

Emily: I'm Emily Kumler and this is Empowered Health. My guest this week on Empowered Health was a vegetarian for more than 20 years, had trouble with her first pregnancy, is an investigative reporter and started looking into what she was eating and that ended up leading to her best-selling New York Times bestselling book called "The Big Fat Surprise." And I'm really excited to have her here because sort of like when we talked to Gary Taubes who helped us sort of understand not just the scientific method but why the scientific method isn't really being applied in nutrition science. Nina is going to do that, but she's going to take a really hard look at the dietary guidelines and we're going to end by sort of talking about how important saturated fat and dietary fat in general is specifically for women. And that there have been some large studies that have been done that have looked at women on low fat diets that have not shown any health benefits, none. So women's risk for heart disease actually goes up along with diabetes and all kinds of other chronic illnesses. So we get into a lot in this episode, but I think it's really, really important and we're going to start off by just talking a little bit about how when you read the news you can sort of decode whether the information is solid information or not.

Nina Teicholz: My name is [Nina Teicholz](https://ninateicholz.com/).<sup>1</sup> I am a science journalist, a book author. I wrote a book called [The Big Fat Surprise](https://ninateicholz.com/about/the-big-fat-surprise/)<sup>2</sup> that was sort of a groundbreaking book in that it made the argument that we had gotten it wrong on [saturated fats](https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/saturated-fats).<sup>3</sup> On all fats and particularly on saturated fats, which is a kind of fat that we think causes [heart disease](https://www.cdc.gov/heartdisease/facts.htm).<sup>4</sup> I'm also an adjunct professor at New York University and I am the executive director of a group called [The Nutrition Coalition](https://www.nutritioncoalition.us/),<sup>5</sup> which aims to ensure that we have evidence-based nutrition guidelines.

Emily: Terrific. I thought a good place to start would be to sort of just break down the difference between sort of the [epidemiological studies](https://www.nia.nih.gov/health/what-are-clinical-trials-and-studies)<sup>6</sup> that are often referred to and [clinical trials](https://www.nia.nih.gov/health/what-are-clinical-trials-and-studies)<sup>7</sup> and why there's such an important differentiation between those kinds of works when it comes to nutrition.

Nina Teicholz: My nerdy, favorite topics that I think is so important to understanding nutrition science, which is the difference between the kind of rigorous evidence that can show cause and effect, which is called a clinical trial and the kind of evidence that dominates our headlines pretty much every day, which is a weaker kind of science that can only show association not causation. And that is called epidemiology. Why is it so important to understand the difference between them? Well, epidemiology is a big word. And it refers to these massive databases that have evolved over decades where they ask people what they eat and then they watch to see who gets diseases, who dies and then they show an association between some food and some outcome. And the problem with those databases are, the problem with that whole field of

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<sup>1</sup> <https://ninateicholz.com/>

<sup>2</sup> <https://ninateicholz.com/about/the-big-fat-surprise/>

<sup>3</sup> <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/saturated-fats>

<sup>4</sup> <https://www.cdc.gov/heartdisease/facts.htm>

<sup>5</sup> <https://www.nutritioncoalition.us/>

<sup>6</sup> <http://pmep.cce.cornell.edu/profiles/extoxnet/TIB/epidemiology.html>

<sup>7</sup> <https://www.nia.nih.gov/health/what-are-clinical-trials-and-studies>

science, in nutrition especially, is that, I mean there are many problems, but mainly people lie about what they eat. People do not report what they eat accurately. Either they don't want to say how much sugar they're eating or how many glasses of wine a day they're drinking or they just can't remember. They can't remember on average how many pats of butter they've had over the course of the last six months per day. It's very, very inaccurate data. And when even the epidemiologist themselves try to go back and verify this data, they often find that it can only get very, very weak accuracy. So when these studies come out, these are computer databases, they can run associations all day long on their computers. And so these studies come out all the time and they say things like red meat is associated with heart disease.

Emily: Or death. We just saw that.

Nina Teicholz: Or death. The one that just came out, that [study](#),<sup>8</sup> they lump red meat together with hamburgers and everything that goes along with the hamburger, the bun, the French fries, they try to estimate if somebody says I ate a red meat casserole, they have to estimate what's in your casserole versus what's in their database.

Emily: Right. And they have things like how many cups of hot dogs did you eat, which is like not a good metric.

Nina Teicholz: How many on average per week over the past six months, how often do you eat ribs? And then can you express that in cups for us please? Just the meat, not the bone. So it's just, it's so inaccurate. And the other thing about, and this is just so salient because we see the red meat studies coming out so often, red meat eaters, who are they? They are people who are completely ignoring their doctor's advice. So they have [a number of other unhealthy behaviors](#)<sup>9</sup>. They have been shown to be people who are less likely to exercise, more than likely to be overweight, less likely to do anything their doctor tells them to.

Emily: Smoke, probably drink too much.

Nina Teicholz: Smoke, they smoke more, they drink more. So when you say red meat is associated with death, higher rates of death, what you're saying is that people who eat red meat who have all of these unhealthy behaviors are not going to live as long, but do you know it's the red meat? You have no idea if it's the meat or something else. And that's called [confounding](#)<sup>10</sup>. Confounding by other factors in somebody's life, some of which you may have measured, some of which you may not have even thought to measure. Maybe people who eat red meat are poor and live by chemical dumps. Who knows? So that is the problem with those kinds of studies and they have been wrong in serious ways that are known in science like they were wrong. That was

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<sup>8</sup> <https://www.medicalnewstoday.com/articles/325456.php>

<sup>9</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5574618/>

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[http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704-EP713\\_Confounding-EM/BS704-EP713\\_Confounding-EM2.html](http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704-EP713_Confounding-EM/BS704-EP713_Confounding-EM2.html)

why we originally had caps on [cholesterol](#)<sup>11</sup> due to this kind of weak associational science. That is the reason that we originally had a [low fat diet](#).<sup>12</sup> It was due to this weak associational science. That is the reason that we had [hormone replacement therapy](#).<sup>13</sup> which turned out to be killing people because the policy was rolled out on the back of that weak associational science. And when it was finally tested in a rigorous kind of clinical trial, a more rigorous kind of evidence, they found out that the associations could not be shown to be true. So a clinical trial actually takes a group of people and divides it into two and gives half the people the intervention, the diet or the drug, and the other half gets the control or the placebo. And if it's a big enough group, you can assume that everything about those two groups are the same except the intervention, the diet or the drug. And therefore at the end of your clinical trial, you know that whatever differences you see between those two groups has to do with your intervention. Or you can be reasonably sure or you can repeat the experiment and try it again with a larger group over a longer period of time. But that is the only way to show cause and effect. So just one really important fact about all this is that when these weak associational studies, epidemiology, have been tested in rigorous clinical trials, they have historically been accurate. In other words, the epidemiological findings turn out to be true only zero to 20% of the time, so that means 80 to 100% of the time they're wrong. That means 80 to 100% of the time that you're reading those headlines, [they're wrong](#).<sup>14</sup>

Emily: What has happened? Because I feel like in most fields you would think of an epidemiological study as a way of developing a hypothesis, which is then tested with a more sort of rigorous clinical trial or doubly blind, ideally. This just sort of, and I get the idea that everybody's like, it's too expensive, but like if you look at the cost of what the sort of obesity, diabetes, cancer or [Alzheimer's](#)<sup>15</sup> crisis is causing us, why is that still even remotely acceptable as an answer?

Nina Teicholz: Why do we continue to rely on nutritional epidemiology?

