The Obesity Epidemic:

A Special Interview with Zoe Harcombe

By Dr. Joseph Mercola

DM: Dr. Joseph Mercola

ZH: Zoe Harcombe

DM: Most people believe that losing weight follows a simple equation: eat less, move more. We’re going to tell you why that’s not right. Hi, this is Dr. Mercola, helping you take control of your health. Today I’m joined by Zoe Harcombe, who has written a book, The Obesity Epidemic, which is a magnificent work. That is the most comprehensive document I’ve ever seen that address that question I asked as we opened up.

She’s currently working on her PhD in Public Health Nutrition, which is an area that’s very fond to me. I’ve been passionate about both of those items. She’s, as I said, written this phenomenal book. If you’ve ever been curious why a calorie isn’t a calorie, this is the book you simply must read. Welcome, and thank you for joining us today, Zoe.

ZH: Thank you so much. Can I just say that how delighted I am to be talking to you today? You’ve been one of my heroes for a long time. This is a really special day for me. Thank you.

DM: Oh, that’s great. I never knew that. Why don’t you provide our viewers with the history of what interested you in pursuing this topic? I want to emphasize again that this is the most comprehensive and detailed analysis that goes into the historical reasons of how this came about into why this is simply not true.

ZH: Oh, that’s so kind of you to say. I could and probably should’ve written it about 20 years ago because I actually had an eating problem as a teenager as many girls do today, perhaps even more today than in my time. I actually disproved the calorie theory back when I was 15 or 16 [years old], but just didn’t realize that I’ve done it. I was not really overweight at all. Just, you know, sort of classic 15 or 16 years old, puppy fat. Just a little bit uncomfortable perhaps with how I was. But everyone else sort of said, “You just look normal.” So, I found a book that said if you cut back by greater deficit of 1,000 calories a day, either by eating less and/or doing more, then you will lose at the weight of one pound for every 3,000 and a half calorie deficit that you create. So, that should be two pounds a week.

I actually started this when I was only about 120 pounds, and you do the math. I should’ve been 10 or 12 pounds [lighter] at the end the year. Of course, I wasn’t. I had lost 20 to 30 pounds. I was quite unhealthy, to be honest, but I haven’t lost the absolute, classic 104 pounds of the formula said I should’ve lost in fat alone, let alone water and lean tissue. So, I should’ve known then that this is a heap of nonsense. But it took me another 20 or so years to really work it out.

DM: Terrific. So maybe you can go over some of the... What motivated you to write the book? I mean, because you anecdotally disproved it through your experience. Why did you choose to document it all and make it available for everyone?
ZH: Because to me it’s the million-dollar question. I mean, you look around and everybody here wants to be slim. You know, you do surveys and say to people, “Would you rather marry David Beckham or be slim?” They want to be slim. Or “[Do you] want to win the lottery or be slim?” They want to be slim. So, everyone wants to be slim, and yet two-thirds of Americans, Brits, Australians, New Zealanders, and the entire developed world are overweight, if not obese. So, it just doesn’t make sense.

As a mathematician, I gained entry to have a scholarship, to do Maths at Cambridge University, which is one of the things I’m very proud of. I actually switched to Economics when I was there, but my interest in numbers didn’t change. It was a logic problem to me, that this is obesity paradox. We don’t want to be overweight and yet we are. Clearly, what we are telling people, in terms of eat less, do more, if it were as simple as that, we wouldn’t have a problem, let alone an epidemic.

DM: Yes, indeed. It’s actually pretty basic or fundamental. It’s not just mathematics but it’s physics and the law of thermodynamics. It appears to me that most people who don’t believe this, fail to appreciate that it’s much more complex than just the calories of fat because there’s all these very intricate biochemical dynamics that occur, that it’s absolutely not accounted for.

ZH: Absolutely, yeah.

DM: Why don’t you expand on that because I thought it was a fascinating argument that you provided.

ZH: Thank you. In terms of thermodynamics, if you say to people at an obesity conference... I’ve challenged a number of dietitians. When they say you just need to eat less and/or do more, I say, “Why do you say that? Where does that come from?” And they seemed almost scoffing and get, “Aha, it’s the laws of thermodynamics, the laws of the universe. Aren’t you a city person kind of thing?” Then, if you go back to them and say, “Okay, so what are the laws of the universe that say about weight?” They can’t answer you because, of course, the laws of the universe say nothing or whatsoever about weight.

Thermodynamics is about heat movement: thermos = heat, dynamics = movement. It’s about the movement of energy. So, the first law says that, “In a closed system, in a thermal equilibrium, energy will neither be created nor destroyed. It shall be conserved.” Now, immediately you say the human body is not a closed system. We’re not in thermal equilibrium although we’re continuously trying to get there. So, then you have to bring in the second law, and people working in the field of nutrition never bring in this second law.

The second law is often called the law of common sense. It says: “Energy will be lost and energy will be used up in creating available energy.” That’s where it gets really interesting in the field of nutrition. Of course, we sweat, we lose liquids, and we lose fluid substances. We go to the toilet and [lose] all the rest of it. But far more than that, it’s the energy used up in making available energy. So, we know from some work in 2000s (around 2002), Eric Jequier, and then the work was built upon by Dr. David Feinstein.

Looking at the different macronutrients, we found out that for example, the thermic effect of protein, the energy taken up in making protein available to the body, is somewhere around 25 percent whereas the carbohydrates is somewhere around four or five percent. There’s a massive, competitive advantage at the outset. Even then, it’s not about the calories because you go back to the laws of thermodynamics being about energy.

