Episode 866: The Truth About Fat, and the Corruption of Nutrition Science

Guest: Nina Teicholz

WOODS: I just got done telling people about your book. I love it; I'm very interested in it. I don't know how I could possibly not have been aware of its existence. I try to be reasonably well informed. This thing was a big deal; it was a bombshell. Somehow I missed it. I don't know what to say other than I won't let it happen again. But I've really enjoyed looking through it.

I have some interesting questions for you that maybe you haven't been asked before, but let's start with one that you have been asked, no doubt, which is: if the thesis of your book is true — which, by the way, I'd like you to lay out in two sentences — how did we ever get on a path that was so wrong?

TEICHOLZ: So the thesis of my book is that the idea that fat, including saturated fat, which is the kind of fat found mainly in animal foods and cholesterol, are bad for you and cause heart disease — that hypothesis was always based on weak science, has since been thoroughly disproven, and so the whole basis of our nutrition policy in this country has been a mistake and that this has been going on for 50 years that America has been subjected to this diet that has made us fat and sick and has been based on bad science.

So how did this happen? Well, that's really the incredible story of my book, which, my favorite description of it is as a nutrition thriller, which is what *The Economist* called it. But it's an amazing story of science; how science is, in this field at least, more political than scientific; how crusading scientists who wanted their idea to be right basically got it implanted into the American Heart Association and National Institutes of Health. Our whole government got behind if based on extremely weak science. And then the short story is it got completely institutionalized, and now we are having a mighty difficult time backing out of it.

WOODS: All right, so there's a lot in there. Let me just ask you quickly about the time period when this science begins to, let's say, ossify: the early 1960s, particularly after Eisenhower I guess had had a heart attack and heart health was very much in the news. You talk about some of the research that is said to have gone into drawing these conclusions, and at least some portion of it involved evidence drawn from people who inhabited the island of Crete. And I find this particularly interesting because the evidence there seemed — the way it was drawn seemed to be rather oblivious to some major — I don't want to steal your thunder. Tell me the whole Crete story.

TEICHOLZ: Well, the Crete story really ties into — if there's a villain in this story, it's a scientist named Ancel Keys, who was a pathologist at the University of Minnesota, and really it was his idea, which was called the diet-heart hypothesis, that saturated fat and cholesterol are bad for health. He came up with this idea in the 1950s, and as you say, the whole nation was riveted on the question of what causes heart attacks because President Eisenhower himself had had a heart attack, was out of the Oval Office for ten days — just imagine — in 1955. And it was a relatively new disease. People's grandfathers hadn't had it, and everyone wanted to know what caused heart disease.

So Ancel Keys came up with this idea, and then he set out to prove it. He was basically convinced of his idea before he had any evidence, and one of the things — his major study trying to prove it was called the Seven Countries Study, this famous study. And one of the places he visited was the island of Crete, where he — this is in the late 1950s, and it's post-World War II, Greece has been devastated, people are not eating the diet that they normally eat because they're poor and their country has been ravaged by war. And he sampled the diets of only 30 to 33 men, and they became his start subjects. He decided that — they ate very few animal foods and they had very low rates of heart disease. They seemed to be very long-lived, and so based on them and one or two other populations, he kind of concluded his theory was right.

Well, I took a deep dive into this study, in addition — One of the things I did in my book was I refused to rely on any kind of summary papers or review papers. I had to go back and look at all of the original data myself, because one of the things I uncovered in my research is there's so much, basically, lying about the data or misrepresentation of it. So I discovered that not only did these people not eat any saturated fat; they didn't eat any sugar. Zero sugar. So sugar is now considered a major contender for what is promoting heart disease, and Keys knew this was a possibility, but he ignored it.

Another thing is that he went and visited this population three times. One of the times he showed up was during Lent, Greek Orthodox Lent. Do you know what you're avoiding during Lent? All animal foods. It's a strict Orthodox Lent. And so he drastically undercounted the amount of saturated fats they ate, meaning he may have gotten a completely wrong picture about their diet.

WOODS: That's just astonishing to me that you could make a mistake like that. Or I guess he acknowledged it, but didn't think that it really skewed the results much.