Emily: I know I'm asking you the wrong question in that you agree this is not the right approach, but I think one of the things that I'm fascinated by, especially since this podcast is really focused on women's health is like if you look at [The Nurses' Health Study](#),<sup>16</sup> [The Women's Health Initiative](#),<sup>17</sup> [The Boeing Studies](#),<sup>18</sup> all of those seem to put forward information that like the low fat diet was not good for women, might even be worse for women than for men in terms of heart disease, which is a big deal for women and yet that never seemed to get pushed through. And

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<sup>11</sup> <https://www.heart.org/en/health-topics/cholesterol/about-cholesterol>

<sup>12</sup> [https://www.ucsfhealth.org/education/guidelines\\_for\\_a\\_low\\_cholesterol\\_low\\_saturated\\_fat\\_diet/](https://www.ucsfhealth.org/education/guidelines_for_a_low_cholesterol_low_saturated_fat_diet/)

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<https://www.menopause.org/docs/default-source/2017/nams-2017-hormone-therapy-position-statement.pdf>

<sup>14</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1182327/>

<sup>15</sup> <https://www.alz.org/alzheimers-dementia/what-is-alzheimers>

<sup>16</sup> <https://www.nurseshealthstudy.org/>

<sup>17</sup> <https://www.whi.org/SitePages/WHI%20Home.aspx>

<sup>18</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3419346/>

so like it's really easy to jump to the, well who are the parties at the table who are benefiting from people being sick and diabetic and or you know, why do we care about women or like the [American Heart Association's](#)<sup>19</sup> sort of crazy history. And I think all of that is important for us to talk about. But I'm just sort of curious the idea that this is even considered science anymore. It feels like fraud. I mean, I sort of can't believe that there isn't an obese person who's sick who hasn't sued the government. Do you know what I mean?

Nina Teicholz: I think there are people who are interested in suing the government and I think the answer to your question though is, I want to first respond to what has been the rhetorical answer to that question. Why must we rely on these weak associational studies with such a poor record of outcomes? They were almost always wrong. And the answer that is given is that it's too expensive to do large randomized controlled clinical trial on humans. It takes too long. But that is completely contradicted by the fact that in the 1960s and 70s when the government was the [NIH, National Institutes of Health](#)<sup>20</sup> was really excited about doing nutritional trials. They spent billions of dollars and did randomized controlled clinical trials on tens of thousands of Americans, tens of thousands of us in mental hospitals, in all kinds of settings. They developed all sorts of experimental diets and controlled diets that were meant to mimic the experimental diets. And what happened to those trials? They were mainly meant to test the hypothesis that saturated fat and cholesterol were bad for health. Because that had been sort of the whole birth of nutrition science as a modern field was on the back of that hypothesis, which was developed by [Ancel Keys](#).<sup>21</sup> All those trials could not confirm the government's hypothesis that saturated fat and cholesterol cause heart disease. And so all of those clinical trials were basically ignored. They weren't published, some of them moldered in the NIH basement and never saw the light of day and the government just simply sort of left it behind like an ugly stepchild that they just didn't want to acknowledge.

Emily: But is that the sort of politics influencing science or was that already sort of a corrupted science? I mean Ancel Keys was clearly picking data points and doing things that don't really feel like they adhere to the scientific method.

Nina Teicholz: Right. So if you go back in, so Ancel Keys was sort of the founder of modern nutrition science and he founded the whole field on the back of a nutritional epidemiological study and it was called the [Seven Countries Study](#).<sup>22</sup> It's quite well known. And it's cited probably more than any other study in the history of nutrition science. So the whole field was founded on the back of epidemiology. And then the government and pretty much every institution, the American Heart Association and then the government, and then pretty much all nutrition scientists adopted this hypothesis that saturated fat and cholesterol cause heart disease that Ancel Keys had developed. And then when the clinical trials that came out could not confirm that hypothesis, it was such, I think originally the scientists just couldn't believe the

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<sup>19</sup> <https://www.heart.org/>

<sup>20</sup> <https://www.nih.gov/>

<sup>21</sup> <http://www.epi.umn.edu/cvdepi/bio-sketch/keys-ancel/>

<sup>22</sup> <https://www.sevencountriesstudy.com/about-the-study/investigators/ancel-keys/>

results. They just thought they must've done something wrong because everybody knew that saturated fats and cholesterol cause heart disease. So how could we get it wrong in our clinical trial? Let's do another clinical trial. But the clinical trials kept coming up saying the same thing, basically what we call no results. They could not confirm the hypothesis. And then what happened was the clinical trials then simply had to be ignored. One of the things that I found when I was researching an article for the [BMJ](#)<sup>23</sup> on the [dietary guidelines](#)<sup>24</sup> was that no expert committee for any iteration of any of our dietary guidelines, which were launched in 1980 and they do a new iteration every five years, never had one of those expert committees ever reviewed any of those National Institutes of Health funded clinical trials. So he poured billions of dollars into trying to find out if this is right and then when they didn't come out the way people wanted them to, they were ignored and the government ignored them.

Emily: So just as a point of background, which I feel like we're going to do something with, although we don't know what, I have a lot of old footage from a documentary that I worked on about 20 years ago that I never did anything with, and I think I was the last person to interview [Mark Hegsted](#).<sup>25</sup>

Nina Teicholz: Oh wow.

Emily: In that interview he basically acknowledged that they made some big mistakes. I feel like I should just give you the transcript because you'd probably have a field day with it.

Nina Teicholz: Wow that's so exciting. Yeah.

Emily: And he was like in a nursing home on oxygen, like the video quality is total shit and I hadn't worked in TV yet, so I like really didn't know what I was doing, but the content of what he says is really important. And I feel like one of the things that he was really clear with me on as a sort of regret being a younger guy in his career at that point and he was working on the dietary goals was really what we were talking about, which is sort of proceeded the dietary guidelines. And he basically said that like they were very aware that the committee was going to be disband and that they had this political pressure to come up with something, but he was very clear they did not know what they were doing, that there was no evidence behind what they were doing and that basically everybody thought this was sort of a big test on, or like an experiment, on the American population and were not comfortable with it. And I think it was even in his press statement that when they announced the goals, he basically said something along the lines of this is our best guess, but we don't know and we really hope the research will follow and tell us that this is right, but please review this regularly and update it, which obviously has not happened. When my friends tell me a story, I'm always like start at the beginning. I need chronological order to understand how things happen. And I feel like starting back with Hegsted

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<sup>23</sup> <https://www.bmj.com/>

<sup>24</sup> <https://www.bmj.com/content/351/bmj.h4962>

<sup>25</sup> <http://www.epi.umn.edu/cvdepi/bio-sketch/hegsted-d-mark/>

and [Eisenhower having a heart attack](#)<sup>26</sup> and the American Heart Association, which you've written and talked a lot about, I feel like that's sort of a great place for us to get into some of the details of all of this because from my perspective there was sort of a, it was like a trifecta of these subsidized food programs like [school lunches](#),<sup>27</sup> the [Women Infant Children Program](#),<sup>28</sup> all of those sort of subsidized programs that were supposed to help with malnutrition and feeding poor people and the [McGovern Commission](#)<sup>29</sup> and then all these people who I think like the majority of people who were on the committee that basically picked Hegsted to be their guy. Almost all of them ended up running for president. It was the [Senate Select Committee on Nutrition and Human Needs](#)<sup>30</sup> and it was like Kennedy of Massachusetts, Dole was Kansas, Humphrey, Taft, Mondale. I mean like these guys all ended up running for president. So it's like, clearly this was a really important topic, but one of the other things that Hegsted had said to me was like this should never have been in our department, that it should have been a [National Academy of Sciences](#)<sup>31</sup> kind of thing and that if it had had been run through them, it would have been held to more rigor that this became like an agriculture political kind of thing where like everybody was weighing in on stuff. And I was sort of interested to hear from your perspective, you've done so much research into the dietary guidelines and how entrenched and like dogmatic these are and that even though people are sort of like, well who cares what the government recommends that they have a very direct impact on the health of Americans based on schools, hospitals, recommendations that are made. Can you just sort of talk, I mean I just vomited a little bit and I want you to just sort of pick up on whatever points sort of strike you most because I think there's so much to go off of and I feel like you have such a wealth of knowledge so.

Nina Teicholz: Well thank you. I want to just round out the discussion on epidemiology for one second and just to finish that off with one thought. Which is that when scientists and the government decided to abandon the clinical trials that could not confirm basically their dogma about fat and cholesterol, they turned to epidemiology because that is a malleable science. You can pretty much get whatever you want with that highly unreliable data. And so they turn to this science to get the results really that would support their preexisting ideas. And that is what they have been doing ever since. Nearly 100% of our guidelines are based only on epidemiological studies.

Emily: But to say that that was the intent, that feels a little bit like saying the intent was to mislead.