I’m confident that the laws will not be broken in terms of energy in a human body, that energy says nothing about weight. We then introduced this calorie theory to say that there’s 3,000 and a half calories to one pound of fat. We introduced that conversion, and nobody in public health can tell me where it came from or prove it. I’ve got a great blog where it actually says, “The calorie theory: prove it or lose it. Stop using it unless you can prove it.” And they can’t prove it, so it’s time they stop using it.
DM: Well, I can tell you where they got.

ZH: Go on.

DM: From another author I’ve interviewed, Dr. Malcolm Kendrick.

ZH: Okay.

DM: I think he wrote *Doctoring Data: How to Sort Out Medical Advice from Medical Nonsense*. I’m sure you’re familiar with him.

ZH: Absolutely.

DM: And he told me they just made it up. They like to make all these things up. It just comes out of thin air. There’s no support and no science for it. They just make it up. Although... I mean, there is a science to say that there are that many calories in a pound of fat, but it’s a giant leap in assumption to say and to believe that all you have to do is burn those calories.

ZH: Absolutely.

DM: Another variable that comes into equation is the relative resistance to weight. Actually, I think it was... Was it Dr. Ancel Keys or was it another researcher who disproved, actually disproved this entire theory when they did this starvation studies, which I thought was fascinating. Why don’t you go into that because that’s another great piece of evidence?

ZH: Yeah. I mean, a brilliant piece of work. Ancel Keys. I think the best study that he ever did because he does get criticized when he performed it. But in 1945, America had just been joined into the war with the bombing of Pearl Harbor (that was around 1943) and he was looking at Europe and saying, “These guys in Europe, they’re introducing rationing.”

In fact, they’ve had rationing since 1941. When does rationing becomes starvation and what happens when humans don’t get the calories, protein, fats, vitamins, and minerals that they need for sustained period of time? So, he said, “Okay, I’m going to do an experiment where I’ll look at the impact of that kind of starvation on the human beings.” So, he advertised. He got 36 conscientious objectors to volunteer. He said, “Okay, I’m going to work with you for about a year. [I’m going to] monitor what it takes for you to maintain weight, then put you on this 24-week calorie deficit diet.” Quite generous by today’s standard. So, it’s about 1,600 calories, and they were to walk about 45 minutes a day.

Many dietitians today would say, “That’s not enough in terms of eat less, do more. You need to eat even less and do even more.” Within about 10 weeks, these guys have given up their studies on the campus at Minnesota. They stopped courting the women despite the fact they’re the only blokes still around in America. They’d lost interest in anything and everything other than food, when the next meal was coming from, and recipes. They’ve become obsessed. I mean, if ever we needed an insight into eating disorders, this experiment provided it. And they didn’t lose anywhere near the weight that would’ve been predicted by that formula.

Keys had to keep moving the calorie intake down and down and down. And about 24 weeks, even when he was taking them down below 1,000 calories a day, these normal-sized men were just not losing any more weight. He just couldn’t elicit any more weight lost. The minute he stopped the experiment and looked at what had happened with re-feeding, they all overreacted. They regained all the weight within the few weeks, and – here’s the interesting bit – plus about 10 percent more.
When we trace this over history, Francis Benedict did the first experiment in 1917. He put 12 men on a calorie-controlled diet. They gained it all back within a few weeks, plus a few pounds more. Then Keys did this in 1945. Albert Stunkard and Mavis McLaren-Hume looked at it in 1959 and concluded the same. People just don’t keep weight off when it’s been achieved through calorie deficit. Marion Franz looked at it 26,000 people, 80 different studies, brilliant paper in 2007, and again showed that there’s just this classic curve where the weight is regained and then a bit more. We have the study in the American Journal of Public Health just in July 2015 showing the same thing with 280,000 people. How much more evidence do we need that eating less and doing more just doesn’t work?

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DM: I thought it was really quite interesting as to some of the physiological explanations of why this occurs and contributes to the enormous complexity that disproves the calorie is not a calorie theory. When go on calorie reduction diet, there’s this tendency, especially in the starvation diet, for the body to survive. It wants to survive. It doesn’t know that it’s not going to get any more calories in the near future, so it shuts down essentially. The thyroid backs off and you’re not burning as many calories. It’s a simple component. It just absolutely messes with the thermodynamics of the situation. Could you expand on that because I thought it was an interesting observation?

ZH: Yeah, the whole sort of energy in equals energy out. I mean, it literally says, “Cut back by 1,000 calories,” and then the body provides 1,000 calories and you lose weight according to this formula that we made up. But the body has so many other options. The absolute first thing that the body’s going to do, the minute you try and eat less, the body’s going to try to get you eat more. The minute you try to do more, the body’s going to try to get you to do less.

There’s been a brilliant study in Plymouth in the UK called the EarlyBird Diabetes Study. They’ve looked at children. They’ve shown that whether you go to a really posh school where they have loads of games, tennis, and rugby, then they go to a fairly, ordinary school with just a bit of activity, and then they go to quite a deprived school where they really don’t have scheduled activity.

They put these really sophisticated pedometers on each of the children. They actually came to the conclusion that they do the same kind of level of activity as each other because the posh kids come home, and then they just bench out at home because they’re quite tired after the rugby match. Whereas the kids who didn’t have the scheduled activity go outside, kick a football around, cycle over to see their friends, or just hang around the streets causing trouble, and they used up the same amount of energy.

If you’re trying to do more, go to the gym. The body’s just going to make sure you don’t feel like doing the ironing in the evening or walking the dog or doing some gardening. The body will adjust at that top level. If you force it, if you have this incredible willpower, resist the urge to eat more, and really try and force yourself to carry on doing even more, the body can still then adjust, particularly women. One of the first things to go is the reproductive system. As the body shuts down periods, reproduction just says, “That’s completely unessential.” So, how many calories or energy did that need to sustain it?