TEICHOLZ: He did what he did with all of the data that didn't agree with his idea, which is he just dismissed it. He just said, Well, we know this happened but it's not important. So you know, one of the things that I went back and I showed just how important it was. I went back to find what was Greek Orthodox Lent like in the late 1950s. They didn't just avoid meat; they avoided all dairy, they avoided fish. I mean, it was a very strict fast. So this is what Ancel Keys did with his science. He also for that study really cherry-picked the countries that he visited. He visited countries that he knew would fit his hypothesis, and he avoided places like France — the French paradox, right? But it's not just France: Germany, Switzerland, they all eat a lot of saturated fats and back then had very equally low rates of heart disease as in

Greece and Italy. But he didn't go to those countries because they would have blown his study.

WOODS: But this — okay, I get this story, and yet it's hard to account for how the conventional wisdom that was thus produced persists over time. Surely somebody is going to blow the whistle on this instead of everybody going along with it. In fact, in the TEDx talk of yours that I watched just this morning, you were saying that by the time you get to the mid 1980s, the dissenters have been completely marginalized and the new orthodoxy is everywhere. You can't get published if you're a dissenter. This is not how my middle school textbook taught me science proceeds. I learned that Francis Bacon taught us in the 16th century that you gather data and you then examine the data and you come up with hypotheses about it; you test the hypotheses — and it's all very dispassionate. And yet that is not — I sound like somebody from Mars describing science compared to how this was carried out. How and why would that be?

TEICHOLZ: You know, I had the exact same impressions of science when I started in on this research about 15 years ago, and what I realized was it's mayhem out there in the world of nutrition science. So one of the things that goes on, which was astonishing to me and continues today actually, is just flat-out bullying in nutrition science, where Ancel Keys and his colleagues — so it's not just him; it's his whole group of colleagues — they come to control the most powerful institutions: the American Heart Association, which is really the first one in the game, and the National Institutes of Health, which was very — and still is — very closely allied with the American Heart Association on this issue.

So they controlled all the bodies and they all came from elite East Coast universities and they just controlled the agenda, and anyone who had a counter theory to theirs or who critiqued their theory saying — there's a case of a Texas A&M professor who critiqued their theory, saying I don't think the evidence holds up — they would pound so hard on those scientists, dozens of pages of rebuttal and accusing their work of being full of errors and literally accusing them of lying.

And there's quite a few instances that I documented, these professors who had gone up against the orthodoxy literally just got out of the field because they felt it was so unrewarding and they couldn't get any money to do research. There's a story that I tell of one of the most prominent critics of Ancel Keys who was one of the directors — a prominent scientist, a biochemist from the University of Vanderbilt who had been one of the directors of a famous study called the Framingham Study. And he was at the National Institutes of Health one day, and the secretary calls him out into the hall and says, If you continue your opposition to Ancel Keys, I'm afraid to tell you you're going to lose your research grant. And shortly thereafter, he did.

So this is the way that nutrition science has proceeded. And I have to add again, the way it still proceeds today. I mean, the stories that I could tell you about what's happening today are similarly shocking.

WOODS: Well, but I think now it's easy to understand how a lot of people would be skeptical of the scientific consensus in other areas, because they may well say, Nina has come across some really important information here in nutrition science, but there's no reason to think that human pettiness is confined to nutrition science and

that maybe the way science operates is really a means whereby the conventional wisdom becomes accepted by everybody. If you want to get government grants, you'd better be adopting the conventional wisdom. You'll be shut out, you'll be ridiculed as an idiot, you're anti-science, you're anti-evidence, and your career will be destroyed and you'll live marginalized — that doesn't sound all that unusual to me. I hear that all the time.

TEICHOLZ: Yes, sadly I think it is true and I think it's especially true when the federal government gets involved in doing the science and having a stake in the science. So the federal government got involved, not only the National Institutes of Health funded all the research in this area and they adopted the hypothesis that saturated fat, fat, and cholesterol cause heart disease, but they also then started implementing — starting in 1980, they started implementing the Dietary Guidelines for Americans, which is this huge — it's the most important nutrition policy in the country and it affects everything, everything everybody eats.