Nina Teicholz: Well, I mean they had a choice and I don't know what the intent was, but what you see, the effect of what you see is that the expert committees shifting to rely on

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<sup>26</sup> <https://www.ncbi.nlm.nih.gov/pubmed/19213302>

<sup>27</sup> <https://www.heart.org/en/get-involved/advocate/federal-priorities/school-meals>

<sup>28</sup> <https://www.fns.usda.gov/wic>

<sup>29</sup> <https://teachingamericanhistory.org/library/document/mcgovern-fraser-commission-report/>

<sup>30</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3910043/>

<sup>31</sup> <http://www.nasonline.org/>

epidemiology, shifting to rely on epidemiology. That is what you see. Whether that was done knowingly, what exactly happened in that process, I mean, who knows. But you know, I've gone through the entire evidence base for the dietary guidelines on the key questions regarding the top diseases that they look at heart disease, obesity, diabetes, and they ignore the clinical trial data and they only cite epidemiological studies and any of the clinical trials that they do cite are, they don't cite the big ones. They cite some tiny study in Iran that doesn't meet their selection criteria. I mean, they just.

Emily: Which feels so ridiculous.

Nina Teicholz: I mean, it's just terrible science. That's why when I wrote this all up in an [article](#)<sup>32</sup> for the British Medical Journal, the BMJ, it's really little known, but the biggest ever retraction effort in as far as I know in modern science, [183 nutrition people and their friends all tried to get my paper retracted](#).<sup>33</sup> It was a huge, huge battle because what my paper states is what is in the paper is that there's quote unquote a minuscule skill amount of rigorous data to support our dietary guidelines, which was supposed to be the gold standard. And I meant ways in which they include studies that don't meet their own selection criteria and they excluded all of these incredibly important studies that do meet their inclusion criteria. And so it's well documented in that article and that's hugely threatening because the conclusion is, is that our dietary guidelines are not based on rigorous science at all.

Emily: And what is the cost of that?

Nina Teicholz: Well, just to say when, to pick up on another point that you raised about, well, what is the influence of the dietary guidelines? Because it's true. Nobody says like, Oh, I want to go to a .gov website to find out about diet. I mean I think there are few people who actually do that. They go to their doctor, but what do the dietary guidelines influence? First of all, they influence all of the feeding assistance programs. So they pretty much dictate them. So school lunches, Women Infant Children programs, feeding programs for the elderly and the dietary guidelines drives all those programs, which one in four Americans have one of those meals every month. They also influence hospital food, cafeteria food. I mean they're sort of considered the gold standard so everybody has to follow them and they're downloaded. They're virtually downloaded. But all health care practitioners, so doctors, nutritionists, dieticians, nurses, they all, when you get dietary advice you are getting that guidelines. Even though you think you're getting your doctor's advice, they are delivering to the guidelines. And what I'm told is that in large medical practices, they are forbidden from giving any other advice because they fear medical malpractice. They're told they can only give the guidelines because the guidelines are the only endorsed nutritional advice. And here's another amazing fact. The guidelines have always only been for healthy people. I mean they do not even look at studies on people with [type two diabetes](#)<sup>34</sup> or establish heart disease or a diagnosed disease or even obesity. Because

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<sup>32</sup> <https://www.bmj.com/content/351/bmj.h4962>

<sup>33</sup> <https://www.bmj.com/content/351/bmj.h4962/rr-36>

<sup>34</sup> <http://www.diabetes.org/diabetes-basics/type-2/>

when the dietary guidelines started, there were supposed to be for the general public and the general public was basically healthy. They were meant to prevent disease, not to treat it. What has happened since 1980? We've all become really sick, I believe in large part because we've been eating this high carbohydrate, that the government promoted, high carbohydrate diet and mainly grains. But so now [there are 60% of us who have one or more, diagnosed with one or more chronic disease, according to the CDC.](#)<sup>35</sup> So the healthy people are in a minority, but the government still goes about making these guidelines by only looking at studies on healthy people. So that is even crazier. So that means when you go into your doctor's office and you say you don't have heart disease, I've had a heart attack or I'm obese and I want to lose weight, or I have type two diabetes, your doctor gives you advice. It has looked based on only studies of healthy people, people with diabetes and obesity, they are metabolically sort of broken in a way. Their metabolism is not functioning the way a healthy person's functions. And so they really need different dietary advice. So for doctors, nurses, nutritionists, dietitians, to be giving that person advice that is based on lean, healthy people is, it's malpractice really is what it is.

Emily: Well, yeah, and I think it's the same for [registered dietitians.](#)<sup>36</sup> I mean like they have to prescribe, and I'm sure I'm gonna get in trouble for sharing the story. Okay. I'm just going to cut out for one second because I don't want to divulge anybody's personal information as even when people behave badly. I think they're sort of entitled to their personal privacy. But let's just suffice to say that Nina and I are talking about an editor at a major news outlet. Okay, here we go. Basically they asked me to pitch stories to them and I did. And I pitched one on the [Virta Trial](#)<sup>37</sup> and the editor wrote me back and was like, I'm, you know, a little concerned that you're promoting a private industry basically was how she put it. And I was like, okay, well it's clearly there's a misunderstanding. I'm not trying to promote anything. I think this is fascinating and everybody in America has diabetes and everybody's told to be put on insulin, so why would we not cover this? I wrote her back a pretty long response defending my position on why this was worthy of a story and she basically was like, well I have registered dietitians who to all of our nutrition reporting. So that wouldn't be something that I would assign to you anyway, but it doesn't seem like you're a good fit for this section. So basically like don't ever pitch me again, which I've never in my career been told that. Just full stop like please, I'm blocking your email again. It felt really harsh, but it was so interesting to me because it was like there was such vitriol in her response to me and I was like, wait a minute. If you're only having registered dietitians, which maybe was what got me in trouble, but when I responded and I said, you're only registered dietitians are able to write anything about nutrition, that means they're only going to write in favor of the guidelines because they've signed some like blood pledge saying that that's like what they are allowed to tell people about. And like you're a journalist. If the media isn't able to report on something that is a clinical trial, the largest, the longest

Nina Teicholz: And with results that are, if that were a drug. I mean just the parallel is almost all drug trials are funded by drug companies, but if there were a drug that reported more than half

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<sup>35</sup> <https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm>

<sup>36</sup> <https://www.eatrightpro.org/about-us/what-is-an-rdn-and-dtr/what-is-a-registered-dietitian-nutritionist>

<sup>37</sup> <https://www.virtahealth.com/research>

of people completely reversing their diagnosis of diabetes, the disease that is the most expensive disease in the nation, eats at most of our health dollars and is ravaging the country, 50% of people had recovered from their diabetes at one year. At one year it was actually 60%, at two years they had sustained their results. And sustainability is one of the things that all trials have trouble with keeping the results. Sustained at two years you would say that should be on the front page of the newspaper.

Emily: For sure. And like 94% of people got off of or reduced their need for insulin. I mean whereas people are just told this is going to be an insulin management disease. I couldn't, I was literally, it upset me for weeks because I was just like, wait, am I seeing this? Am I missing? Do I not have any objectivity? Like this is so compelling. How come this isn't getting more press than when we [interviewed Dr. Hallberg for the podcast](#),<sup>38</sup> the person who helps them with public relations stuff followed up with us a couple times and was basically like, are you sure this is really gonna run? And we were like, what? Of course. But they're having a hard time I guess. I mean like that to me is so deeply upsetting and I feel like one of the other, we have so much to talk about, but one of the other things I definitely wanted to sort of just ask you about from a media journalism perspective is like I feel like both you and [Gary Taubes](#)<sup>39</sup> went into this as investigative journalists and you thought something's not quite right here, right? Like you were a vegetarian for what, 20-25 years, like a significant amount of time. You weren't going in as some sort of meat-loving, carb-hating person. You were going in as somebody who's a researcher, who can critically think, who can look at all sides and really sort of dissect an issue down to what do we know and what do we not know? I mean like there are things we don't know conclusively and I feel like your book really reports on like what we know and how scientists have been marginalized and, and it just, it struck me, I was actually talking to my husband last week about this, that like if you were compared to [the Spotlight Team at the Boston Globe that exposed the Catholic church abuse with children](#),<sup>40</sup> they have been lotted and as they should be, for exposing something and if somebody were to go to them and basically say like, okay, it seems like maybe you're now really opinionated about priests, or children, or sex abuse. So you can't ever report on that again. You can write opinion pieces like it's so fucked up beyond anything that I feel like is acceptable that you guys, and I don't know how you're sort of received in terms of regular reporting kind of stuff anymore, but I feel like definitely it seems like with Gary, like he's just, people sort of think of him as like an activist now.

