what are the highest leverage things that we can do to support and uplift our metabolic health. And again, we're gonna cover nutrition in a really big way. But also make sure to stay tuned for the conversation around sleep and its connection to our metabolic health. Enjoy this special interview from the Zoe Podcast.

JONATHAN WOLF: So Shawn, we have a tradition here at Zoe where we always start with a quick fire round of questions from other listeners. We have very strict rules. You can say yes or no or if you have to, a one sentence answer.

SHAWN STEVENSON: Okay.

JONATHAN WOLF: Are you willing to give it a go?

SHAWN STEVENSON: I'll give it a shot.

JONATHAN WOLF: Alright. Are most people metabolically healthy?

SHAWN STEVENSON: No.

JONATHAN WOLF: Can you always tell if someone has bad metabolic health because they will be overweight?

SHAWN STEVENSON: No.

JONATHAN WOLF: Is a faster metabolism better for your health?

SHAWN STEVENSON: Not necessarily.

JONATHAN WOLF: And Tim, can the type of food you eat change your metabolism?

DR. TIM SPECTOR: Yes.

JONATHAN WOLF: Can change in how you sleep, improve your metabolism?

DR. TIM SPECTOR: Definitely.

JONATHAN WOLF: And finally, Shawn. What's the most common misconception about metabolism?

SHAWN STEVENSON: That it's just about converting food into energy.

JONATHAN WOLF: And it's not?

SHAWN STEVENSON: Absolutely not.

JONATHAN WOLF: Well, I think that's where a brilliant introduction into what we're gonna get into now. Firstly, we've never done a podcast specifically on metabolism, and secondly, I really don't understand what it is despite the fact that the word has come up so often. So actually I'd love to start right at the very beginning, Shawn, what is metabolism and why does it matter?

SHAWN STEVENSON: From a rudimentary perspective, it's converting food into energy, but that's looking at energy through this very isolated, vanilla way. You know, there's this entire microcosm of events and metabolism is really about the sum of all the different pieces that can create and generate energy and that feed into each other. For me, it's really based on that principle of energy cannot be created nor destroyed. It can only be converted from one form into another. And so this energy exchange, even if we're looking at that very vanilla version of it, of food is creating energy, where does the food come from? What are the pieces and parts of the food that create the energy?

And there are other things besides food that are getting converted into energy for us as well. And whether that's body fat. Whether that is, you know, oxygen and how it relates to all these different pieces. There are literally millions of parts and inputs that determine metabolism. It isn't just food and even from the perspective of food being used as energy, right? The endpoint being the mitochondria, which we'll get to, I'm sure, and talk a lot about. When we eat a food, it doesn't just become energy. It gets converted into a currency that our body can actually use. Our body runs on a certain currency, and so there's so much work involved in converting that food into the currency that our body can use. And sometimes that conversion doesn't happen, right? Our body isn't converting everything that we eat into that currency that we're using.

JONATHAN WOLF: And Shawn, could you talk me through that maybe in a very simple way? Like, let's imagine I eat a piece of bread.

SHAWN STEVENSON: Let's use actually a good example since you mentioned bread. All right? There was this fascinating study published recently in the journal Food and Nutrition Research, and they had test subjects to, and this is a crossover study, so everybody's doing both things. To consume a sandwich of either whole multigrain bread and cheddar cheese, or a sandwich of what they deemed to be ultra processed food, which was white bread and cheese product.

And here in the United States, like Kraft is a big cheese company. That's what I grew up eating, but it's called Kraft singles because they can't le legally call it cheese. There's another cheese in the cheese. And so it's this kind of cheese product. And so they had test subjects to consume both sandwiches at different parts of the study.

Now, keep in mind these sandwiches have the same amount of protein, fats, carbohydrates, and the same amount of calories. But when they ate the two different versions of these sandwiches, very different things happened with their metabolism. In particular, the expenditure of the calories they consumed. So when people ate the processed food sandwich versus the whole food sandwich, they had about a 50% reduction in calorie expenditure or calorie burn after eating that processed food sandwich, something happened and to create a very simple understanding, it basically created metabolic clogs. It blocked the body's ability to use that energy efficiently and to get rid of it. And so what does our body do? It's gonna do what it can to protect us.

And if even that means holding on to some of these calories, to try to figure out, you know, what to do with this later at some point. And not to mention all the other pieces that come along with that. It's not just the calories from the food. And, and as Tim knows this as well, there's a lot of other compounds that come along with ultra processed foods, whether this is, you know, dilates, whether this is, you know, pesticides and all these other things that can disrupt our metabolism.

And so when it boils down to it, if we can just kind, kind of consolidate this whole idea. When we're choosing to eat a certain food, it's not just this calorie conversation. And Tim and I talked a lot about this when I, when I had him on my show. It's so much bigger. There are all these, and this is the term I wanna share with everybody, epic caloric controllers. Are these Epicor controllers that are determining how our body is processing the food that we're eating. And so today we're gonna expand from the conversation of just calories and understand that our metabolism, when it boils down to it. It is the conversion of food into energy, yes. But there are all these other really wonderful factors for us to pay attention to.

And today I want to help everybody to just refine it to some very simple ideas because it is, it can be complex. Obviously there's so many pieces to cover. But today I wanna share some of the like top things. That are the Epicor controllers that we can apply in our lives to make better choices and to have a more efficient metabolism overall.

DR. TIM SPECTOR: That study you referred to was that short term? Metabolism or long term. 'cause I think people often get confused because in a way, the long term might be more important as you as it, those, the body resets, whether it's from exercise or eating.