People know that if they’ve had a serious weight loss and really gone quite underweight, you get extremely cold because the body just shuts off the heating system. Fine hair grows over the arms and legs of anorexics. It’s sort of fine down, like animal fur, which is the body’s way of trying to saying, “I’m going to protect you even though you’ve turned off the heating system.” You can shut down thyroid to an extent. You know, the body just goes down into basic protect mode. It didn’t just give up body fat. In fact, the last thing the body seems to want to do is to give up body fat. That is why I end up saying to people, “You could’ve work with your body and not against it if you do want to be slim and healthy long term.”
DM: Great. Are there any other factors that contribute to this or really provide the science to explain why calories are not a calorie that I did not include?

ZH: I don’t think so. Many of the interesting things we just seen like how they came up with the 3,000 and a half calories. I try to do it from piecing together a few numbers in terms of pound conversion to grams. Then, you get into looking at the calorie content of different macronutrients. That’s quite interesting, you know, that scares the life out calorie counters. Because when you say, “Look, all of this was found around 1901 with Wilbur Atwater and Max Rubner.” And they said “Well, we think protein is actually about 4.1[calories per gram] and carbohydrates are sort of about 4.1[calories per gram].” Fat, they said – and we’ve seen some work that Dr. Geoffrey Livesey did in 2002 – comes out of calories per gram any way between about 8.7 and 9.5. If you’ve been playing around with the equation, I could end up getting a pound equals 2,800 calories. I can end up getting a pound equals nearly 3,800 calories. And you think, “Well, that doesn’t make so much of a difference or because of...

You know, you’ll often hear this silly expression or just, you know... I think Gary Taubes, he makes a mockery of it by saying, “Oh, just 20 extra calories a day, suddenly I’m going to be 20 pounds heavier by middle age.” Well, get the formula wrong and you’re out by 80 pounds in any one year, and that’s how crazy it is. Guys, if you are relying upon calories down to that level and you think as the formula tells you, 50 fewer calories a day and you’ll end up five pounds lighter at the end of the year, you are dreaming in color. It just doesn’t add up at any level. Stop counting calories; it’s not doing you any favors.

DM: Yeah. I love those British expressions, “You’re dreaming in color.” Can you describe some of the variables, the factors that contributed to the strong adherence to this calorie as a calorie concept, and this eat less, move more? Why does that persist or why has it persisted in spite of all the scientific evidence and empirical observations to the contrary?

ZH: Wow, that is such a great question. I don’t know that I know the answer. I mean, one of the things that, as you mentioned earlier, Malcolm Kendrick is now looking into is why do people continue to believe what they used to believe when the evidence starts to become so overwhelming that what they believe is wrong. He said, in the particular area where he’s sort of an expert, in cholesterol... You know, it’s no more... It can’t be debatable anymore that cholesterol is so life vital. Trying to take cholesterol down to crazy levels is really not healthy. Blocking the mevalonate pathway with statins really, really, really isn’t healthy. The evidence is just overwhelming. Why did people then not change their mind? I don’t know.

DM: Well, I think I’ve got an answer to that. No reason for apology, but I think I have an answer. I think it’s an intrinsic human principle. There’s a book written by Prof. Robert Cialdini called Influence. It’s about 30 years old. But in that book, he describes the human tendency for consistency to have this sort of self-integrity, and if you violate anything that you’ve held firmly, there’s a strong, a rigid adherence to violate that. So, I think that’s an intrinsic principle so I can understand once they’ve adopted and accepted it...

But what I’m really curious about if you’re looking at the research is to why they even accepted this. Is it because someone came up and they made this theory up, and then they just said, “Oh, that makes sense.” They were simplistic and didn’t look into the subtleties of it, and it just got widely adopted. Will that be a fair assumption?

ZH: I think it is. I remember reading a British politician who’d been on one of the celebrity weight loss programs. I think they started probably over in the US, sort of fat club they called it, or fit club. They take at least either unknown people or celebrities, and try to put them on an eat less, do more program for a certain period of time. At the end of it, she said, “I’m going to write a diet book,” and it’s two-pages long. On the first page, it’s eat less; and on the second page, it’s do more. It has this sort of intuitive simplicity
to it, but that’s all it is. And at no level does it actually work because the body... You know, we would have not made it over the last three and a half million years, from *Australopithecus afarensis* Lucy, when our ancestors first walked upright. The only reason we’re still here now is that we and our ancestors have been phenomenally good at two things: one is gathering food and the other is conserving it.

We are therefore hard-wired to eat as much as we can get hold of and do as little as we can get away with. The idea that man actually evolved to run marathons, compete in triathlons, and all the crazy things that we’re doing today, just absolutely is not the case. Yes, we’ve evolved to be active enough to get the food to sustain life but beyond that, man was not going to run around the caveman camp and sort of burn off excess energy. If caveman came back in a time machine today and saw some of us at a step aerobics class or something, he would just be falling over laughing. [He would say,] “What are you guys doing using up this valuable energy that you just spent all morning going out to gather?” He wouldn’t just realize how easily available the food has become.

And just trying to eat less of that dreadful, easily available food is not the answer. It’s about eating better. It’s not about eating less.