Nina Teicholz: Right? And me too. And actually there's an active effort to portray us that way because this is just a field that is unlike anything that I have really seen anywhere in journalism. I mean, I've been a journalist for what, 30 years practically or 25 years and I just, it doesn't even begin to be recognizable as a normal journalist experience. There's no questioning of government. There's no questioning of authorities. There is active beating up of people who are

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<sup>38</sup> <https://empoweredhealthshow.com/a-diabetes-cure/>

<sup>39</sup> <http://garytaubes.com/>

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<https://www.bostonglobe.com/news/special-reports/2002/01/06/church-allowed-abuse-priest-for-years/cSHfGkTlrAT25qKGvBuDNM/story.html>

questioning authorities. It's like they're the government. The media is just, they're completely defensive of the dietary guidelines and everything. They're like the greatest defenders of them.

Emily: Why is that?

Nina Teicholz: They do not like this idea that challenge authority in nutrition. There's like not even a question of that they will do that. And they're really on the whole like they're pretty nasty to people like me and Gary. I think that one, they're implicit in this horrible mistake. I mean they have been telling people to cut fat, don't eat meat, don't eat full fat dairy. They've been right along there with the government for decades and so they also don't want to be wrong. I remember pitching my very first story to [Self Magazine](#)<sup>41</sup> about saturated fats and they wanted it, they pitched, they asked me to write it, I wrote it, submitted it, the editor liked it, and then she sent it up the flag pole of the magazine and they just said, no way, we're killing this piece because it contradicted so much of their own advice. And the other thing is that I think that sort of the intelligence yet, and certainly the journalistic intelligentsia, has just gone vegetarian. Even though low carb doesn't have to be a high meat diet. And it is clearly the diet with the [most evidence behind it to reverse metabolic related diseases](#).<sup>42</sup> And there's just no question to me that that is the diet with the most promise, especially for diabetes. The evidence is quite strong now, but there's this fear amongst a kind of vegetarian elite than if people go low carb, they'll go crazy on steaks. They'll just, all they'll do is they and people do. I mean some people adopt this diet and they just want to eat steak all day long.

Emily: Which may not be bad for them.

Nina Teicholz: It may not be bad for them, but I mean the vegetarian mentality is that that would be the worst possible thing because horrifying to people because of animal rights issues or they've been vegetarian for so long that they just find it, the whole idea disgusting. Now there's this [idea that meat causes global warming](#).<sup>43</sup> Where's the biggest driver of global warming? So there's all these reasons that they're repulsed and reviled by a diet that might liberalize meat intake, and so there's a huge bias in the media and it's extremely difficult. I mean, again, going back to the Virta study, university-based study with all the proper protocols, largest ever study on type two diabetics did not get a single story. The most impressive results for type two diabetes in the history of nutrition research and did not get a single mention in any of the papers.

Emily: I think maybe [Anahad O'Connor wrote a piece](#)<sup>44</sup> about it in a major newspaper, I think.

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<sup>41</sup> <https://www.self.com/>

<sup>42</sup> <https://www.sciencedaily.com/releases/2019/06/190620100036.htm>

<sup>43</sup> <https://www.climatecentral.org/news/studies-link-red-meat-and-climate-change-20264>

<sup>44</sup> <https://www.nytimes.com/2017/04/11/well/live/tackling-weight-loss-and-diabetes-with-video-chats.html>

Nina Teicholz: I don't know that he did. He once wrote a study on Virta as a kind of roundup about digital apps. So digital app technologies and diet. That really was not about Virta's unique approach. Having a digital app for diet is not what I think is unique about Virta.

Emily: Yeah.

Nina Teicholz: Certainly helpful and it helps with adherence, but it's the very [low carbohydrate ketogenic diet that reverses diabetes](#).<sup>45</sup> People don't need a digital app to reverse their diabetes.

Emily: So wait, let's talk a little bit more about the sort of the double whammy of animal cruelty and environmental damage because I feel like that's a really powerful emotional argument that's not really based. As far as I can tell, it doesn't seem to be based on any real facts. So like being a vegetarian isn't and certainly is not better for your health. In fact, [there](#)<sup>46</sup> [is](#)<sup>47</sup> [evidence](#)<sup>48</sup> [to](#)<sup>49</sup> [suggest](#)<sup>50</sup> that your health sort of consistently deteriorates over time on that kind of a diet. And the environmental stuff is really interesting because I feel like it doesn't seem like there's any, I mean global warming, I'm not talking about global warming. I'm talking about like the impact of eating meat and raising animals. I've definitely heard a lot of people who have talked about how you need an animal carcass to or like soil is enriched by whether it's like manure or like these sort of animal byproducts are essential to growing vegetables and so like if you were to remove the big animals or any animals, the nutrient base of the vegetables would suffer.

Nina Teicholz: So I'm not an expert in environmental issues, but I know that a number of those reports condemning animal agriculture were written by vegans and much of the current literature that accuses animal agriculture of being a major driver of environmental damage. Those are groups that are, they're vegan groups, they're vegetarian groups. There is also a kind of alliance of those people who have a certain ideology about the way they eat and the animal rights activists. I think they're really led by somebody named [Neal Barnard](#)<sup>51</sup> at the [PCRN, Physicians Committee for Responsible Medicine](#).<sup>52</sup> not really doctors so much as they are, they're animal rights activists. That's who they are. And they work with the [Humane Society](#)<sup>53</sup> and others and they have kind of joined forces with the vegetarian ideologues and there is another prong that has joined forces with them, which is also the [Seventh-day Adventist Church](#),<sup>54</sup> which surprisingly has a great deal of control of groups like the [American College of Lifestyle Medicine](#).<sup>55</sup> They own a number of hospitals and health clinics all over the country. They actually

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<sup>45</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1325029/>

<sup>46</sup> <https://www.ncbi.nlm.nih.gov/pubmed/12816782>

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<sup>48</sup> <https://www.ncbi.nlm.nih.gov/pubmed/21139125>

<sup>49</sup> <https://www.ncbi.nlm.nih.gov/pubmed/21613354>

<sup>50</sup> <https://www.ncbi.nlm.nih.gov/pubmed/24667136>

<sup>51</sup> <https://www.pcrm.org/about-us/staff/neal-barnard-md-facc>

<sup>52</sup> <https://www.pcrm.org/>

<sup>53</sup> <https://www.humaneociety.org/>

<sup>54</sup> <https://www.adventist.org/en/>

<sup>55</sup> <https://www.lifestylemedicine.org/>

have a [member](#)<sup>56</sup> right now on the [Dietary Guidelines Expert Committee](#)<sup>57</sup> is a Seventh-day Adventist and they believe that eating meat is something that God prohibits, so it is [their religious belief that you should not eat meat](#).<sup>58</sup> So all these kind of forces come together and then you also have the force of all the institutions that cannot be seen as backtracking on their historical advice to the American Heart Association and the entire U.S. Government and their advice has not been so much anti-meat as it's been anti-saturated fats. That's where I came into the crossfire because I was a vegetarian. I was studying dietary fat, but saturated fat. The reason that we think meat and dairy is bad for us or eat lean or low fat versions of them is due to their saturated fat content. So if you liberalize saturated fats, I didn't even know this when I started my investigations, but saturated fats are the rate limiting factor on eating meat and dairy. So that is why the vegetarian groups have come after me so hard because they see the liberalization of saturated fats as the way of just like opening the door to meat and dairy. But in any case, I'm talking about the confluence of interests behind this vegetarian diet to which you also now have to add, there are massive industries who have come to understand that they can harness the energy of the vegetarian vegan movement to their benefit, right? So who are those companies? Well, [Barilla Pasta](#)<sup>59</sup> is a major one. All of the grain and soy producers and the pasta makers and anybody who makes carbohydrates, which is pretty much all big food. [Nestle](#)<sup>60</sup> is behind this and they support, not only do they support all the vegetarian, the media hype about it, but they're heavily invested in this idea that not only it's good for you but it's good for the planet. So that whole idea that it's good for the planet, I actually have a hunch that the Barilla Pasta Foundation came up with that idea. And that's sort of been the tagline for years now for maybe, four or five years now. But it's been incredibly persuasive.