SHAWN STEVENSON: Yeah.

DR. TIM SPECTOR: Do you just, do you want to try and help us through that? 'Cause I, I always find that, you know, one of the hardest things when we talk about metabolism is this. The short term reaction of the body. And then what's the sort of, what's the long term rate?

SHAWN STEVENSON: That's such a great question that only you would ask. Of course. What we're looking at here is exactly that. It was a short term effect, right? So there's a 50% reduction in expenditure of calories in the short term, but long term, what does that look like? Well, the body's going to find a way to get rid of a lot of that energy, but there's this residual effect as you're doing that day after day after day, and this kind of compounding. Reverse interest in a way and making it harder and harder and harder for us to have that long-term energy expenditure. And so it's just taking a snapshot. And that's the thing about

these studies, they're always looking at things in these snapshot moments, and life is so much more dynamic.

JONATHAN WOLF: You looked at these two different meals, it looked almost the same.

Like in theory they're like bread and cheese, bread and cheese. But one is sort of ultra processed and one is sort of much more whole grain and natural and real cheese. And you're saying that metabolism is the way that you convert food into energy, but although both of them have the same number of calories, so you think that like the metabolism has to be the same, you're saying that with this ultra processed food, somehow your body's metabolism was completely different.

SHAWN STEVENSON: Yeah.

JONATHAN WOLF: And it sort of held on to like a whole bunch of those calories and stored them as fat basically. Whereas with that more natural food, it sort of, it sort of burnt them up even though they were the same calories. Did I understand that right?

SHAWN STEVENSON: Now, we can't say, that study doesn't reveal whether or not it's getting stored as fat.

JONATHAN WOLF: Okay.

SHAWN STEVENSON: Per se. But the body is slowing down its processing of that energy. There's gonna be a tendency, especially over time, that more and more of that's gonna get stored as fat. But as Tim mentioned, in the short term, it can just be, everything's kind of slowing down. Your body, from my perspective, is just trying to figure out what to do with this stuff because it is newly invented. And you know, based on the, the things we really evolved eating where we have a level of efficiency and our bodies are incredibly intelligent and resilient. So they could figure out how to, how to process that cheese product, you know, if it's forced to, but ideally is that optimal, probably not.

JONATHAN WOLF: The following question that was one of the top questions that we had was around metabolic health. So just as I think I'm still a bit confused really about exactly what metabolism is, I'm definitely also confused about what metabolic health is. What does it mean?

SHAWN STEVENSON: Metabolic health, and I love that this is a big part of the conversation today. Because, you know, when I graduated from college, I studied nutrition, I studied biochemistry, and I was not taught about quote metabolic health. All right? It's just like even in my first nutritional science class, you know, we were, first of all, we were taught the food pyramid. This was the nineties, my teacher, the professor was basically, you know, he came in and he shared that, you know, if you want to lose weight, you, expend more energy than you take in.

Right? As simple as that. If you want to gain weight, you consume more calories than you expend. And that that was it. And if you want to stay the same, they need to be the same. And a little side note, and I don't talk about this often, but my teacher was significantly overweight and. I'm not saying that, you know, this was a character flaw or anything like that, but I'm sure that he was doing a lot of the things that he was trying to teach us, but they just simply weren't working for him, and he just needed, in his mind, I just need to cut more calories.

I need to do better. And we start to punish ourselves because this dogma that we've been taught isn't working out. And it does work for some people. It does work for some people because at the time. He's teaching us and he's applying, we need to eat seven to 11 servings of healthy whole grains every day. And that's the basis of our diet. And so some of the principles that I took from that is basically, you know, if it's white, it's not right. All right. So no more refined carbohydrates. I'm not going to eat this regular pasta that I grew up eating. Lemme get whole wheat pasta. Right. I'm not gonna eat the white bread that I grew up eating in, in the United States is like Wonder bread and bunny bread, and now I'm going to eat whole grain bread.

I'm gonna eat a lot of brown food and this is not taken into account my unique metabolic fingerprint. Right? So these are some of the things that go into our own unique metabolic fingerprint and our own unique metabolic health. And part of that is our own unique microbial fingerprint and what if somebody has a hard time with their microbial makeup trying to process a lot of these, quote healthy whole grains? What's that? What is that gonna do to their metabolic health? What is that gonna do to their energy assimilation and expenditure, right? All this stuff matters and we can't have this kind of cookie cutter approach to things. And so an example that really, like it stayed with me for years that I couldn't understand.

And I would go to this Chinese food restaurant that was right off campus and I was like wondering why the, the store owner and their family, I would go around the time when they're having their lunch and they were like eating white rice and like steamed vegetables and I'm just like, why are they eating white rice? Don't they know that? You know, this is so much better for you to eat a brown rice and. What it was truly, if you, you know, my wife is from Africa as well, she's from Kenya and they've been eating white rice for a long time. Yes, there can be parts of the container or the brand of certain things that can add fiber, but they can also be a gut irritant for a lot of people as well.

And so I think some people, our ancestors figured out centuries ago that if we want to efficiently process this food without side effects, if we're looking for caloric. Right. If that's our goal with this thing, we might wanna get rid of this because it can create some gut irritation for some people. And so getting that background education and not being taught what metabolic health is, which is what is right for me right now to efficiently process my food to feel good to, of course a body composition can come into the mix as well. It's like a out picturing, and your opening like rapid fire question was, can we have out picturing of fitness and still be metabolically unhealthy?