**DM:** I think, at least I believe, in my clinical experience that another variable that’s left out of the equation is the timing of the food. Because going back to our ancient ancestors, they did not have access to food 24/7. They absolutely did not. Over these thousands and thousands of years, their genetics became optimized to having food at variable intervals, not every eight hours, certainly not. So, as an artifact of that, they gradually... When you do eat every eight hours, for months, years, or decades at a time and never miss a meal, your body forgets essentially how to burn fat as a fuel. It just becomes very inefficient. The enzymes that are supposed to do that essentially become inhibited. They’re shut down, and you don’t make it.

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So, even though you’ve got 10, 30, 50, 100, or 200 pounds of fat, you can’t burn it. You can’t burn it well or hardly at all. I don’t remember if you address it in your book but if you... If engaged in this process, I’ve just never seen anything more powerful to helping people get into a mode called intermittent fasting, where they’re only eating for a small window of time but have as many calories as they want, hopefully and ideally healthy calories. But there are some researchers who don’t even use healthy calories and it still seems to work. I’m wondering what your thoughts are on that?

**ZH:** Oh, absolutely. One of the key things that I do mention in this book is the whole concept of sort of the fat storage in the hormones and the role of glucagon in terms of releasing the triglycerides to get access to the fatty acids and the glycerol. Of course, the basic, fundamental principle, which is why again, this is a great area to go into because it’s another one that undermines the calorie theory: we cannot burn body fat if we got other fuel available. I mean, certain exercise exceptions, VO2max or whatever. You know, let’s forget those that apply to a tiny circumstance.

In the vast majority of the circumstances, if we got carbohydrate available, either readily available – because we’ve just eaten carbohydrates – in the blood stream, or readily available in glycogen of which we can store about 1,500 calories’ worth. For as long as we’ve got that, we have absolutely no need to break down body fat whatsoever. When I look at sort of two...

I mapped out a scenario in a presentation that I did recently. Looking at somebody who’s put in predominantly carbohydrate calories and somebody who’s put in predominantly fat, protein, meat, fish, eggs, dairy products, nuts, and seeds (what we call good calories), and of course, the body can use the good calories. Because the fat and protein are also used for basal metabolic needs, cell repair, fighting infection, building bone density, and all the rest of it comes a use for energy and that’s it.
So, when we’re telling our populations, in the US and the UK, “Have 55 percent of your diet in the form of carbohydrates.” Even a recently active person only needs about 25 percent of their energy in the form of something that can be turned into energy, and that’s either carbohydrates or fats. So, they still don’t need carbohydrate. It can still be fat, and we’ve given them 55 percent. The entire time they got glycogen stores available. Now, she says they may be carrying 200 pounds of fat, but we never give them the physiological environment in which they can actually access that body fat. We never let glucagon do its job and turn itself on.

Of course, what is type 2 diabetes, the partner of the obesity epidemic? I just say that type 2 diabetes is the body’s saying, “Enough is enough. I cannot cope with the frequency of the carbohydrate, the amount of carbohydrate, and the quality of carbohydrate. I’m done. Right now, I can’t cope with this anymore.” We are abusing our metabolism on a daily basis. You know, I wish it were eight hours. In the UK, dietitians are telling people to have three or four meals a day, snack in between... Some eat before bedtime, and some eat when they wake up. It’s like, “For goodness sake, we just got to stop eating just for a few hours.”

**DM:** Yes, to give your body a chance to recover and re-initiate the production of those fat-burning hormones. I couldn’t agree more. Type 2 diabetes and... Really, for the most part, obesity is relatively... Obesity is more complex, but type 2 diabetes is relatively simple and almost universally easy to cure. I’m talking cure.

I mean, it’s pretty rare where you couldn’t easily do it once you understand these principles. Because the body, it’s so simple and basic but it’s sad that the vast majority of clinicians don’t appreciate them. In fact, they do things that are actually absolutely counter-productive and accelerate people dying from this by giving them ridiculously, almost ludicrous or negligent malpractice. They give them insulin for something that they don’t need. They make the problem worse by giving a type 2 diabetic insulin. It’s just so preposterous to think that... I don’t know what percentage, but I think it’s a significant percentage of the clinicians do that. It’s just astounding.

So, you’re studying for a PhD in Public Health Policy. I’m wondering if you could comment on some of the regulatory policies in government that you’ve seen that have contributed to this mess.

**ZH:** Well, we followed you guys. We have to give you some of the blame here. You know, everyone knows 1977, Senator George McGovern...

**DM:** Oh, sure.

**ZH:** The one who created the legacy. He sure did create a legacy. I think he created legacies of global epidemics and the diabesity.

**DM:** That report was really stimulated from Keys’ work in the ‘50s.

**ZH:** Yes. Well, it’s interesting because having looked at the dietary guidelines for Americans, they don’t have to even reference the Seven Countries Study. It was almost like it become part of the fabric by then. So, there was just this sense that in some way heart disease is connected with fat. Therefore, we’ve got to get people eat less fat. It’s like there was nobody in the room with just a little bit of logic and a flip chart to say, “Hang on a sec, guys. There are only three things that we need. These are fat, protein, and carbohydrates.”

Protein in most natural diets tends to be fairly constant at around 15 percent. Even if you go a bit Atkinson or Paleo, it’s only sort of 20 percent. The two that vary are then carbohydrate and fat. I said, “If we’re going to tell Americans, and the UK just following suit, only half (30 percent of your calories in the form of fat) the necessary equivalent is that carbohydrates end up being about 55 percent of the diet,
which is back to what I was saying earlier, 55 percent. You’ve got to be some kind of triathlete or marathon runner to be using up that kind of constant carbohydrates and you’d still be better off having that in the form of fat, I would suggest.