Emily: I feel like you've done such great work at sort of following the money and backtracking. And so [Unilever](#)<sup>61</sup> comes to mind with the [Harvard Research](#)<sup>62</sup>?

Nina Teicholz: Yes. So I mean when I say the industries that are invested, I mean not only the carbohydrate companies but all of the vegetable oil companies that, because if you don't eat saturated fats, you're eating unsaturated fats, that means all the polyunsaturated vegetable oils. So that's canola, safflower, sunflower, mainly soybeans. [Soybean oil is the main oil that is consumed in the United States](#)<sup>63</sup> and it's the main oil that is used in all packaged products. So Unilever is a big supporter of Harvard and Harvard is the main institution coming out with papers saying saturated fats are still bad for you and you still need to consume vegetable oils. Unilever

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<sup>56</sup> <https://www.nutritioncoalition.us/news/2020-dietary-guidelines-committee>

<sup>57</sup>

<https://www.dietaryguidelines.gov/work-under-way/review-science/about-advisory-committee/2020-committee-members>

<sup>58</sup> <https://www.healthline.com/nutrition/seventh-day-adventist-diet>

<sup>59</sup> <https://www.barillagroup.com/en/good-planet>

<sup>60</sup> <https://www.nestle.com/stories/healthy-food-meatless-meals-flexitarian-nutrition-needs>

<sup>61</sup> <https://www.unilever.com/>

<sup>62</sup> <https://www.hbs.edu/faculty/Pages/item.aspx?num=50063>

<sup>63</sup> <https://www.statista.com/statistics/301044/edible-oils-consumption-united-states-by-type/>

is also [a big supporter at Tufts](#).<sup>64</sup> Another place that is led by a nutritionist that is extremely influential who is always pushing vegetable oils. So the food money is really intertwined with some of the most influential institutions that guide our nutrition science.

Emily: And then talk a little bit about the reason that the oils like Omega sixes basically are so dangerous.

Nina Teicholz: Just going back for one second to the environmental issue and it tends to be my shorthand answer when people say like, this is an argument that goes back to the 70s why consume a pound of meat when it consumes so much more of our earth's resources? It's better just to consume a pound of plants and they look at those two things as being equal, but a pound of plants does not have the nutrients that are needed for human life. They don't have all the nutrients needed for human life. A pound of meat does. And if a pound of plants, high grain, high carbohydrate diet, if that comes with diabetes, obesity, heart disease, all of a sudden that looks like a very heavy pound of plants because you have to bring, you have to calculate in all those externalities, which is death and disease, which are [15% of our federal budget right now goes to paying the healthcare costs largely for those chronic diseases](#).<sup>65</sup> So those two things cannot be compared as being the same. Those calories are not the same. One can sustain human life and the other cannot.

Emily: And I feel like it used to be said that for poor families that meat was the best bang for your buck because of, just to your point, it's nutrient dense, and you need less of it. And there's this sort of fallacy today about the fact that we're eating less meat.

Nina Teicholz: Right. That's not even part of the discussion. Like meat is a complete protein. You get all the amino acids that you need. It's very hard to get all the amino acids that you need from plants. And what the vegetarian movement is now doing is they're trying to redefine what it makes a good protein, so they want beans and quinoa to be above meat.

Emily: But that's based on nothing. I mean like that's insane.

Nina Teicholz: Based on no science, but the whole field is just being driven by these massive corporations now. If you look at the [EAT-Lancet Study](#),<sup>66</sup> which I don't know if you're going to get into that, but you should look at the companies that are behind that. Not only is it all the major food companies including [Mars](#)<sup>67</sup> and Nestle and Unilever, but it is all the big chemical companies. Why would a chemical company be interested in promoting this idea of a vegetarian

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<sup>64</sup> <https://nutrition.tufts.edu/entrepreneurship/nutritioninnovation>

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<https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpendedata/nhe-fact-sheet.html>

<sup>66</sup> <https://eatforum.org/eat-lancet-commission/>

<sup>67</sup> <https://www.mars.com/sustainability-plan>

diet for the planet? Because if they can blame all of the planet's ills on meat and dairy, then they're off the hook.

Emily: Oh my God.

Nina Teicholz: All the chemicals that they're dumping into our environment so they have an incentive to shift the blame over to food as well.

Emily: I feel like there is this sort of underlying misunderstanding about this though, just in the sort of general sort of normal conversations that people have with each other about evidence because there is real evidence. I mean I feel like there was this study that was done that was basically buried in Minnesota that [they changed a law to make the butter look like the margarine](#).<sup>68</sup> I mean like that's an incredible story. I can't remember the name of that study.

Nina Teicholz: Yeah, just did a [coronary survey](#)<sup>69</sup> where they didn't publish it for 16 years, which it was the largest ever test of Ancel Key's hypothesis. And when Gary Taubes actually asked [Ivan Frantz](#)<sup>70</sup> the project leader of that study, why didn't you not publish it for 16 years? And when you didn't publish it, you put it in a journal that you knew nobody in nutrition would ever read. And Ivan Frantz responded well there was really nothing wrong with the study. We were just so disappointed in the way it came out.

Emily: But it's out.

Nina Teicholz: To answer your question because the studies are out there. The truth is out there. Anybody who is honestly interested can find out for themselves, but we, it's filtered through a media that is not doing its job. So the media will report. [The media is now largely funded by big Pharma and big food](#).<sup>71</sup> That's where their advertising comes from. And I'm not saying that they're correct, but they have adopted a stance that favors industry and they cannot accurately report on the science. So we do not share the science, but we see every week is some terrible epidemiological study that meat causes something or other. We see a mouse study and the headlines are as if that mouse study refers to humans. What we don't see are the [studies showing 50% reversal of diabetes](#).<sup>72</sup> We don't see that because the whole field is biased against it, including the media.

Emily: And that Minnesota study too. The other part that was really striking to me was that the all cause mortality was higher in the people who had been eating the polyunsaturated fats, so like it wasn't just saying like, well no actually it doesn't seem like low fat has any benefit. It was

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<sup>68</sup> <http://www.mnopedia.org/minnesota-s-margarine-battles-1885-1975>

<sup>69</sup> <https://www.bmj.com/content/353/bmj.i1246>

<sup>70</sup> <https://www.legacy.com/obituaries/twincities/obituary.aspx?n=ivan-d-frantz&pid=123233693&fhid=4255>

<sup>71</sup> <https://fair.org/interlocking-directorates/>

<sup>72</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6520897/>

actually say these oils are potentially causing cancer, all kinds of other things. That would be a great headline.

Nina Teicholz: So yes, I mean all those studies that replaced saturated fats with polyunsaturated fats, the studies that were funded by governments around the world testing tens of thousands of people. The people who were on the polyunsaturated fat diets, meaning they had soy-filled milk, soy filled-cheese, the equivalent of what the meatless burger would be today. And at the end of all those studies, they not only found no benefit from that, but they actually found consistently found higher rates of death from cancer. And that never became a headline because the nutrition scientists were so, I mean, I think basically embarrassed about it and they felt that the low fat diet was just so important that they would just sort of ignore the cancer results. And that was certainly the case in the Minnesota coronary survey, which again, the most important test of Ancel Key's hypothesis ever undertaken. They didn't even report in their paper the finding that the more the men lowered their cholesterol, the higher their risk of death from cardiovascular disease. It took a team of scientists to [go into the basement of one of the project leaders](#)<sup>73</sup> in Minnesota and recover all the old tapes, the original data tapes from the study. And they, reanalyzed them and they found this finding and it was published in 2015 saying, oh, this study done in the 70s, actually, not only did it find no benefit from the low fat diet, but actually found harm, active harm.

Emily: So is this just the case of people become so wedded to their work that they can't change? I feel like journalists and scientists both share some characteristics in the sort of pursuit of the truth or a pursuit of more information and like being your own critic is so important and like trying to find people who disagree with the story you're writing before it's published so you can figure it out. Like you can see what you maybe got wrong. That doesn't seem to happen in these fields. It's just striking because I feel like when you talk to individual researchers, they're human. They seem like they have high standards, they don't seem like they're out to harm people, but there's a [cognitive dissonance](#)<sup>74</sup> that seems so strong in this field and you sort of think, well maybe like once the old guard is dead, that the younger, the people who have been brought up where they've done their own research or they've been on a ketogenic diet or, but I don't know. I mean maybe that's just being like sort of [Pollyanna](#)<sup>75</sup> about like how this is all going to change because it seems to actually be getting worse. Not better.

