

Emily: I'm Emily Kumler and this is Empowered Health. This week on Empowered Health, we're going to continue our conversation with author and investigative reporter [Gary Taubes](#)¹, who has written extensively on how the sort of food guidelines, dogma beliefs around a low fat diet are flawed and we're probably flawed from the get go. If you haven't listened to that conversation from last week, I would suggest you do that first. If you only have time to listen to one episode and this one appeals more, I hope you enjoy. Here's Gary. So when you look at the landscape of all of where we are today and there's like obviously all these people who are doing the [Ketogenic Diet](#)² and getting great results and social media is sort of everybody in their silos yelling at each other. But there are these sort of small steps. I mean when we interviewed [Sarah Hallberg from Virta](#)³, it was like astounding to me that they haven't gotten any press or very little press.

Gary Taubes: They're not as much as [Kevin Hall](#)⁴.

Emily: Not as much as Kevin Hall. So is that because the, I hate to say like the media has been co-opted, but like this sort of eastern corridor that you mentioned before is still in full effect. I mean the Harvard just published in the [BMJ](#)⁵, [the story about red meat](#)⁶, which is based on food frequency. I mean like some of the stuff is still happening even though there seems to be like grassroots efforts and certainly I mean your books have been bestsellers. You maybe aren't a staffer at the New York Times, but you've published major pieces in the New York Times that have generated a lot of interest read by a lot of people. And yet there is still this sort of entrenched, dogmatic approach to the old way of thinking of calories in, calories out, let's move all this kind of stuff that doesn't seem to be based on anything. So is that just ignorance or is there some other sort of, I mean, not conspiracy theory because I guess it could be not a conspiracy theory, but something that's actually true at play because

Gary Taubes: I think it's, again, it's sort of, it's a kind of emergence phenomenon in journalists society. If you think about sort of other fields, sports, politics, crime, people have their beats and they stay with those beats for decades. So sports writer, the guy who's been writing about football and basketball for the New York Times has been writing about him for 20-30 years. It's what he does. He understands the world. You can't bullshit him. And he thinks he knows. In nutrition, you've got people who've been covering the field for 20 or 30 years, but they've been believing the conventional wisdom that whole time. So they're locked into one perspective. And so for instance, if I'm right, [Gina Kolata](#)⁷ is wrong at the New York Times and if I'm right, [Jane Brody](#)⁸ is wrong at the New York Times. And it's hard for them to accept that they can do their work for 20 or 30 years and just be bad at it. So their assumption is that

¹ <http://garytaubes.com/>

² <https://www.healthline.com/nutrition/ketogenic-diet-101#takeaway>

³ <https://www.virtahealth.com/about/drsarahhallberg>

⁴ <https://www.niddk.nih.gov/about-niddk/staff-directory/biography/hall-kevin>

⁵ <https://www.bmj.com/>

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<https://www.bmj.com/company/newsroom/increasing-red-meat-intake-linked-with-heightened-risk-of-death/>

⁷ <https://www.nytimes.com/by/gina-kolata>

⁸ <https://www.nytimes.com/by/jane-e-brody>

they're right and I'm wrong. If I was in their shoes, I would feel the same way. It's very hard to accept that you might have spent your whole year, your whole professional career, promulgating nonsense.

Emily: But that's just a direct echo of what you're saying is happening in the scientific community.