And not only that, but it drives all of the feeding assistance programs, like school lunches, feeding programs for the elderly, military rations. Okay, so now those feed one in four Americans each month, so now you have a huge interest by food companies and grain and soy and all these different industries that have an interest in influencing the dietary guidelines because their contracts, all their food contracts for all these programs depend upon — if the government's recommending, as they did in this last go around in 2015, the dietary guidelines, they increased the amount of vegetable oil they recommend daily from 24 grams to 27 grams. Well, that means a lot to the vegetable oil companies who get those contracts. So the whole thing becomes entrenched, or captured is another way of putting it for people who follow government.

WOODS: Well, having said that stuff about science, let's ask some more questions dealing more with the substance of your claims, because it seems like every — I don't know, at least every couple of years, I read headlines about some new study telling you you shouldn't eat red meat. We hear this all the time. You shouldn't eat red meat.

Now, I wonder if there's any way in these studies — I don't know any of the details; I don't know the methodology used. But is there any way to correct for the possibility that a lot of people who eat a lot of red meat would tend to be people who in general ignore the experts' health advice, so they just have unhealthy lifestyles in general. They're ignoring people who say don't eat red meat, but they're also ignoring people who say don't sit on the couch all day, don't do these other unhealthy things. So in other words, you're dealing with people who are just plain unhealthy and this may skew the results.

TEICHOLZ: That is absolutely true, and that is the kind of bias that one attempts to correct for in these studies, but — and you're talking about a kind of study called an epidemiological study that can only show association; it can't establish cause and effect, and it's a very weak kind of study precisely because there's all of this kind of confounding. Who's eating red meat? Other than the pale folks, it's really mainly people who completely ignore everything their doctor tells them. So of course they're less healthy in a myriad of ways you can never measure or correct for, and I think that is in fact what we're seeing in those red meat associations. And even then, the

associations are absolutely tiny. They're so small. They're below — their numbers are below what would ever be considered acceptable if it were a drug trial. It would just be considered — It's just so small as to be considered just noise.

But there is a kind of — I think in this scientific community, there's sort of an anti-meat bias and a pro-plant-based bias that has come about for a whole number of reasons. And there's a reliance on this weak science to make policy, which is really not what is supposed to happen. You're supposed to rely on more rigorous kind of evidence called randomized controlled clinical trials, where you can actually show cause and effect. And those really haven't been done on red meat, which is surprising given how much we hear about how red meat is bad for us. But the actual evidence base is remarkably thin. I mean, tiny. And there have been no randomized controlled clinical trials in the vegetarian diet. So even though we're told — we're pretty much continually told that that's the most healthy diet. So those recommendations don't actually reflect the actual base of evidence out there.

WOODS: But you know, every time I do an episode — which is not often, but every time I do an episode that calls for or in some way advocates a diet that would be similar to Mark Sisson's Primal Blueprint, I do get a lot of vegetarians and vegans vigorously and briskly protesting in the comments section. And boy, they sure seem to be pretty well read.

TEICHOLZ: They have as a database those epidemiological studies only. They really don't — there aren't any clinical trials, randomized controlled clinical trials to support their beliefs. There was one by Dean Ornish on 20 men. Actually, the outcome of that was they had two deaths in the group that was on his diet and one death on the other group that was not on his diet. So yeah, I don't know why — I think there's a number of reasons to be vegan or vegetarian and they are all many reasons that are legitimate, but if you're doing that diet for health you just have to know that the actual rigorous evidence base for that diet to show that it's healthy and can prevent disease is almost really nonexistent.

WOODS: All right, let's pause to thank our sponsor.

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For a long time, I think everybody was under the impression that fat — as you know, fat's a bad thing. Got to avoid fat, so therefore you've got to eat these meals that leave you hungry and it's just miserable and awful, the diet regimen a lot of people wound up on as a result. But then people started saying there's good fat and there's bad fat. So for instance, if you're eating olives or an avocado, you shouldn't reproach yourself that you're eating fat. These are good fats. In fact, as a kid, I didn't know any better. Like when I was 10 years old — maybe not 10, but 15, and I would look at a can of olive and there was so much fat in them, I thought, I guess I shouldn't — what an idiot. I wasn't eating olives because of this sort of advice. So we got this bifurcation of good fat and bad fat. What do you think — is there any bad fat?