That’s where it came from. It came from the demonization of fat. What I’ve been particularly looking at, in my PhD, the topic is to evaluate the evidence for the dietary fat recommendations. So, there were two: no more than 30 percent of the diet in the form of total fat and no more than 10 percent of the diet in the form of saturated fat. I guess the novelty of the approach has been to say, “Let’s look at the evidence at the time the guidelines were introduced.”

That was 1977 in the US and 1983 in the UK. Let’s look at it from the point of view of epidemiology which would only be able to suggest association, and then randomized controlled trials (RCT), which should be able to start getting into kind of cause and effect. So, it will be sponged into four parts: epidemiology at the time of the guidelines, RCTs at the time of the guidelines, epidemiology after or right up to present day, and then RCTs right up to present day.

I guess we wanted to start with what should be the most robust evidence just to get an idea of the territory that we’re going into because this is genuine PhD. You don’t know what you’re going to find. You don’t set off trying to find or to prove something. You set off trying to see what the literature actually throws up.

And there were some findings from the first RCT study that really, really did surprise us – me, sort of the PhD student, and my supervisors around. First of all, actually, the dietary guidelines have not been tested. There were only six studies that were available to the 1983 committee. One of those studies wasn’t even available to the US committee. So then, you had five. None of those five actually were even tested, 30 percent total fat or 10 percent saturated fat. That was one finding.

Another astonishing finding was that when you pulled all of those RCTs together, including the one available...

DM: Excuse me for a moment.

ZH: Sorry. Carry on.

DM: No problem. I just want to interrupt. An RCT is a randomized controlled trial?

ZH: Yeah. Sorry, yeah.

DM: Because many people wouldn’t know what that is.

ZH: Yeah, randomized controlled trial. Thank you.

The only six that were available, they were all pretty much secondary trials so they involved people who’d already have a heart attack. They were entirely male. So, we introduced these guidelines to the whole population without having tested a single female and there were only 2,467 men who had been tested. Now, if the evidence from those six randomized controlled trials had been overwhelming, absolutely overwhelming, like everybody drop dead in the controlled group and everyone lived 200 years in the diet group, you might then have said, “Okay, it would’ve been a reasonable thing to then extrapolate that to the whole population and introduce the guidelines.”

But not one study found any significant difference between the controlled group and the intervention group. Some of the actual conclusions in the papers were just breathtaking. The low-fat diet in 1965, the
The conclusion at the end of the paper is: “A low-fat diet has no place in the treatment of myocardial infarction, [which is] what we call now heart attack disease.”

The Corn Oil Trial said corn oil is not beneficial and may indeed be harmful. These studies were actually saying, “We haven’t found anything here, guys.” Actually, we do need to exercise caution in the interventions that we’ve undertaken. But it’s like none of these was looked at. None of these was taken into account. There was just this sense from, as you said, the Ancel Keys’ work [that says,] “Yeah, that’s somehow connected to heart disease, and cholesterol somehow plays a part, and they’re all kind of connected together.” And there we go. We’ve got a formula for introducing worldwide dietary guidelines. It was so not robust, it’s not true.

DM: Well, It’s become pretty clear and obvious that this experiment, essentially two generations, has been nothing more but an abysmal failure by the statistics you’ve quoted earlier, two-thirds of the industrialized world being either overweight or obese. So, from your observation and your study at this point with governmental policies, do you see a shift occurring? Do you see some appreciation or acknowledgement of this newer research in integrating them into adjusting these guidelines so they don’t have to continue down this crazy path for yet another generation?

ZH: If we had this conversation just last year, I think I would’ve been quite depressed and said, “No, I just can’t see any change.” But there’s a glimmer coming through, and it’s coming through from America. So, I’m kind of hoping that, again, you might lead the way and we might follow. But in the draft dietary guidelines for Americans because, of course, it’s 2015, it’s a year that fresh guidelines are issued. The last ones haven’t been issued in 2010. There are some signs. I mean, they’ve actually said... Dietary cholesterol, that little phrase is no longer a nutrient of concern. Why it was ever a nutrient of concern, I don’t know. Even Ancel Keys said, “Cholesterol in food has no impact on cholesterol in the blood.” We’ve known that all along. Even the guy behind all of this never worried about dietary cholesterol.

But then, the total fat is quite an interesting one as well because if you look at the draft guidelines, they are very... It’s conspicuous in their absence, is what we would say. Total fat just isn’t mentioned, and I don’t think they’re going to come out and say, “Guys, we’ve got it wrong. We’re really sorry. We’ve made two-thirds of you fat and sick. It’s our fault.” I don’t think they will ever be able to do that because I think there would be lawsuits, and I think there should be lawsuits for the damage that has been done to people.

But I think they’ll just kind of go silent on some things, and then other guidelines will come and it will sort of, you know... One day it’ll be almost as if we never said that to people. We never told them to limit their intake to 30 percent of total calories to fat, even saturated fat. There’s in fact fascinating stuff in those draft guidelines for Americans admitting that the evidence for saturated fat and deaths from coronary heart disease just isn’t there, exactly what we found in our February paper. The evidence for total deaths and saturated fat just isn’t there.

They still kind of think there’s something going on with saturated fat and coronary heart disease events. That, again, is so weak. It’s based on so few people, largely secondary studies. We cannot be adopting global dietary guidelines on the basis of such weak evidence. We’ve been doing it now for almost 40 years. We’ve got to stop.

DM: One of the reasons why saturated fat has been vilified for so long is it’s associated with the pernicious villain that in fact does cause heart disease, and that will increase your risk of premature death from virtually all diseases – heart disease, cancer, diabetes, and Alzheimer’s. That is trans fat, an artifact of industrialization. It’s been around for maybe 125 years or so. It’s associated with it, but it’s not causal.
It’s commonly known that association does not prove causations. And they never separated those two out, which is why it appears to be so vilified. But most of the new studies now appear to provide saturated fat with a reprieve, and it wasn’t as dangerous as it was previously thought. It appears to be more accepted.