Absolutely, but it is a part of the equation. There are all these different parts and so, you know, ultimately, and the most recent data here in the United States, and again, I think that the number of course, it can shift a little bit, but I think it's pretty close. Only 12% of United States citizens are metabolically healthy.

JONATHAN WOLF: Only 12%.

SHAWN STEVENSON: Only 12%. That should be outrageous, like blow our minds. But the question is, again, this is what we're talking about. What does that mean? What is metabolic health? Well, in this particular study, they were looking at, you know, triglyceride levels. They were looking at HDL and LDL ratios. They were looking at, yes, body composition, body fat percentage and things like that. But it's still looking at things through a very small frame. So. I'm not gonna be the guy that comes on this show and tells you this is exactly what metabolic health is. Sure.

DR. TIM SPECTOR: Shawn, I've always. Thought of, you know, I have this problem writing books to, you know, to the public to try and explain metabolism.

SHAWN STEVENSON: Yeah.

DR. TIM SPECTOR: And my editor says, what is metabolism metabolic health? Well, the best way I described it, and I, I love your thoughts on it, is it's the energy management system of the body and its efficiency. It's how all the bits in the body work together and how efficient it is, or whether it's inefficient and it's having to work too hard to keep the house warm or cool or whatever it is, is keeping it exactly at that right temperature all the time, regardless of what you are doing. Do you think that's a reasonable way to

SHAWN STEVENSON: Absolutely.

DR. TIM SPECTOR: describe it?

SHAWN STEVENSON: The efficiency is such a key word in this, but that can be misconstrued because we can be very efficient in converting that white rice. Into glucose and shoot up our, our blood glucose have a huge response from insulin. Yeah, it's efficient to convert that into energy, but is that metabolically healthy for us? And so we've gotta take into account that efficiency means multiple things as well.

DR. TIM SPECTOR: Yeah. It means not having side effects and means, you know, not having other things happen to the system that make it go wrong, I guess.

JONATHAN WOLF: I was just thinking that, that you were talking about the, you know, the white rice and then the brown rice and the white bread and, and the brown red.

And, you know, both Tim and I have both done the Zoe test team, where it was part of it, you, you get your own blood sugar and probably, you know, many of the listeners on this podcast, have also been, members have done that. And I think one of the things that. I remember being most shocked by was a whole bunch of things that I thought were really healthy 'cause they were brown and so like the first time I ate brown bread and I spiked my blood sugar so much and just like Tim, my wife's blood sugar spiked a lot less than mine, which was sort of annoying and like brown rice like off the roof. So definitely have had that personal experience you're talking about, about how your metabolism is dealing with this. Not at all in the sort of nice, easy way that I had always assumed because I've been told that this stuff was sort of fine for me.

SHAWN STEVENSON: Yeah. And that can be explained through a number of mechanisms, right? One could be inflammation, there could be this inflammatory response that's causing some disruption with how your body's handling that. And that reminds me of a study. This was conducted by researchers at the Albert Einstein College of Medicine recently. And they found that, and this is a huge issue that people aren't talking about in relationship to metabolism.

Inflammation, yes, but specifically neuroinflammation and these researchers were looking at hypothalamic inflammation. So the hypothalamus is kind of glorified as like a master gland in our brain that's controlling a lot of things downstream. It's an integration of our nervous system and our endocrine system, so our hormones and also our nervous system.

And what they found was that people who had. Inflammation in their brain. Hypothalamic inflammation had the accumulation of more belly fat and body fat downstream, and a higher level of insulin resistance. Now, here's the catch. People with more insulin resistance and

more body fat also had higher rates of inflammation in their brain. So it was like this vicious circle that's creating all this metabolic unrest. So their metabolic health is suffering because of inflammation in their brain. But it's just, it's the chicken or the egg scenario, like which one came first, you know, which one's causing which. And of course, I'm, I'm holding back on sharing solutions right outta the gate, but I gotta share one really quickly if that's okay. I gotta share one.

DR. TIM SPECTOR: Ah, you couldn't, you couldn't wait.

SHAWN STEVENSON: So some researchers at Auburn University, here in the US, found out that there's this really remarkable food that can help to address this neuroinflammation. It's a food that's been used for thousands of years, of course, and it's oleocanthal rich, extra virgin olive oil. They found that it was able to reduce inflammation in the brain specific. Helping to repair and support the blood-brain barrier because part of the reason this inflammation epidemic is happening in the brain is that things are getting into the brain that that shouldn't be there. There's a breakdown of the blood-brain barrier that's happening because of the environment that we live in, and we could get into all the different reasons why, but it's mayhem.

And if people are wondering like, is my brain inflamed? Chances are yes. You know, especially if, if we're not metabolically healthy and. The question would be, well, why doesn't my doctor know this? The brain is very protective. You know, this isn't something that you're going to, to notice per se, unless you have very, very sophisticated imaging and all these different tests done.

It's just a place that we're not looking, but I'm telling you right now, and people that are listening to a show like this, they're always ahead of the curve. And so you're gonna hear more about this in the years coming up, I'm sure about neuroinflammation. The downstream effects with metabolic health and also body fat causing more neuroinflammation.

JONATHAN WOLF: You're saying the magic properties of extra virgin olive oil on the brain as well as in, you know, other things that might've been studied before.

SHAWN STEVENSON: Yeah. And one of the benefits of that extra virgin olive oil is it tends to be anti-inflammatory. Yes.

JONATHAN WOLF: You mentioned a few minutes ago this idea that like only 12% of adults in the US are metabolically healthy, which is like an extraordinary number.