Gary Taubes: Yes, yes. So you've got people who've been covering this field for a long time who faithfully reported the conventional thinking and that's what they believe and they have understandable difficulty in accepting that they're just wrong and that they are wrong and have done harm. So they tend to still want to report studies that suggest that they were right. Remember then you've got the nutrition research communities generating this random noise all the time. So you could always find a study that supports you. And then one of the tendencies in a newspaper world is to think that this stuff's relatively simple than media in general and that anyone can cover it. So I'm often hearing, I heard from a writer a few months ago, I just responded to my email today, who's doing a piece, he's written for newspapers like Vanity Fair and Esquire and he's now doing a piece on the Keto Diet, but he's never covered this before. So now you walk into a field where you've never covered. It's all new to you. And if you're a journalist you think, well I've got to, I'm going to talk to a dozen experts. That would be a lot for a magazine article. I promote journalists and I'm going to get 10 of them are going to reiterate the conventional wisdom and then maybe I'll talk to, I can't talk to [Teicholz](#)⁹ and Taubes because they're journalists. So I'll try to find a few academics who maybe pushed this ketogenic diet thing, but they may not even understand as well as Teicholz and Taubes because they're newer to it and they haven't done the work we did. So you end up recapitulating the conventional wisdom because that's what the community believes and you're just doing your job and it's very hard to say, okay, well, Geez, I did interview Taubes or Teicholz and what they said was so compelling that I'm going to decide that the academics were wrong. That research is impossible do. And even if you do it, your editor's going to say, no, no, no, no, no. You can't do that because your editor hasn't talked to Taubes and Teicholz. So you end up with a situation where you put in their perspective, but it's still counterbalanced by the much greater weight of academics who believe that conventional thinking. It's what makes this so tricky.

Emily: Well, yeah, the counterbalance part is I think that that's a really important point to make. I feel like there was a story that I was working on about [Seyfried's work](#)¹⁰, that cancer research article that was killed because I basically couldn't find anybody to explain to me why he was wrong. And the editor I was working with was like, no, you need somebody to say something beyond, no, that just doesn't make any sense. And nobody could get into it with me. I remember thinking this is ridiculous and it's like taking so much of my time to talk to all these people who are sort of like, oh, that's interesting. I haven't looked at their transfer experiments. So like I don't really know and I will do you want to look at them? Just like what? And that's interesting.

Gary Taubes: That's what's even interesting because these people get funded if they're good, they get funded to do something that they already think is interesting and is fascinating and they're not getting enough money to do it. So they're working their asses off making ends meet to study what they are

⁹ <https://ninateicholz.com/>

¹⁰ <https://tomseyfried.com/>

already thinking. And now you come along and you say, what about this stuff? And they say, that's interesting. And it might be interesting to them, but they can't actually just turn around and start studying it because they'd have to get funding to study it and they'd have to stop studying what they'd been doing all along. Or at least put some time. People get locked into what they're doing and what they believe, so that even if they find something else that's interesting, and this is even more true for diet because it's virtually, the diet trials takes so long and take so much money, but you can't just say, hey, that's interesting. I'm going to do that instead because our funding doesn't really allow for that. And if you try to put together a proposal to study what Tom Seyfried is studying, and then you put the proposal into the [NIH](#)¹¹, the other people on the grand committee are going to look at it and say, well, we think Seyfried's wrong, so we're not going to fund your proposal. Unless they're a really informed good scientist in which they might say, well, we really need somebody. If John at Harvard thinks this stuff's interesting, maybe there is something to it, so let's fund him to replicate it. But for the most part, that doesn't happen.

Emily: What is different in the environment today than it used to be that people aren't following up?

Gary Taubes: It's not that they're not following up. It's in these fields there are so many different avenues of study. There's so many different things you can study that can sort of, you've got these disciplines and sub disciplines, and sub sub sub sub sub disciplines and you get slotted into one early and that's what you build your career on and that's what you get your funding on and that's what your postdocs are studying and that's what your graduate students are studying. So you get locked in and maybe, in a field like physics, they're lucky. There's only a few. They all pretty much except that there are very important problems they want answers to. But in medicine and public health and nutrition, there are a gazillion interesting questions you could ask. Ideally someone would be saying, well, we have obesity and diabetes epidemics so these are the most important questions and let's focus our attention on those. But I think you need a layer of administration above that which currently exists or outside that which currently exists to make those, come to those conclusions. One of the lessons here, [my second book was on cold fusion](#)¹². This was this scientific fiasco, a way that basically you could generate nuclear fusion in a glass of water with a palladium electrode plugged into a wall socket. So it's sort of infinite cheap energy. And it exploded on the scene in [1989 announced by these terrible scientists at the University of Utah](#)¹³ and backed by the university. And what's interesting is because it was so big and it was the front page of all the papers, and suddenly there was this promise of an enormous amount of funding to study it. Oh wow, if [cold fusion](#)¹⁴ is real, this is the future. So all of these incredibly mediocre to poor scientists who are wasting away their careers doing fourth rate work and barely getting funding can look at this and say, if I can replicate that, I could be at the forefront of science getting a lot of funding. I can be back in the game. And so the idea was even when you do have something that's really interesting, the really good people are already doing stuff that's got them busy. They don't have the time or the bandwidth or the funding to move into this field. It's the people you attract are the bottom of the barrel of science. So even if, and again I have no solution to these problems, I'm just saying that