You couldn’t tune in to a television station or a radio show or read a report on a newspaper that didn’t vilify saturated fat. I mean, everyone was against it. I mean, that was understood. It was given. So, if you opposed that, you’re looking like some lunatic.

ZH: I think that’s because people don’t actually understand what saturated fat is. When I looked back at the Seven Countries Study... I mean, Keys refers to things like cakes and ice cream and describes them as saturated fat, and we still do that today. There’s a program on last night in the UK that did exactly that. So, we got saturated fat from the diet, and they’ve taken the guinea pigs of things like cakes, biscuits, ice cream, and junk food, which as you say, would also have trans fats in there.

DM: And sugar.

ZH: Sugar. There’s a great paper. I think, somebody... Dr. Robert Lustig refers to it in an article that he wrote in The Bariatrician, I think, a while back. Somebody found a comment from Keys in about 1980 and said, of course, the issue is that saturated fat is so closely correlated with sucrose. It’s like, “No, it isn’t, not in real food.” I’m trying to think of a real food that would have sucrose and saturated fat. So you’re looking at a fruit, by and large, with a saturated fat content and you come up with avocado. That’s really not sugary. I don’t think you’ll ever give an avocado to someone and they’ll say, “Wow, that was so sweet. It was like a Dunkin’ Donut or something.”

People don’t know their macronutrients. First of all, you have to say that the only thing that would have saturated fat in it and not protein and/or carbohydrate would be an oil. Because when you’re looking at meat, fish, eggs, and dairy products, they’ve got... Meat and fish have only got protein and fat in them. But as soon as you start getting into dairy products, you’re introducing carbohydrate with the lactose as well. It’s just like, “Okay.” You know, just look at oils, and you are looking at pure fats. But, of course, this is so little now. Every food that contains fat, contains all three fats: saturated, monounsaturated, and polyunsaturated. There are no exceptions.

So, we have public health officials running around saying. “Avoid saturated fat and eat more unsaturated fat,” as if that’s actually possible. I did a paper in 2013, if you google my name, and I think it’s called “Food for Thought,” 2013. That’s quite a fun paper in food and nutrition sciences that looks at this. And it says, “Okay.” So, you take a typical steak. Nothing is more demonized than red meat. You know, sirloin steak, you can look this up in the nutrition database in the US, it’s 71 percent water. First of all, mostly water in its raw form, 21 percent protein, bits of other things, there’s about seven percent left that’s fat, and two percent is saturated fat. So, there is more unsaturated fat than saturated fat in red meat. Not the one who’s better or worse than the other, but just to set the record straight. Same in fish, more unsaturated, and same in nuts and seeds.

You know, there is only one food group on this planet... Coconut oil, yes it’s got more saturated fat as an oil. But there’s only one food group that has got more saturated than unsaturated fat, and that’s dairy products. If you really want to have pop at saturated fat, notwithstanding the dairy products have got all three macronutrients and all three fats, then let’s have a debate on dairy products. Let’s also bear in mind calcium, the [vitamin] D nutrients, bone nutrients, osteoporosis, and all the other things that we need to bring in to the argument if you guys want to start demonizing dairy products.

There’s even, of course, eight percent, “Oh, you know, saturated fat is really bad but not dairy because dairy, of course, is thoroughly marvelous.” It’s like I should just [say], “I don’t know what you’re talking about.”
DM: So, do you perceive any hope or transition towards more adoption of these observations that you just mentioned that professionals are starting to integrate this?

ZH: In the US, yes, I do see there’s a glimmer with those dietary guidelines, but in the UK, no. I mean, the response to our paper in February was quite extraordinary.

DM: Why don’t you comment on that? It would be interesting.

ZH: Yeah. I mean, *Public Health England (PHE)* journal was writing to me. I’ve got their PR department writing to me saying, “Are you planning anymore PR?” I said, “I don’t do PR. I just write papers. I don’t even write that many papers. I’m busy working on a PhD.” I’m not a sort of a hundred-paper person by any means. But I wrote the paper. The media obviously liked the idea. One columnist who I really loved over here, Janet Street-Porter, she really went to town on it and said, “What? All these years I’ve been avoiding all the good things in life, butter, egg yolks, and red meat, all for no reason whatsoever,” and then made it sort of a gender issue as well. All because you’ve studied 2,000 and a half sick men, and then decided that should be translated into what I eat.

They just like the idea that it wasn’t evidence-based. It wasn’t. There is no other way of putting it. The dietary fat guidelines that were introduced where not based on robust evidence at the time.

DM: So, when you published your paper, was it widely ridiculed or was it embraced by the columnist and the media?

ZH: The media loved it. I mean, the media really did run with... We got the guidelines wrong. The guidelines were evidence-based. Of course, the media being the media, they also ran with some things that were not based on the papers. Some of them ran with headlines like, “Fat is good for you. Butter is good for you.” It’s like... Actually, we can’t say that either. I intuitively believe that it is just because I don’t think Mother Nature is out to get us. I think if all the foods that contain all the nutrients we need to live also contain all three fats, it wouldn’t make sense for Mother Nature to put something in steak that’s trying to kill us and something in steak that’s trying to save us at the same time. It’s just... It’s like paranoia. It’s absurd.

[----- 40:00 -----]

DM: Yes, indeed.