Nina Teicholz: I agree. And there is that old adage for a hypothesis to die, you have to wait for the scientists to die and then the new generation can take over. But in this case, we've had three generations of scientists sustain the same hypothesis. So it seems to be like a virus that is passed on from one generation to the next. And the problem is there's so much money in it. So there's a tremendous amount of money and there's so much institutional investment. The [USDA](#),<sup>76</sup> [HHS](#),<sup>77</sup> American Heart Association, [American Diabetes Association](#).<sup>78</sup> Everybody's

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<sup>73</sup> <http://revisionisthistory.com/episodes/20-the-basement-tapes>

<sup>74</sup> <https://www.verywellmind.com/what-is-cognitive-dissonance-2795012>

<sup>75</sup> <https://www.merriam-webster.com/dictionary/Pollyanna>

<sup>76</sup> <https://www.usda.gov/>

invested in this diet. So it's not just that they're intellectually invested or they're institutionally invested, so they don't want to be reversing on their publics, but there's so much money behind it. All of big Pharma, not to put it too cynically, but all of big Pharma depends on people staying sick. [The average American takes five pills a day.](#)<sup>79</sup> If you get on a diet that cures your disease and you're not on medication anymore, that's a zeroing out of profit line for a pharmaceutical company. And there are the food companies, the huge mammoth processed food companies. So there really is just this confluence of interest to keep this diet going and not to allow this other diet in. And I think there's some hope. It is true that people, when they try going on a lower carb diet, they do on the whole experience these really remarkable health benefits. And there is that phenomenon. This is now spreading so far and wide despite efforts to kill the low carb diet that are scare tactics that too numerous to mention, but just the way they tried to, you know, in successfully got rid of [Dr. Atkins](#)<sup>80</sup> in his day, but now there's so much science behind it and there's many, many scientists who are interested and there is just millions of people now who are doing this diet successfully. And so that you get to a point where in meetings people are raising their hand saying, you know, I can't continue and ignoring the science at this level.

Emily: Well and also I think like when you get to the level of how much we trust our doctors, I think that there's a shift in that in the culture too, where people are starting to sort of, I don't know, do a little bit of their own research and go in and feel charged up to ask their doctor about other things. And I think we've said this before on the podcast, but I feel like it's always important to mention that doctors get one day of nutrition in med school, which is like you're sick that day. You just don't get any. Food as medicine is not part of medical school.

Nina Teicholz: And what you get is wrong advice on how to treat only healthy people. So it's really not the doctor's fault. And then they're told by, if they're in a large medical practice, that this is the advice they must give. So it is true, there's a lot of cognitive dissonance for people who defy their doctors and they're many, many people who just do not want to do something that their doctor forbids. But there is I think a growing swell of people who they see their coworkers, they see their friends at school, they, you know, they just look around and they ask you how is it that you lost that 100 pounds? How did you lose 50 pounds? I went to my dog groomer the other day and I said, how did you lose so much weight? And she says, I went on this diet. It's called the [Keto Diet](#).<sup>81</sup>

Emily: She doesn't know who you are.

Nina Teicholz: But it's just spreading. And I think that unlike environmental science where none of us can really do our own N = 1 experiment on say environmental pollution, we can all do an N = 1 experiment on ourselves. And we can all find out what diet works for us or doesn't work for

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<sup>77</sup> <https://www.hhs.gov/>

<sup>78</sup> <http://www.diabetes.org/>

<sup>79</sup> <https://www.sciencedaily.com/releases/2013/06/130619132352.htm>

<sup>80</sup> <https://www.atkins.com/our-story/atkins-diet-history>

<sup>81</sup> <https://www.healthline.com/nutrition/ketogenic-diet-101>

us. I think there has been a very [big effort to try to quash low carb](#)<sup>82</sup> again by Harvard University who is sort of leading the charge to try to, well pretty much to kill low carbs so that they can promote their high carbohydrate vegan diet and they come out with studies. They sort of mine old data sets to try to show that going on a low carb diet, which shortened life, that [one](#)<sup>83</sup> came out last August and that does dampen people's enthusiasm and they wonder about it and how do you really know, maybe you reverse your diabetes, you've lost tons of weight, you feel great, but maybe somehow all those health benefits will result in your life being shortened. It seems implausible. But the question is there and especially if it comes from Harvard.

Emily: Right. I think the fact that it's Harvard too is just, I mean obviously that should come with some credibility. Living in Boston, I feel like it's mind blowing when you talk to people who just sort of assume, oh they're the best of the best. And [Walter Willett](#)<sup>84</sup>, you know, obviously better than I do is a vegetarian or vegan. And will you talk a little bit about the makeup of the 2020 guidelines committee?

Nina Teicholz: Yeah. Before we do that, do you want me to go back at all and talk about the senates like committee on nutrition? Because you raised that.

Emily: Yeah sure.

Nina Teicholz: They talked about it. But I could give you just a quick timeline of the origins of this idea because it is important. I mean you don't necessarily need me to say it, but I mean it is sort of one of the major contributions in my book and also Gary's [book](#)<sup>85</sup> is to talk about this origin of this idea, which is the idea that saturated fat and cholesterol are bad for health. It started in the 1950s with the heart attack of President Eisenhower who is out of the Oval Office for 10 days and really heart disease had risen from being pretty much nonexistent to being the number one killer in the nation. And to understand this, you have to realize these men who are dying, their fathers had not died of heart disease. They had lived long lives and all of a sudden men are being failed in the prime of life and it's really a national emergency. And into this vacuum, in this vacuum, there are a number of ideas. People think maybe it's vitamin deficiency that causes heart disease. Maybe it's increased auto exhaust, seems plausible. Maybe it was a type A personality where you went around yelling at everybody and then you died. But into that vacuum stepped Minnesota pathologist Ancel Keys and it was his theory that it was saturated fat and cholesterol that would clog your arteries and give you a heart attack. That was called the [diet-heart hypothesis](#)<sup>86</sup> and it was just one idea but Ancel Keys, it's a really fascinating story that I hope everybody gets to read because he is really, it is a story that shows how powerful one individual can be, particularly one man, one very aggressive, extremely self confident man who took this idea. He got himself onto the nutrition committee of the American Heart Association,

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<sup>82</sup> <https://www.hsph.harvard.edu/news/hsph-in-the-news/eat-moderate-amount-of-carbs-for-health/>

<sup>83</sup> [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(18\)30135-X/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(18)30135-X/fulltext)

<sup>84</sup> <https://www.hsph.harvard.edu/walter-willett/>

<sup>85</sup> <http://garytaubes.com/works/books/why-we-get-fat/>

<sup>86</sup> <https://ebm.bmj.com/content/early/2019/07/10/bmjebm-2019-111180>

which was desperate to give people advice about what to do to prevent heart disease such that in 1961 is the first ever [advice](#)<sup>87</sup> published anywhere in the world by the American Heart Association telling men to avoid saturated fat and cholesterol in order to prevent a heart attack. And that's really where it all started. That is like the tiny acorn that grew into the giant oak tree of advice that we have today. And that was the beginning of saying don't eat red meat, low fat dairy and stay away from anything that has saturated fat in it and replace it instead with polyunsaturated vegetable oils. So like [Procter and Gamble](#),<sup>88</sup> which was a big funder of the American Heart Association would rather you have Crisco oil or margarine rather than butter. And that's where it all started. And then the American Heart Association, which was really the only public health group in town giving any advice, doing anything, they were able to get their ideas adopted by the U.S. Government, which was this huge coup for their ideas for Ancel Key's idea. And that all happened basically the Senate Select Committee on Nutrition, this powerful senate committee that had originally been charged for looking into questions of malnutrition, didn't want to disband, had some money to spare, turned their focus towards questions of what they thought was over nutrition, the killer diseases, the killer diseases, which had always been heart disease, but then cancer was coming up too. So they started looking at those diseases and the American Heart Association was able to get its ideas really wholesale adopted by that committee. And it's a really fascinating story. There's one senate staffer named [Nick Mottern](#)<sup>89</sup> who pretty much wrote the whole [report](#)<sup>90</sup> for that committee. He had no background in science, no understanding of confounders in epidemiology or any of the subtleties of the science or what he was dealing with, and he himself was sort of leaning into vegetarianism and that's how we got the U.S. Government behind this diet.