¹¹ <https://www.nih.gov/>

¹² <https://www.amazon.com/Bad-Science-Short-Weird-Fusion/dp/0394584562>

¹³ <https://www.asme.org/topics-resources/content/cold-fusion-25-years-later>

¹⁴ <https://coldfusionnow.org/what-is-cold-fusion/>

even if it's interesting, you're going to get as many bad scientists working on it as good scientists. This is one of the things that worries me even now with stuff like what Tom is doing and [Luke Hanley](#)¹⁵ at Harvard, well now and Cornell, what they've been doing is fascinating, but the really good people in their field are doing other things and are busy doing other things and are doing other things that fascinate them and that they've got a huge investment in. So the people who are likely to, and for young people come along, a very smart young person who comes along or a very talented young scientist who is really risking his or her career to do something that's so out of the box.

Emily: Well, and I feel like there's also the impact of all the publishing

Gary Taubes: Well and the publishing is much, much harder. I mean you could get almost any crap published in a decent journal that supports the conventional thinking. If it's fashionable.

Emily: Well, but also replicating studies is no one ever wants to pick that up in one of the top journals. So that just doesn't happen I don't think very often.

Gary Taubes: One of my favorite quotes from science is back from my physics days, a Nobel laureate at MIT named [Sam Ting](#)¹⁶ and I hope I can get this right. He said to be first and right in science is very good. To be first and wrong is not so good. To be second and right is meaningless. And so what he meant was it's like you always want to be first, you don't want to like, you end up replicating experiments because you want to go beyond the work that somebody else did. And you had to confirm that what they did was right to base your work on an incorrect assumption. But other than that, just replicating for the sake of replicating, it's like why bother? You don't go into science because you want to prove that your buddy at MIT should deserve the Nobel Prize you're going because you won't think you deserve it. So there are a lot of fundamental problems with science when it gets to this kind of industrial scientific establishment that we're looking at this science as a career and a business and a rather than science as an obsession where there's 20 sort of people being supported by their family money and trying to answer questions in their basement building apparatus, which is what it used to be. And even then they got the wrong answer more often than not.

Emily: So let's talk about your sort of career switch going from journalism to cofounding running [NuSI](#).¹⁷ The idea behind NuSI had been the nutrition science initiative.

Gary Taubes: It's a virtual organization. I run it. [Mark Freedman](#)¹⁸ is the science advisor. We have an accountant who files her taxes and gets paid, markets paid. I do it as a hobby. We're not very effective these days. We have to be more effective. Still have studies we would like to get funded, but it requires raising a lot of money to do it.

¹⁵ <https://chem.uic.edu/profiles/luke-hanley/>

¹⁶ http://web.mit.edu/physics/people/faculty/ting_samuel.html

¹⁷ <https://nusi.org/>

¹⁸ <https://nusi.org/about-us/leadership/>

Emily: Okay. So let's talk a little bit about, my understanding was you did an interview and the [Arnold's](#)¹⁹ heard the interview and wanted to fund a study based on your sort of approach to the problem. Is that accurate?