ZH: But they ran with things like, you know, “Eat fat, live longer. Butter is good for you.” It’s like, “Guys, we can no more say that fat is bad than we can say that it is good.” The evidence just was not there. It was inconclusive. Lots of publicity, lots of people in our kind of world, the real food world absolutely loved it. The people wanting to say let’s do more, eat starchy carbs, and avoid red meat; they hated it. But they’re going to hate anything that comes out this evidence-based.

DM: Yes, indeed. The devil’s in the details. One of my favorite ways of analyzing bits of information is to put them against the template of our ancestral practices. With respect to butter is good or fat is good and eat more, well, it depends. It really depends on the quality. Is it similar to what our ancient ancestors were eating or is it this industrialized version that’s highly processed, distorted, and not really reflective of what our biochemistry is designed to metabolize?

Science is not going to get to that level for decades, I believe. Because they just don’t... I don’t know or understand the reason why, but they don’t seem to adopt that principle in their analysis and design studies that incorporate that that can really tease out the details. Because it’s possible to do. But if you’re not going there, if that is not your premise, you’re not going to look at it. You’re not going to sort through it.
You’ll come up with this big mess that you really can’t make any sense out of or really get a definitive answer.

I’m wondering what your recommendation is, having struggled for this as a youngster and then certainly studied the literature very thoroughly. What advice [you can give] for someone who is struggling with weight, maybe not massively overweight but wants to adopt these principles? What conclusions have you reached?

ZH: Yeah. The number one principle that I would say to anyone... Your first basic principle if you do nothing else is eat real food.

DM: Yes.

ZH: Eat food in the most natural form that you can find.

DM: Such a simple principle.

ZH: It is. Eat real food, and then... I’ve got nieces and now they’re six and nine. But in about five, even seven or eight whatever [years], I would sit them down and sort of... Let’s see if we can work out what real food is. So, oranges grow on trees, cartons of orange juice don’t. They can get that. Fish swim in the sea, and you put a picture of a packet of fish finger in bread crumbs, and goodness knows what else are swimming in the sea, and they giggle. [I’d tell them.] “No, no, that wouldn’t swim in the sea.” [I’ll ask them,] “What about a meat stick that you find in colored packaging marked in on the front, would you see that in the field or would you see a cow?” [They would answer]”You’d see a cow.”

Well, they can get it. [They’re] five, for goodness’ sake. It’s not a difficult concept. We’re very lucky we where we live in Wales. We’re literally surrounded by sheep and cows. You know, I’d go dog walk in the morning and I see my food for the day. We have fantastic vegetables and stuff around us. I know exactly where my eggs come from. I’ve met the chickens that deliver them and the little boy just brings them down the road and delivers them every Friday. So, you know, we’re very fortunate. But every person can find the best food that they can source locally and within their budget.

Some of the best quality foods on the planet are also the cheapest. Liver, for example. I often say, “If anyone can find me a more nutritious single food than liver or some of the kind of awful... I’d love to hear about it. Because at the moment, liver is my winner, and it has been for some time, liver and onions. Sardines are among the most nutritious of the oily fish, and they can be very, very affordable. Tinned [sardines] is absolutely fine because you get the bones and the skin as well, and that is great for the bone nutrients, calcium, vitamin D, and so on. So, first point is always eat real food.

The second principle, and we touched on this earlier. I actually was saying to people originally [to eat] three times a day. Because I was very aware that when people would come to me or other people who give this kind of advice, they’d been in the pattern of grease and eating every couple of hours. You know, this crazy advice of keep your blood sugar top or whatever. It’s like your body will do that naturally. Just leave it alone. Stop chucking in nonsense all day long.

So, I’m saying, [eat] three times a day because I was actually trying to get them away from [eating] six or eight times a day. I would now say two or three times a day or a maximum of three times a day because we have to cut back on the number of times that we’re eating.

I would say those two principles alone would get most people, most of the way there. If you’re then still struggling, that’s when I’d say manage your carbohydrate intake. So, even what we think of is good carbohydrates, even dairy is too high in carbohydrate for some particularly carb-sensitive, insulin-resistant people. You know, if you’ve tipped over into type 2 diabetes already or morbid obesity, chances
are you really are going to have to manage your carb intake to quite a tight level. And that’s it. You know, we have another document that was produced in the UK in July. I don’t know, 580 pages or something of nonsense. Like they only needed three words: eat real food.

DM: Yeah. Well, I couldn’t agree more. After studying this for many decades, I come to same conclusion. It’s your first principle, to eat real food. It couldn’t be simpler. Dr. Lustig adopted that. That’s his mantra too. And that’s the first one. But I would add two more to the three you mentioned. One is to look at the timing. If you’re struggling with weight… In fact, maybe consider… I used to say skip breakfast, and that’s good for most people. But once you’re fat adopted, it’s probably better to have breakfast and skip dinner because then, you’re going for a longer time and maybe have your last meal at three or four. So, look at the timing. Also engage in a regular movement practice.

ZH: Yes.

DM: So, that’s going to complement things. Certainly, it’s not going to work without the first four principles working but that really… Everything starts going together because you’re replicating what your ancestors did. You were moving around all the time. You weren’t sitting down in front of a desk or watching TV all day.

ZH: Yeah.

DM: That’s just good. I mean, it really is the foundation. It’s obviously… This is not 100 percent, but it’s pretty close.

ZH: Yeah. It really won’t get most people most of the way there, and that’s so far ahead of where we are at the moment.