Emily: And he was also a journalist, I interviewed him for that film too, so I have funny footage of him and I in a coffee shop.

Nina Teicholz: Fantastic footage.

Emily: He was funny too because he basically said to me that he was really interested in sort of population problems and vegetarianism, but that he was also a journalist from Providence, like he didn't really know what he was doing and he was kind of just picked up to figure this all out and put it together in a way that could be packaged.

Nina Teicholz: Right. You were like thinking about it for consumer news or something. He had no background in nutrition or public health or anything. He bought this idea [Frances Moore Lappés idea of diet for a small planet](#)<sup>91</sup> meant eating mostly plants. He really bought into that idea and he saw the meat industry as being like big tobacco in his mind and so he would see these guys in cowboy hats come scribing through the office to talk to McGovern and for him it

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<sup>87</sup> <https://academic.oup.com/jn/article/128/2/449S/4724049>

<sup>88</sup> <https://us.pg.com/>

<sup>89</sup> <https://www.fatisourfriend.com/how-fat-became-the-enemy.html>

<sup>90</sup> <https://catalog.hathitrust.org/Record/002942186>

<sup>91</sup> <https://www.smallplanet.org/frances-moore-lappe>

was like an evil industry that was covering up an unhealthy product, which for him red meat was like tobacco.

Emily: But you see what's so interesting to me is that like when I go back and I look at the transcripts from those interviews too, it's like I can't help but see the humanity. I mean it's like we have to have protocols for guidelines because I mean like I can say I'm a mediator. You would say I'm biased just the same way that somebody who's vegan is going to be biased. But we have to be able to either be self aware or put the scientific rigor of recommendations above and obviously there are standards for how you do these things and it doesn't seem like we're doing that with the guidelines like we weren't then. And we're not now.

Nina Teicholz: Right. Everything you say is correct. What happens in scientific committees, there are standards about how they're run, recognizing that bias exists. Of course, bias exists. Nobody should ever say they're unbiased unless they come to a field having never known anything about it before. But anybody who's on an expert committee comes to it with a bias in favor of their own ideas. And so what good scientific committees are supposed to do, and the U.S. Dietary Guideline Committee was told by the National Academy of Sciences on this go around to please do this, but they didn't. They're supposed to manage bias. So in any given question, you recognize the bias and you manage it. So you have one person on this side, one person on that side, maybe another person, couple of people in between who really have no opinion on a subject managing biases is one of the things you're supposed to do in science. Recognizing that everybody comes to their field with some kind of bias, not pretending that you're unbiased. So our dietary guidelines have never been run in a way that meets any kind of guideline standards that are recognizable. They don't use preset protocols for their systematic reviews. They don't follow their own protocols for systematic reviews. They lack complete transparency about how the committee is selected. They don't disclose conflicts of interest on the committee, although that is standard thing to do in any kind of set of guidelines, you are able to see people's conflicts of interest, not so with the dietary guidelines committee. They just don't follow any set of scientific standards. And recently the National Academy of Sciences reviewed the dietary guidelines process and they came out concluding, you know, they lack transparency. They have a lack of scientific rigor. They need to be more transparent, they need to disclose conflicts of interest. And they came out with this whole series of recommendations, almost none of which the dietary guidelines agencies picked up or adapted. So I mean it really is this terrible situation. And as far as I know, my group, the one that I started purely in the interest of evidence based guidelines, we're the only watchdog group. We're the only group that is documenting what is going on and writing about it and talking about the problems of the conflicts of interest and talking about the lack of scientific rigor. There's no other group that is doing this.

Emily: Is it just because nobody in Washington wants to take this on as what they're going to use their political capital to sort of, I don't know, expend or this is going to be their issue to fix? Like does nobody feel passionately enough about it?

Nina Teicholz: Well, I think that, so there's really been one group that has dominated the sort of the public interest space, which is called [Center for Science and the Public Interest](#),<sup>92</sup> which has been around since the early 1970s and they came to adopt the government's viewpoint. If you stay in Washington long enough, I think that you become cozy with government and so they defend the guidelines. They were always promoted low fat and they were anti-saturated fat. The head of that group is a vegetarian and the narrative that they were able to persuade everybody of, the public health community. Everybody believes this narrative that there's nothing wrong with the guidelines themselves. What is the problem? That people don't follow the guidelines faithfully enough and therefore the whole conversation in public health is, how do we get people to better follow the guideline? Now it's called Social and Behavioral Determinants of Health, which are all about trying to get more fruits and vegetables and whole grains to people. There's no questioning of the guidelines themselves. It's just sort of sacrosanct.

Emily: That's insane though. I mean it's just insane.

Nina Teicholz: Such a lack of curiosity. And when we come in with our narrative and our [data](#),<sup>93</sup> which is incredibly strong, our data shows that in every food category tracked, people have really adhered to the guidelines. You know, red meat is down by 28%, grains are up by 40%, since 1970, there's every category you can look at, Americans have done the right thing. Butter and eggs and whole milk are down, fruits and vegetables are up. So if you show them this data, they just ignore it.

Emily: Well, you know, it's funny because when we interviewed Dr. Hallberg, one of the things that she said to me, that I thought was just so funny, was this idea of the criticism that she often hears is like if we tell people to eat low carb, that's ridiculous. Like can't tell them to take out a whole food group. And she's like, but you did. And they did. Like you told them to take out fat and they did and it didn't work. So now we need to like kind of think about this again.

Nina Teicholz: Yes. I agree with her. I mean, but the reality is is that again, big public health organizations, they've all bought into this hypothesis and they've had millions and millions, hundreds of millions of dollars spent pursuing this hypothesis. And so this idea of what a healthy diet is, and so they really are so invested in it that they can't change.

Emily: But it's like if you look at these secretive studies, which you've done a really good job of exposing, I sort of feel like there's actually research the government paid for that showed this wasn't the way to go. Do you know what I mean?

Nina Teicholz: Right. And then some of the more independent think tanks, like take some of the think tanks like [Brookings](#)<sup>94</sup> or [Heritage](#)<sup>95</sup> or you know, some of the other think tanks that are in

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<sup>92</sup> <https://cspinet.org/>

<sup>93</sup> <https://ninateicholz.com/new-us-food-availability-data/>

<sup>94</sup> <https://www.brookings.edu/>

<sup>95</sup> <https://www.heritage.org/>

Washington, D.C., they have somebody on economics and they have somebody on health and they have somebody on this and on that. But it's like nutrition has just been this overlooked field. Nobody's paid attention to nutrition because it was just overlooked. So there haven't been any other independent voices in this space. There is nobody in Washington D.C. other than my group that takes a critical eye to the guidelines.

Emily: I mean, I feel like [Russ Greene](#)<sup>96</sup> is sitting in an office somewhere saying, what about me? And like [Crossfit Health](#)<sup>97</sup> is doing some really interesting stuff I think.

Nina Teicholz: He's not doing stuff on the guidelines though. I don't think so.

Emily: You don't think that?

Nina Teicholz: No. I mean Russ Greene is a fantastic reporter and he is one of the only reporters who discloses, goes after nutrition scientists. And this is another thing that's a failure of journalism, which is in journalism, one of our adages is follow the money. But in nutrition it's like nobody ever thinks that, oh I wonder if who's funding that study or I wonder who is going after the money or what about that guy who's constantly quoted what is all his spending?

Emily: Can you talk a little bit and then I'm gonna let you go, because I think we probably promised you an hour, but about women and fat in particular because I know the chapter in your book that's so upsetting about sort of women and children and I mean there is generally such a sort of misinformation that when people are reporting on even clinical trials, how rarely women are involved in those studies. Even like in mice studies, I'm always dumbfounded by like, you can't even throw female mice into the bad mix of.