And I know that across Europe and the rest of the Western world, you know, these numbers are not very different. I'd love to understand like what that means. And, you know, Tim, you're a doctor, what does it mean if someone is metabolically unhealthy, you know, for their long-term health?

DR. TIM SPECTOR: Well, classically it's been associated with many common disorders, so the main one's been type two diabetes. So you're much more prone to have type two diabetes if things are unstable in a way, and that just means that your, the amount of insulin you're producing relative amount of sugar is out of kilter, and therefore there's more stress on the system. Therefore, you're more likely to end up with type two diabetes. Also means you're more likely to have increased risk of heart disease. Increased blood lipids and inflammation in your arteries. Your blood pressure is more likely to be raised, therefore you're gonna get hypertension and then get strokes, et cetera.

And increasingly, it's also been linked to brain disorders as, as we were discussing. But the big one at the moment is the increase in dementia. Which has also been termed as type three diabetes because of increase in both conditions in, in, in many countries. So having a disordered me metabolic condition really predispose you to all kinds of conditions, and there's probably many more that we don't yet associated with it just because your, your basic system is not functioning properly, which means that the rest of the body is struggling to keep up as well. So as well as these individual problems that we're seeing with glucose and sugar and insulin and blood vessels, the whole system is just working too hard, I think is the way I see it. And therefore your body can't repair itself as well, as well as it could otherwise. And also you get this other problem of inflammation coming in due to the fact that your basic energy system is not, not really on its top game, it's starting to wobble.

JONATHAN WOLF: I'm trying to think of an analogy. I, I haven't got a very good one, but it isn't my analogy a bit like, you know, I know I need to have, the oil always needs to be topped up in my car. You know, it's one of those things that they do when they check on it, you know, in order for it to run fine. And my car runs these days for like 10, 12 years without anything going wrong anymore. But if for some reason I let all the oil like run low and I keep running it, then I know I'm sort of causing all this damage to this car and my car's gonna, like, something's gonna go horribly wrong after like. Three years or four years. Is that how I think about it? It's not like this big collapse immediately. It's like an ongoing..

DR. TIM SPECTOR: Yeah.

JONATHAN WOLF: It's damage?

DR. TIM SPECTOR: Well, whether it's your car or it's the boiler in your house that's leaking in order to keep your house heated at the perfect temperature, you're having to sort of put more fuel in. It's less efficient. And, every now and again it's gonna break down or, and, and cause other problems. I think that's. Probably more the way to see it and you might end up with rust in the system and, and things that wouldn't happen if it was really in, in, its in its tiptop state.

SHAWN STEVENSON: But therein lies the problem with trying to consolidate metabolic health into, is it the oil? Right? We've got engine cool it, we've got, gasoline right to run your car. We've got even the windshield wiper fluid could be a problem if it starts raining, right? It's all of these factors that. Are impacting the performance of our human vehicle, right? And so we can't consolidate it, and wonderful researchers are trying to, like that study that I mentioned with the 12%, right?

We're looking at cardiometabolic factors, but what, what about how your body is hand handling insulin and blood sugar and all these different things, but none is, none of these things are happening in a vacuum. They're all affecting each other at the same time. There isn't a cell in your body that's not being affected by the activities of all of your other cells. We have trillions of cells and it's a cellular community.

JONATHAN WOLF: I like, I like this idea. All your cells are working together in harmony. That's like your analogy. You know? These systems are working really great. What are the simple things that have changed that means that, you know, now you're describing almost everybody as not being metabolically healthy and presumably a hundred years ago they were, what? What are the, what are the key things?

SHAWN STEVENSON: To use one word to kind of encompasses the environment. The environment that we're existing is very different than a hundred years ago. Very, very different. And whether this is the environment exposure itself, you know, there are billions and billions and billions of newly invented chemicals that are released into the environment here in the US alone.

And this is allowed, by the way, by the EPA, the Environmental Protection Agency is supposed to be protecting. Uh, we're, and that's the thing too. We are a part of the environment. We tend to separate humans and environment. We are a part of the environment and so just the air that we're breathing is different. And you know, recently I was having a conversation about these PFAS. Chemicals are these forever chemicals that are just a part of our lives today. And..

DR. TIM SPECTOR: It's the ones on Teflon and, you know, the frying pans and, yeah, cookware and things.

SHAWN STEVENSON: DuPont. Thanks to DuPont. You know, this is back around the 1940s and Teflon, which again, just look at this incredible innovation. But now, the result of that, the fallout of that is that 98% of people tested on planet Earth, I'm talking about from Alaska to Hawaii, 98% of people now have DuPont's chemicals in their blood. And the researchers had to go back and look at blood from, pre that time, you know, around, and it was from, from soldiers to find blood that was clear of these compounds.

And so, the air we're breathing, the chemical exposure, whether, whether it's through, you know, cooking and the fumes. And this is going back to another thing about our metabolic health and energy we're using. It's not just the things we're eating, it's also what we're

inhaling as well is used as energy and conversion. And so obviously the food, our food culture is very, very different than our ancestors. And you know, I've been talking a lot about this and, and shouting this from the rooftops. And one of my latest projects really helped to make, to create a shift in this conversation. My book Eat Smarter a few years back and talking about this processed food environment, ultra processed food environment.

And according to the BMJ actually. Over 60% of the average American's diet is now made of ultrapro, newly invented food. But the, the numbers are even worse for us children. And this was published in jama, the Journal of the American American Association.

DR. TIM SPECTOR: They're even worse for UK children than U.S. ones most recent data.