TEICHOLZ: You know, I just want to say that I sympathize, because I used to be a very low-fat vegetarian for nearly 20 years, so I know better — I poached all of my fish because I couldn't stand the thought of putting even a little olive oil on my fish.

So the story is really upside down from what we've been told, and I know that seems almost impossible to believe. It really did take me a decade of research and reading all of the studies to really kind of come to the conclusion that I did. But first of all, fat is not bad for health. Fat is actually what fills you up and satiates you. So more fat in the diet, diet's that are higher in fat consistently make it easier for people to lose and maintain weight, because fat is just satiating in a way that carbohydrate-based foods like bread and pasta and popcorn, they're not satiating and people tend to overeat on those foods.

So good fats and bad fats, I would say that it's almost completely turned upside down. I mean, vegetable oils, which is what — we're supposed to have margarine instead of butter and replace whatever we can with polyunsaturated vegetable oils. Those are an industrial product that go through like two dozen steps, including with chemical solvents used to prepare them. They are not a natural product and really only came into the food supply first in the form of Crisco in 1911, and their rise in the food supply, which has been astronomical — I mean, greater than any other food over the 20th century, which has been the increase in vegetable oils — it perfectly paralleled the rise in heart disease for the first 30 years. So there's a plausible case to be made that vegetable oils might even be the cause of that.

But I think that — They tend to be highly unstable. They contain trans fats, or they did. And they tend to oxidize and cause inflammation. That's I think one of the scariest parts of my book when I discovered, actually when they took trans fats out of vegetable oils, what they got are far less stable oils that oxidize more rapidly and cause massive inflammation, and massive inflammation being one of the chief contenders for what causes heart disease.

So I would say that, although we're told to eat polyunsaturated vegetable oils, really the evidence does not support it, and that better fats are solid, stable fats that do not oxidize. So paradoxically, that's butter, even lard. Lard is what your grandparents used to cook with before they switched to Crisco — or tallow. I mean, butter and lard have been the chief cooking fats really since ancient times.

So it's a different story than what we've been told, but I think it's truly supported by the evidence, and there is a really growing movement now — all over the world scientists are really examining the data on fats. And amazingly — and nobody's really heard of this, again due to this political nature of nutrition science and what actually gets out there — groups of scientists all over the world have reevaluated the data on saturated fats and found really they do not cause heart disease, and either they're not associated with cardiovascular disease or they don't cause it.

So those fats, my recommendation is just let them out of jail. They are parts of many whole and healthy foods. Dairy, meat, eggs used to be the centerpiece of all diets for all human cultures, and they're healthy and they contain a lot of nutrients so we shouldn't avoid them.

WOODS: You know, you were saying about how you hesitated to put butter on things, it reminds me of the years and years I went not putting butter on my pancakes, thinking, Well, at least I'm not putting butter on them so I can congratulate myself for

that. But it turns out that butter is better than the pancakes, I now know. It would have been better to eat the butter than the pancakes.

And I told you before we went on I've had Mark Sisson on the show, I've had Robb Wolf on the show before, and for a while, I did follow their — the Sisson version that allows dairy. I followed that for a while, and I kind of fell off it because one of the promises they made didn't come true, which was after a while you won't even miss pasta and pancakes and whatever. And I guess I must have liked those things a lot more than those people did, because I was missing them like crazy. But at least I'm informed and I'm trying to make reasonable decisions about my diet.

But just to — I'm sorry if this sounds like a dumb-guy question, but I really just want to nail this down: what would be the reason that I shouldn't sit around eating — what's wrong with eating a big bag of potato chips, then?

TEICHOLZ: So first of all, if they've been fried in vegetable oils, there's the problem that fried vegetable oils cause inflammation. So that's one thing. And by the way, when they measure potato chips, they always assume it's just the potato and not the vegetable oils that is having this effect. But the potatoes are carbohydrates, right?

So here's what the literature shows: if you are somebody who has a metabolic condition, which means — and they all come from the same source. You're struggling with obesity or diabetes or heart disease — and increasingly, Alzheimer's is seen also to be the same pathways that lead to all these diseases. that means that you have developed an intolerance to carbohydrates. Your body is no longer able to process them. Your body can't produce the insulin it needs or you have too much insulin circulating all the time because you've eaten too many carbohydrates because, like me, growing up I was eating Captain Crunch cereal with chocolate milk, you know? That was when I thought, you know, I was fine; who cared? But over time, chronically eating those foods all the time leads to your body gets kind of a form of exhaustion and can't respond to it anymore, can't produce the insulin, or insulin's not an effective response to carbohydrates.