Nina Teicholz: That's funny. I didn't know that. Well all of nutrition science was really the original problem was heart disease that had been the original chronic disease to show up in the American population, and really obesity and type two diabetes didn't come till later. So, and heart disease was a disease with men originally. Women were really not struck by it. Were not afflicted by it in the 30s, 40s, 50s, 60s. So all the experiments, almost all the experiments, were conducted entirely on men. There's only one [experiment](#)<sup>98</sup> that I know of where it was men and women, but they started to prescribe this diet, The American Heart Association started in 1970, prescribing a low fat diet for all Americans based on really zero data on either men or women. But you could try to make a case that there was some data for men, but there was really zero data for women. And then the U.S. Government was prescribing this diet to men and women on zero data based on zero data for women. And then finally in the 90s somebody looked around and said, hey, we have zero data on women. We need to study women. And so the first couple

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<sup>96</sup> <https://keepfitnesslegal.crossfit.com/author/greenplusane/>

<sup>97</sup> <https://www.crossfit.com/health>

<sup>98</sup> <https://www.ahajournals.org/doi/10.1161/01.CIR.98.9.935>

National Institutes of Health [studies](#)<sup>99</sup> that were funded were done on working employees in Washington state. And what they found was that a low fat diet turned out to be, seemed to be, especially bad for women. Which is that on low fat diet, everybody sees their good cholesterol drop, which is a sign of increasing risk of heart disease. But for women it dropped even more and that has been a consistent finding. And then when they did the largest ever test of the low fat that called the Women's Health Initiative, which was on nearly 50,000 women across America, and the results of that experiment came out in 2006 after these women had been on a low fat diet for seven years on average. And at the end of that, they found no benefit for cutting out fat for anything they studied. The main outcome was cancer, no benefit for any kind of cancer. And they looked at three or four different kinds. No benefit for protecting you from heart disease. The women who had been low fat diet were like a pound and a half less than the other women after seven years and no protection against type two diabetes. So it was a complete failure. But at that point, women had already been prescribed this diet so they didn't change their recommendations for women. But again, it looks like the low fat diet causes women the increased risk of heart disease for women even more than it does for men. And so then it's especially dangerous for women. One other thing that is true about women is that women, because we worry about our weight, we are what are called really good adherers. Like we stick to diets because we don't want to be overweight. And so the low fat diet has always been sold as a diet to not only keep you healthy, but also keep you thin. And so women have been the most assiduous adherers to the low fat diet.

Emily: Which should make us like perfect subjects.

Nina Teicholz: Yeah, we're perfect. We will do everything we're told. We will starve ourselves. I used to eat, I used to bake fish in tinfoil or in parchment because I didn't want a single drop of fat to touch it. No olive oil, nothing. So we do that and if [you look at rates of heart disease, they have gone up most among middle aged women](#)<sup>100</sup> and [our life expectancy has declined](#).<sup>101</sup>

Emily: And so there seems to be a direct connection. And I want to be careful because I know a lot of this is probably based on epidemiology, but it does seem like [when you eat more saturated fat, your HDL](#)<sup>102</sup> [goes up](#).<sup>103</sup>

Nina Teicholz: Correct.

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<https://www.nih.gov/news-events/news-releases/news-womens-health-initiative-reducing-total-fat-intake-may-have-small-effect-risk-breast-cancer-no-effect-risk-colorectal-cancer-heart-disease-or-stroke>

<sup>100</sup> [https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68\\_05-508.pdf](https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_05-508.pdf) \*U.S. women

<sup>101</sup> <https://www.aafp.org/news/health-of-the-public/20181210lifeexpectdrop.html> \*U.S. women

<sup>102</sup> <https://medlineplus.gov/hdlthegoodcholesterol.html>

<sup>103</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC288145/>

Emily: Just like [when you eat more carbohydrates, your triglycerides go up](#)<sup>104</sup>, but there is this cause and effect. and [women already have higher HDL on average than men.](#)<sup>105</sup> So is there anything to say that like eating fat, I'm sort of maybe thinking like the menstrual cycle or our need for iron or other things like that, is more important for women because of those things?

Nina Teicholz: Well it is true. First of all, that saturated fat is the only food known consistently to raise your HDL, which is your good cholesterol. So when you go to your doctor and your HDL is low and they say, oh, you can exercise some and drink some red wine. But those have very small effects. The most efficient thing you can do is to eat saturated fat. Women, the reason they need to eat saturated fat is not for particularly the fat itself, but what the fat comes in. So what is the fat coming in? Women tend to avoid, what all people tend to avoid when they don't want to eat saturated fat, is they tend to avoid red meat, right? That's the top one. And red meat contains [iron](#)<sup>106</sup> and [folate.](#)<sup>107</sup> which are really essential to good health. And women are more susceptible to anemia, which is the lack of iron, and they are [causes more problems for them in terms of reproduction](#)<sup>108</sup>. And I know because I had, I was anemic for decades and had a troublesome first pregnancy when I was a vegetarian. And then when I started eating red meat and my anemia went away.

Emily: And did anybody suggest that?

Nina Teicholz: I was just going to say, no doctor ever suggested eating red meat. I was given iron pills, but you don't absorb nutrients as well from pills as you do from food. Because in food it comes packaged with the various other things that you need to absorb, say the iron comes with folate. So nobody ever told me to eat red meat. In fact, they told me cut down your saturated fat. But you know, for women that's extremely important, especially for reproduction. I mean if I can just say one thing, women are the ones who give children. And originally the whole idea of healthy nutrition was the diet that would support healthy life and reproduction. So they would study animals through generations to see like, well what is the diet that produces the healthiest offspring that lived the longest? And the shortest lifespans or of the mice where they've done these multigenerational [studies.](#)<sup>109</sup> the shortest life span of the offspring were the children of vegetarian mice. No matter how hard they tried, they could not get their children to live long. So it may be that you as an individual can make it on a vegetarian diet. You store nutrients in your body, they take a long time to deplete. You can maybe have a healthy life and you can live. But what about your children? According to the data we have, they will not live as long. So really you're supposed to look at a diet if you can, that will support healthy reproduction. And that is something that women, it's just not a message that women have really heard, what will support your baby?

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<sup>104</sup> <https://www.ncbi.nlm.nih.gov/pubmed/11584104>

<sup>105</sup> <https://www.hopkinsmedicine.org/health/wellness-and-prevention/why-cholesterol-matters-for-women>

<sup>106</sup> <https://medlineplus.gov/iron.html>

<sup>107</sup> <https://ods.od.nih.gov/factsheets/Folate-Consumer/>

<sup>108</sup> <https://www.hematology.org/Patients/Anemia/Pregnancy.aspx>

<sup>109</sup> <https://www.sciencedirect.com/science/article/pii/S1550413115002752>

Emily: Yeah, there's that great book, [Vegetarian Myth](#).<sup>110</sup>

Nina Teicholz: Oh yeah.

Emily: And she sort of does a wonderful job of talking about how her health deteriorated despite her best efforts to be this very staunch, careful.

Nina Teicholz: Yeah. I know a lot of women who've had children with autism and learning disabilities, and they've had other children who are healthy, and what changed for them was their diet. They were all vegetarians. And then they decided that's not healthy for my children. I'm going to change. And it really did change the outcomes of their next pregnancies. And there's so much guilt associated with that.

Emily:

I really enjoy talking to Nina. I felt like she answered so many questions that I had and also helped me to further understand things and I hope you all did too. I know this idea of vegetarianism and veganism and carnivore and Paleo and Keto and all that stuff is really on the front of a lot of people's minds and it seems to be a really emotionally charged issue for a lot of people, including members of my own family and close friends. And so, you know, I kind of hope that we can all just go back and refer to the data and certainly in our show notes this week we're going to give links out to everything that was mentioned. So if you're curious about any of this that you want to look into it more, I also highly recommend Nina's book, which is a really good read. It's a fun read, but it's also packed with really good information. Okay, thanks. Bye. I'm Emily Kumler and that was Empowered Health. Thanks for joining us. Don't forget to check out our website at [empoweredhealthshow.com](http://empoweredhealthshow.com) for all the show notes, links to everything that was mentioned in the episode as well as a chance to sign up for our newsletter and get some extra fun tidbits. See you next week.

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<sup>110</sup> <https://www.amazon.com/Vegetarian-Myth-Food-Justice-Sustainability/dp/1604860804>