SHAWN STEVENSON: Oh yeah. This is, and this is the thing as that's being in implemented deeper into the culture, those children are now gonna pat and it's just gonna get worse and worse. So about 70% of US children's diet is made of ultra processed, newly invented food. And that number is just continuing to climb. And this isn't just a US phenomenon, obviously, but the question is what? What is that? What are, what are ultra processed foods? Humans have been processing food for a very long time. Alright. Just to be clear, if you're taking that olive, olive oil, for example, where's it come from? We're doing a process to get the olive oil out of the olives, but traditionally it's a cold process is a stone process.

You're smashing the oil, collecting the oil. It's very simple, right? Ultra processed foods on the other hand, is when you have a field of corn that somehow, some way gets turned into a box of lucky charms. It's so much perversion and, and things that happen. All these different chemical additives, you know, the processing of even creating this genetically modified weird corn in the first place. But for us, and I grew up in, you know, a glorified food desert here in the United States. This was just food, you know? I didn't know that it was bad for me. It's just what we were exposed to. And it's cheap. It's very tasty as it's designed to be. And for us it's just food. I didn't know that there was a difference between say, you know, a wild caught salmon and fish sticks. You know, I didn't know that there was a difference, and so I'm gonna prefer the f sticks with , with copious amounts of ketchup, by the way.

JONATHAN WOLF: I'd love to bring Tim in here, both on, specifically here, I guess we're talking about these ultra processed foods and, you know, do they impact metabolic health? And then I think also interested in. I know Shawn's talked about quite a number of different ways it might be affecting our metabolic health, and I'm curious, like, as you're thinking about these, like what are you most worried about? You know, as people are thinking about this, what should they be most worried about as they think about themselves and their and their children?

DR. TIM SPECTOR: For 20 years I was studying genetics and there's a lot of data showing that genes are important in modifying our metabolic health and where we put the fat and the internal fat. And we've discussed this before. So, you know, I believe that it, it was genes were really important, but what's clear is the last 50 years where, you know, levels of skyrocket, our genes haven't changed at all. So our genes were really well adapted for the environment our ancestors had. And that meant, you know, we had the right energy control to get the right blood pressure, to have the right amount of, you know, fat on our body to be able to process foods correctly.

And now, we are getting this onslaught of not any pollutants, but all these ultra processed foods that make, that our genes really weren't geared up to deal with. And also the abundance of food, the, the fact that there is unlimited food, which our ancestors never really had. So I think it's the inability to deal with a, the abundance. And the different types of food that are causing this problem, in most of the population. What's interesting is that there do seem to be some people in all populations that are protected against this. So even in the most obese countries, you'll find about 25% of the population that can stay.

And, we don't really understand why that is, but everyone else has ballooned over the last 50 years. So I think we have to really have a hard look at what we were hardwired for our system and try and get back as close to that, which means not only changing what we're eating, but also our patterns of eating. You know, so going from. Our current six episodes of eating every day, back to perhaps what our ancestors were doing as two large substantial meals and also our exercise patterns, not being as sedentary, better sleeping patterns, all, all these things that would then get us back on the same wavelength as, as our genes have determined, you

know, the way to, for our energy to, to be stored our, our metabolism, to be working maximally.

JONATHAN WOLF: Do we understand how these ultra processed foods can end up damaging your metabolism? Because I think I'm listening to this story that says it's not as simple as just like you're eating too many calories. I think that was where you started, Shawn, right? And there's all of this food that is just profoundly different from anything we had before. But do we understand at all how this works?

DR. TIM SPECTOR: We know there are a number of potential mechanisms do disagree with you think Shawn, but I don't think we know which ones of 'em are the most important. We really haven't done enough study on ultra processed foods. It's like being a taboo subject. Many 'cause big food has managed to lobby government to make sure that that, you know, in the US and the UK we're not doing enough research on this 'cause it's, you know, we can't touch cheap food that's for the masses, that's political. We can't go there, but there are a number of possible mechanisms.

One, one is the speed of which you eat is much different with ultra processed food. So it, it might bypass some of these evolutionary mechanisms for feeling full. So that's, that's one that all our ancestors would've make taken much longer to eat that food. Therefore, feeling full, you know, those, those signals would've come in, which they don't come now.

Then you've got the actual the softness of the food, which means that you don't trigger. It's like baby food. We're eating so your jaw doesn't get the same workout. And there's evidence that the jaws of children now are receding. But if you've seen this, that dentists are very worried that every 10 years our jaws are getting smaller 'cause they're just not used to actually eating real food. So, you know.

JONATHAN WOLF: That's crazy. You're basically saying that they don't eat, it's sort of like you're not working out your jaw muscle enough and your, your jaw is actually not growing.

DR. TIM SPECTOR: Yeah. Many people actually spend their whole life eating baby food now.

SHAWN STEVENSON: This is phenomena, it's called vanish vanishing caloric density. Right. So we have these foods like a Cheeto for example, and it's like so robust when you first bite into it, then it disappears, right? And it gives this illusion of crunch and density. And so also we'll continue to eat a lot of it and overeat it. And it's designed to be that way because

the way that we evolved. We have certain senses and receptors that are very sensitive to flavor and like a overabundance of flavor. And so it's them having the right, designing the right amount of intense flavor, but then to be able to back off with other, with other compounds and just put it at this right level.