If you're one of those people, what the literature overwhelmingly shows is that instead of counting calories, which is relatively ineffective, you need to count your carbs and reduce total carbs — not only sugar. Or some people can just cut out desserts and that's it; they lose 30 pounds. But the best results are seen — in terms of actually even reversing diabetes, people getting off their medication and losing weight sustainably, you have to reduce your total carbs. So some people have to go really low; other people can go moderately low. Other people can have a bag of potato chips once a week. There are people who cycle through carbs. But you overall have to reduce them so you're not chronically exposed to them all the time.

WOODS: So the long and the short of it is this low-fat, high-carb diet that has been championed for many years and, frankly — I'm not trying to politicize this, but was championed from the White House by the First Lady with school lunches that are leaving the kids starving, but they're low fat so they're supposed to be good, like this is still 1964 or something, like there's been no advance in knowledge since then. But it's not just her. I don't have to single her out. I'm pretty sure the U.S. government is still telling people that the old food pyramid is by and large correct and the base is 7 to 11

servings of grain per day. And this has been going on for more than 50 years. Is there — Now, certainly there are some dissident scientists who are coming forward, but you know, the USDA and whatever nutritional agencies we have seem still to be acting as if nothing has changed. Or am I missing something?

TEICHOLZ: No, what's extraordinary is that they really do not acknowledge that their diet has been a complete failure. If you look at rates of obesity in America, they're fairly low throughout the 1960s and '70s. 1980, the dietary guidelines start and there is a sharp uptick in rates of obesity. So the evidence is really gaining that it's the dietary guidelines that made Americans fat and diabetic. If you have 6 to 11 servings of grains a day, that is — I mean, grains in your body, that turns into sugar. So that's really almost guaranteed to make you fat and eventually diabetic.

So yeah, the last go around of the dietary guidelines, I was the only person quoted saying, We need to have change because the definition of insanity is just doing the same thing over and over and expecting a different outcome. The dietary guidelines are unchanged from when they started, which is a high-grain, high-carbohydrate diet. And why is the government not backing out of that or not reversing course? There's questions of flip-flopping on your public; there's a lot of interests who are lined up behind this particular diet. I mean, my hope is that there might be change under this administration, but it's very hard to change policies once they've become deeply entrenched, is my understanding.

WOODS: Well, that certainly — that is the frustrating thing about all of this, especially given the abundance of the evidence. And by the way, have you run into the objection that, Well, you're a journalist; you're not really entitled to an opinion. You should shut up and leave this to the experts?

TEICHOLZ: [laughing] Oh yes, I have received that.

WOODS: Oh, how about that?

TEICHOLZ: [laughing] Frequently. Well, I have a couple answers to it. The main one is that: you're right. You should have a PhD making these arguments to you. But in fact, all the PhDs who were making these arguments have been drummed out of the field —

WOODS: [laughing] Right.

TEICHOLZ: And if you grow up being taught what they're being taught in nutrition schools, you would have no idea that this line of thinking exists because all of your teachers are teaching the conventional wisdom. Critics had to come from outside the nutrition field in order — The main critics are — the first one was Gary Taubes, who's a science writer. His books were kind of the big bang of this whole field. And mine has been the book that really penetrated into the mainstream. And so I think there's no way for a critic to come up on the inside in this field.

WOODS: And what's interesting and perhaps heartening to bear in mind is that the Scientific Revolution, one of the most momentous periods of Western civilization, consisted of people operating outside the existing university system. That did not

develop outside of the existing universities. It was everybody working on the outside. So you are part of an honorable lineage of people working in the vineyards tirelessly and eventually coming up with very, very important stuff.

Well, the book is *The Big Fat Surprise: Why Butter, Meat, and Cheese Belong in a Healthy Diet*. Nina, I appreciate your time. Great conversation. And I'm sorry I was a little late to the party, but better late then never.

TEICHOLZ: Well, it's great to be on your show and just a pleasure talking to you, so thank you.