DM: And it really is not that hard. It is not… The fascinating thing, the one I mentioned, is it is not just obesity. Obesity is kind of the marker or being overweight. It’s all the other chronic degenerative diseases: arthritis, diabetes, cancer, Alzheimer’s, and peptic ulcer disease. You name it. All of those are more likely to improve. And even bizarre diseases. The first step is to get those four principles engaged. There are other subtleties for other types of problems like autoimmune diseases where you want to look at vitamin D and getting into sunshine. Again, it’s another, more ancestral principles.

ZH: Yeah.

DM: So, is there anything that we didn’t emphasize that you like to review or comment on?

ZH: I guess the only thing is the conflict of interest because when we talked about…

DM: Oh yes, I forgot about that. Why don’t you go into that?

ZH: Why is this is not going to change. I’m saying that the UK is very much likely behind the US at the moment. The UK has something that it calls the Responsibility Deal. We call it the Irresponsibility Deal. It’s actually stated intent of the government to work with the fake food industry, to try to do something about obesity.

There’s a professor in the UK said, “You may as well put Dracula in charge of the blood bank.” It really is as crazy as that. I have a little chart. So hopefully this will work just holding that up a second. You can shout and tell me if it does.

DM: Well, you can give us a copy and we could put it into the interview.
ZH: Yeah, I will do. That’s the conflict of interest. If the American Dietetic Association... Those are the organizations behind public health dietary advice.

DM: Sure, absolutely. Sadly, it’s not just true for the food industry. It’s true for the drug industry and almost every... The military is the revolving door between federal regulatory agencies and industry that really allowed corporations to essentially take control of this. We don’t really have a government of the people. We have the government for the corporations now. The result is that the small groups of special interest are benefitting quite dramatically at the expense of vast majority of the public.

ZH: Yeah. It was interesting to see Michelle Obama when Barrack Obama came into power, and she wanted to do something about obesity, childhood obesity especially. The early message is very much about we need to be eating the right things and moving away from all this junk. That changed so quickly. It was almost like she had a phone call from someone saying, “Hey, remember who funded your husband getting into the campaign.” Suddenly, it became “Let’s move.” Moving is a good thing to do, but you can’t outrun a bad diet. If the American children are still having the burgers, the chips, the milkshakes, and the ice cream, there’s no amount of exercise that they can do that’s actually going to prevent obesity given a bad diet.

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If the conflicts are just endemic, they’re absolutely everywhere. This has been heavily defended by people who’ve got ulterior motives. Therefore individuals are just going to have to do this for themselves. Every one of us can bankrupt the fake food industry, put the drug companies out of business by taking charge of our own health, and say, “We’re just not having that junk.” Then, we won’t need the drugs and none of our hard-earned money is going to go to Coca-Cola, Pepsi, Hershey bars, or anything else. It’s down to us.

DM: Yeah, we can. We can be of enormous force. If once we understand, and a significant number of people realized of this conflict of interest and misinformation we’ve been given, many times by intention, many times by deceit or fraud, and other times just by ignorance. In my perception, it’s that we are in fact making a dent and that we’re seeing major corporations, food corporations like McDonald’s where sales are going down pretty dramatically. Sale of diet soda is decreasing by six to 10 percent. We’re seeing some glimmer of hope. I’m wondering if you’re seeing the same thing or if you’re more pessimistic about the likelihood that we’ll be able to make a change.

ZH: Not yet. I do think it is the case of the UK following the US. Again, we’ve seen the Coca-Cola sales going down and McDonald’s sales going down. We tweet them. We get very excited. But then we kind of look at the UK and no, we can’t actually see anything yet. I think we’re sadly going to lag behind you a little bit again, but there is some hope.

These organizations are starting to be hit in the pockets and the profit, which is where it’s going to hurt. Of course, they come back and start trying to get into the markets for water. We can get water when we turn on the tap. As long as it’s not fluoridated, we can still drink water. There’ll be lots of movements that go on over the coming years. I’d say we need to do our bit and just take charge, and whatever they do, let them do it. It has no impact on me what Coca-Cola does because I don’t drink the stuff.

DM: Yeah. Well, I think the key is motivating, inspiring, and educating the public so that they make these decisions with their pocketbook, because these corporations are not going to disappear. They’re not going to die. Most of them are not going to go bankrupt. They just simply aren’t. If they’re going to persist, wouldn’t it be nice if they recognize this new market need and shifted their offerings to provide healthier alternatives.
We’re seeing something interesting in the fast food industry. In the US, at least, we’re seeing a really exciting trend that there’s this movement towards removing artificial ingredients and having real flavor. I mean, in some of the very big chains like Chipotle’s and, I think, Papa John’s for pizzerias, which is the most common in the United States. That movement is stretching. There are number of others and their names escape me at the time, but it’s an exciting trend that’s starting. I think it’s largely related to people becoming aware of the importance of this issue. Anything else you’d like to mention?

**ZH:** I don’t think so. This has been real fun actually. We’ve covered a lot of topics.

**DM:** Yes, indeed. Well, again, if you are interested... If anyone’s interested in *The Obesity Epidemic*, the title of your book, magnificent book, I strongly recommend it. It’s really a wealth of information. It’s almost like an encyclopedia of sorts. It will give you the data that you need to defend against anyone who’s given you a hard time and still entrenched into this old paradigm, who believes in this nonsense that all you need to do is eat less and move more to lose weight. Because that’s just simply not true.

The real answer is what we discuss today, and it’s really pretty simple. It’s not necessarily easy to apply, but it’s simple and easy to understand, certainly. I highly recommend your book. It’s a great work, and I’m glad you did it.

**ZH:** Thank you. It’s very kind. Thank you.

**DM:** I look forward to you getting your PhD.

**ZH:** Me too. That will be great.

**DM:** Well, thanks again.

[End]