And also if we're eating a real food, right? There's a certain amount of chicken that you might eat and you're just like, I'm done with this chicken. Like, I can't eat another bite. Or the same thing would hold true, you know, with eating an avocado per se, like as we're eating a real food, our bodies start to rebel against it. Like, that's enough. I've had enough. It doesn't happen like that. They, the, the ad is literally, I bet you can't eat just one. That's the FritoLay mantra, all right? They're literally saying, you can't just eat one of these chips. You're going to eat the bag, and you gotta fight yourself to stop eating it. It's designed to be that way. It's brilliant, but it's also kind of like a doctor evil, level of, of brilliance in shout.

JONATHAN WOLF: Sort of terrifying, isn't it? The way you described, it's like we've carefully designed this so you are gonna be unable to stop eating it. Yeah.

DR. TIM SPECTOR: We're gonna beat your genes. Yeah. All that evolution is worthless. You are powerless in our control. And of course, the chemicals in these products, themselves have effects on our body that, again, our genes and evolution haven't prepared us for so many of them are totally artificial in, in that they come for like the petrol industry for most of the artificial sweeteners, and they can disrupt the gut microbes and they produce chemicals that can themselves cause diabetes in, in other animals, and send off anti metabolic signals to the rest of the body.

So when you eat some of these, these junk foods that Shawn's talking about, they contain regularly contain artificial sweeteners, emulsifier, preservatives, and these are not things that

our ancestors ever encountered or we have genes evolved to. So when they get down to the level of our gut microbes, who would normally be processing them, they encounter them, they bash into them, and when they, they see something like an artificial sweetener, they produce chemicals in response to try and break it down.

They can't break it down, but the chemicals they produce, can go on and make you more likely to get diabetes. They can send signals to the rest of the body saying, there's something going on here. I don't really understand it. It's like an alert signal. It forms inflammatory signals or it. Stimulates the immune system or it messes up the metabolic system. And that's what lots of basic research has shown. And you get similar effects with emulsifiers, which glue some of these products together, these potato chips and things always contain these glues to make, make it look like real food. And when your, your microbes encounter them, you get similar results.

They can clump together so they don't work very well. They get stuck together. And these emulsifier also affect the gut lining. So that you get leakiness of bacteria across into the blood and that can cause other metabolic disturbances. So these are just a few of the possible ways in which, you know, our bad food environment is, is messing up our energy management system, our metabolism, and that's why we're in this mess.

JONATHAN WOLF: We talked about a number of different causes behind this metabolic disease. Do you think that food is the number one, or how do you think about that?

DR. TIM SPECTOR: Yeah, I see it as definitely the number one obvious one that's, that's really changed. I think. Yes, there are these pollutants and plastics, but we don't yet know. How much of a problem they are, yet we know they're a problem, but we don't know how big it is. You know, we should be very wary about it, but I think we do know enough about ultra processed food now to know that is a definite real problem for everybody. These other ones, we are just starting to get information on them.

SHAWN STEVENSON: I give you a very explicit reason why food is the number one is because all of our tissues are made of food. Every single one of the trillions of cells that, that I

mentioned is literally made from the food that we eat. And so we're determining what we're making our tissues out of. And also the energy that our bodies are running on is made from the food that we're eating. And so if we've got, you know, a, a, our mutual friend Will Ovitz, who he went to school for, like forever, you know, 15 years or something, to be a top tier gastroenterologist, he was not taught that when he's looking at his patients gut health or looking at, you know, their, the stomach, the large intestine, the small intestine that all of those organs are made from, the food that is patient has eaten.

All right, so the organs responsible for digestion, assimilation, and elimination are made from the food that the people are eating itself, right? Cardiology, same thing. We've got these experts looking at the heart health and the cardiovascular health of their patients. I know the very best in the field.

These are my friends and colleagues. They're not taught that when they're looking at their patient's heart or their arteries or their veins that they're looking at, their patient's food that they've eaten, let alone what the blood is made of. And the list goes on and on and on. So that's why food is so powerful to affect change is because it's making all of the parts. And so if we are going to improve our metabolic health. We've gotta make our parts and our energy out of the best things possible.

DR. TIM SPECTOR: What do you say, Shawn, to people that say it's not about food, it's, we can just tweak the mitochondria. Mitochondria, Jonathan, are these little bits of the cell that, like, we call them the batteries of the cell. And so all our cells have this little mitochondria and they have their own set of genes and things, and there are many. People out there who are selling products, to enhance your mitochondria. And if you just tweak those mitochondria just a little bit, give 'em a little 5% more, we can reset everything. I'd be interested in your, your views on that rather than this more holistic view that we've been talking about. Do you think there is a quick fix through our mitochondria?

SHAWN STEVENSON: I'm sure there are things that can affect the, the efficiency and health of the mitochondria. At a micro scale, but it is this whole system function. By the way, just to give some context with the mitochondria, about 10% of our body's mass or about 10% of our

weight. Is made of the mitochondria, right? We have a ton of mitochondria in our bodies and so there isn't one thing that's just gonna fix all of that and make it run better. And keeping that in mind, the mitochondria really the end destination for certain processes to take place, right?

The quote, burning of fuel. But even with that. Even with that, there are so many steps preceding that, and there are so many steps after. Because if we're just talking about in the context of quote, burning fat, well, I was taught in school like lip lysis, right? Which is the freeing of the fat to be used as energy, but it still has to make its way. It still has to make its way to the mitochondria, right? We're not just, again, we can't just address the mitochondria. We've gotta address all of the efficiency of this energy getting released to even get there and to be used in the first place.

JONATHAN WOLF: I'd love actually to talk about, you know, what can our listeners do and what are the actions. And before we talk about food, you actually wrote a bestselling book called Sleep Smarter. Is there any role for sleep within improving this? And maybe just help us say like, if we were gonna try and run through now, like what are the things you can really do? What would you be saying to that?

SHAWN STEVENSON: Absolutely. So sleep is another one of these epi caloric controllers or epigenetic controllers, and I think the best way to paint this picture is from scientists at the University of Chicago and they did a ward study, all right, in a controlled setting, crossover study, looking at how does our sleep impact our metabolism? All right. And so they had test sub subjects to get ample, an ample amount of sleep for about two weeks. So this was eight and a half hours of sleep, but they put them on a calorie restricted diet, all right, just to monitor weight loss and body fat loss as well. And so, yeah, they collected all the data.

Another part of the study, again, it's a crossover study, so they have a washout period now. They sleep deprive them. And they put, they're on the same diet and different sub test subjects are doing different things at different times, and they're, it's a controlled environment. They're eating the same amount of food, same amount of calories, but now

they sleep deprived them and they're only getting five and a half hours of sleep, collect all that data for about two weeks.

After they compile the data, when test subjects were well rested, they lost about 50% more body fat mass doing the same exact thing. They're eating the same amount of calories, but by getting more sleep, they lost more actual body fat. All right. If we're looking at this through the lens of metabolic health, the metabolic health was improved when they were getting better sleep. Now, here's a part of study that I don't talk about a lot. Where is that energy coming from when they're losing weight? Where's that energy coming from? When they were sleep deprived, they were losing more muscle upwards of 60% more of the weight loss because they were in a calorie restriction, but they were losing more of their muscle tissue, which is going to make you more metabolically unhealthy, long term. Right? So our sleep has a huge, huge impact on our metabolism, and it might be the big outside of the food itself that we're eating. The other major controller for us to pay attention to.

JONATHAN WOLF: And Shawn, is there one thing that I could do to improve my metabolism that I could start doing today?

SHAWN STEVENSON: There are dozens of things, of course, but if I was to consolidate it down to, I could do two really quick.

JONATHAN WOLF: Got it.

SHAWN STEVENSON: One number one would be, what is the biggest disruptor of our sleep today? Factually, it is our technology. So the number one thing in the environment that I would recommend people to do, we've got tons of data on this. If you're on your screen right before bed. That light that's shooting into your brain is throwing off your circadian clock, your cell, every cell in your body is getting out of sorts.

And just trying to figure out what time it is, because we evolved being connected to this 24 hour solar day. And so we have this artificial daytime essentially when we're on our devices right before bed, and it suppresses our melatonin and increases our cortisol. So you could be physiologically, like you can be exhausted and just pass out. But you're not gonna go through

your sleep cycle efficiently. So my recommendation, give yourself a little bit of a, a tech curfew. Now again, I know that we're adults and we don't like restriction. Even the word curfew still brings up bad feelings for me. But giving yourself a little bit of a screen curfew. But here's the rub, we cannot take away something that is so attractive for us, like our cell phone, right? Like Instagram and all these things that are designed to keep us hooked and entertained. We've gotta replace it with something of equal or greater value. That's the key. And so what can you put in that place, that 30 minutes or an hour? If you wanna get crazy off your technology, you know this, what is gonna be unique to you? So some people love to. You can read a physical book, they still exist. You can listen to an audio book or podcast. I'm guessing I can't just see chocolate. That's not the right swap. I mean chocolate. Tim knows this as well, the quality of the chocolate, like there's some good chocolate out there that can be beneficial.

JONATHAN WOLF: He always tells me off for wanting to eat at 11. So I like the idea that you are now telling me that in order to put my phone away, I'm allowed to eat my chocolate.

DR. TIM SPECTOR: No chocolate on your pillow. That's the No.

JONATHAN WOLF: Okay.

SHAWN STEVENSON: As a matter of fact, having a cup of maybe like some hot cocoa or cacao with some Rishi mushroom, which has been firm to improve our REM sleep, non-REM sleep, overall sleep time, that's a good idea. And I've been known to do that a timer, a time or two. And because there's these precursors in cacao and chocolate where it comes from, like tryptophan, you know, that, that help convert into melatonin down the road. So the screen curfew, fill that with something of greater equal value. Time with your significant other, maybe, you know, maybe some intimate time, like fill it with something that feels good.

The second thing would be to control your environment that you're sleeping in and to create a sleep sanctuary. The human brain is always looking for automation, and so if you're going into a room to, and you, you wanna go to get some great sleep, but you're getting into your bed, and this is where you do a lot of your work, this is where you do a lot of your scrolling.

Your brain is gonna be looking for that behavior. Alright, so make your bedroom tech-free to the best of your ability and make sure that you get some here. We've got some blackout curtains around, but if you got external light pollution, some researchers at Cornell University found that just even putting a light behind the test subject's knee was enough to disrupt their sleep cycle.

Alright, so our skin has photoreceptors as well. So get the room nice and dark, cool. And to the best of your ability, keep the technology out of, out of your bedroom. Make it a sleep sanctuary.

JONATHAN WOLF: Thank you, Shawn. So Tim, what are the best foods to support our metabolic function? If you were gonna give us a brief outline of someone what, what actual advice someone might be able to take.

DR. TIM SPECTOR: We know that you need to avoid foods that are really gonna peak your blood sugar and stress your insulin levels. For many people changing their breakfast, so not having their normal morning cereal or granola, not having their orange juice, which they would otherwise think is healthy, cutting out some of those fruit smoothies that they've been told are, are super healthy.

So changing in a way what you believe is healthy food, and this is. This is what people learn when they, when they, will do the Zoey program. But I think cutting out their sugar spikes is probably the number one thing for metabolic health. If you had a tip, which means that you should replace those generally with higher fat foods, good quality fats, obviously, and plants that have high fiber content so that you, you're dampening down any, any sort of sugar spikes, particularly if you are, you are prone to this or there's metabolic diseases in, in the family.

JONATHAN WOLF: And so Tim, what's your go-to breakfast?

DR. TIM SPECTOR: My go-to breakfast is a full fat Greek yogurt. Mixed with milk C and with berries from the freezer. And I generally use the, the Zoey Daily 30 mix now on top of that to give me extra fiber and lots of different plants.

JONATHAN WOLF: Amazing. I have so many more questions, but unfortunately I have hit time. So I'm going to try and do a quick summary on what was quite a complicated topic. And Shawn and Tim, please keep me honest. So the biggest thing I'm taking away is that like only 12% of Americans are metabolically healthy. And you're saying that number is very similar if you're in the UK or Canada or wherever. And that's a problem because your metabolism is what's turning food into energy.

And if it's not working well actually, the end result is either lots of very serious diseases, but also, you know, weight gain and all the results that we see around us. I think the other thing I take away is like the culprit seems to have changed a lot. Like you both talked a lot about ultra processed food and I never heard anybody talk about ultra processed food when I sort of first started Zoe with Tim eight years ago. So that's a really profound change. And Shawn, you shared this amazing study where you were saying like literally you had people eat exactly the same sandwich, right? But one was like a sort of regular sandwich like my grandmother might have eaten and this other one is like this sort of artificial bread and this artificial cheese like substance.

And you're saying they actually found that your metabolism like slowed down by half. With this ultra processed food, so exactly the same number of calories. It looks the same on the outside, but your body is responding really differently. And I think it's another example about how like just thinking about calories clearly doesn't help us to understand what, what happens and how the food we're eating is having this profound impact on us in a way that I think many of us didn't realize.

Then I think we talked about ultra processed food and the way that it affects us. And you know, one of the things you both talked about is the way that it's like baby food. So you like eat it and it, you don't even realize you're full and it gives you like this intense flavor, but then it disappears. You have to like keep taking one. And that these, that these companies even proudly advertise the fact that it like bypasses all your controls and you just can't stop. So there's something quite wrong about that. And then Tim, you explained that for you, a lot of the reasons why you, you think now this ultra processed food is so harmful is the way that it sort of messes up our microbiome.

And, I have to say, when you describe the food being full of glue, I don't know about you, but I don't really like the idea that my food is full of glue. It's definitely not like a big ingredient that they put on the front, but like these glues and sweeteners are somehow affecting the microbiome and they can't cope with it, and then it's sending these chemicals that are sort of messing up our microbiome. But then we did come to some like really positive, actionable advice. And I love the fact it's not just about food. And so Shawn, I think you said like sleeping better, that there are these experiences that show that like sleeping better can have a profoundly positive impact on your metabolism. And you said if you're just gonna pick two, so you have a whole book, I'm sure with many more clues, and we'll have a link to that in the show notes. But if you wanna think about two tech curfew. So get the screen turned off before you go to sleep. But be honest, no one likes a curfew, so you need to replace it with something better.

So how do you find something else to do in the half hour before you go to sleep that sort of unwinds. And I think I'm gonna really think about that. I think that's really interesting. I'm also gonna make sure my wife listens to this bit 'cause we have a constant row about the fact that she brings her phone into the room. And she will never listen to me, but maybe she'll listen to you, Shawn. And the second one is sleep sanctuary. So don't associate. The place you go to sleep with where you are working, like keep that separate. Otherwise your brain is sort of gonna start immediately thinking about things, which I, I love as an, as an idea.

And then we came back to food. And Tim, you said like your number one tip for metabolic health actually is to avoid foods that peak your blood sugar. That actually that sort of spike in blood sugar and collapse is the very particular thing that you're concerned around metabolic health as that means you really want to swap out foods that are leading to these really big blood sugar spikes. And we talked about some of those earlier in the conversation that actually just 'cause they're brown doesn't mean that they don't spike your blood sugar. And that what many of us who are in their forties or over. We're told about this food pyramid is full of foods that we're told are healthy, but actually, you know, if you eat a lot of brown spreads spikey food, you're gonna have these big spikes.

So you just need to moderate that. The biggest place to fix this is your breakfast. 'cause many of us don't realize just how sort of bad our breakfasts are for us in terms of those blood sugar spikes. And so if you wanna be like Tim, then you wanna have like much more high quality fat rather than sort of this low quality carbohydrates. And so you went full fat Greek yogurt. And Kefi and Berries and Daily 30 to add all the sort of the right plants on top and that powers you for the through to lunchtime.

DR. TIM SPECTOR: It's done pretty well so far. Yep.

JONATHAN WOLF: Brilliant. Shawn, thank you so much. I can tell there's many other things we could have covered, so I, I hope we can get you back in the future.

SHAWN STEVENSON: It would be an honor. This has been awesome.

JONATHAN WOLF: Thank you so much. It's been so much fun.

SHAWN STEVENSON: 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. Make sure to share it out with the people that you care about. Of course, you could send this directly from the podcast app that you're listening on or pop over to social media. You could share it there as well with all your friends, family, and community. And if you'd like to connect more with Dr. Tim Spector, make sure to check out the show notes. For the recent interview that I did with Dr. Spector as well as you could, feel free to check out the Zoe podcast. They interview some wonderful guests and have some incredible conversations, and there's just so much goodness out there for us to absorb.

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