Gary Taubes: Yeah. I did a podcast, an economics podcast, [EconTalk with Russ Roberts](#).²⁰ And [John Arnold](#)²¹ was a listener back when there were only 20 podcasts. And so yeah, I got an email from John saying that I had talked about this study that I thought needed to be done in obesity research that can help resolve this controversy that I've done my best to create. And he wanted to know if we had a proposal and a budget and we didn't. So with [Dr. Peter Attia](#)²² we started talking to the [Arnold Foundation](#)²³, Peter and I had met up and we're in the process of founding NuSI to raise money to do this experiment, thinking that this would be a nights and weekends type of thing and we would do crowdsourcing and the experiment would cost about \$2 million and that that money could be raised. We were naive about the costs and the experiment. And probably naive about whether we could have raised the money. Anyway, so the Arnold, John Arnold, was a hedge fund billionaire, very young, 39 years old at the time, net worth of about \$4 billion, had a foundation with his wife, Laura, [The Laura and John Arnold Foundation, LJAF](#).²⁴ And was interested in the problems with modern science. And what I was talking about is what we've been talking about, which is all these problems in modern science, particularly in this case, how they manifest themselves in nutrition and obesity research. So they decided to back NuSI and to support us in supporting four studies that we thought should be done. And those studies have been done and the results are ambiguous, as the results of studies typically are. And after our initial five years of funding ran out, I think they were a little frustrated with the amateur nature of our organization. And what we tried to do was pretty much unprecedented, which is create a research foundation from scratch. So even though we had good support, we were making it up as we go along. I describe it as kind of the hardy boys decide to start a nonprofit and we did some things right and some things wrong and it was a learning experience. The entire operation was a learning experience. We funded some interesting studies and it would have been great if we could have kept building at that level because there's an enormous amount of research that still needs to be done and the existing nutrition, obesity research community seems to be either incapable or uninterested in doing these experiments and certainly doing them correctly. So

Emily: So when you decided to do the experiments and using the criticism that you have of the industry, you were going to have these experiments be designed differently so that they could actually test something and have some sort of outcome. And then it seemed like, then again, you should correct the record if any of this isn't quite right, but my understanding is that then it's almost like you had to work with people who were in the industry. You couldn't hire physicists to run nutrition experiments. You had to find the best of the crop of people who maybe by your own account hadn't been trained to be scientists in such a rigorous way as you might like to perform the experiments. But with your oversight,

¹⁹ <https://www.forbes.com/profile/john-arnold/#194d7c681100>

²⁰ <http://www.econtalk.org/>

²¹ <http://www.econtalk.org/>

²² <https://peterattiamd.com/>

²³ <https://www.arnoldventures.org/people/>

²⁴ <https://www.arnoldventures.org/people/laura-arnold-john-arnold>

the hope was that these would be designed in a way that would be better or that would sort of start to raise the bar a little bit in terms of the expectations, but then there was a turn of events where the power of your sort of ability to design or critique or make sure the methods were proper or even the idea of voicing criticism about the methods was usurped by the people who were conducting the experiment. Saying that in order for the experiments to have any integrity, you needed to not be involved. And I remember on a sort of personal level when I heard that I thought, well, isn't the whole point of this that it should have Gary's stink all over it because you were maybe not the principal investigator or whatever the title would be of the scientist who's doing it, but it was based on your hypothesis that things hadn't been done properly and that there would be a better way to do it. Can you talk a little bit about what happened at that stage?

Gary Taubes: Yeah, so the way you described it is pretty good. First of all, the experiments, so what I've been arguing since my first book, [Good Calories, Bad Calories](#)²⁵, is again this idea that obesity is a hormonal regulatory disorder. It's not a medical community, we'll call it an energy balance sorters, not about how much calories you weed versus calories expended. It's not eating too much. It's a hormonal disorder that's triggered by the carbohydrate content of the diet and the carbohydrates raise insulin, which basically puts your body into a mode where your fat cells are taking up fat and holding on to them and you get fatter. And this is a very different idea. Scientists would say it's a different paradigm, a word that's overused to death these days, but it is very much in the different paradigm from this energy balance idea.

Emily: And the [energy balance idea](#)²⁶, just for our people who don't know is the idea that like I eat a thousand calories a day, but if I only burn off 900 then my body's storing a hundred and that's what over time is making me fat.

Gary Taubes: Yeah. So the reason you get fat is because you are either not expending enough or you are taking in too many calories. So these two, they're both high. They're paradigms are both hypotheses and they make predictions and the way science works, the more predictions a hypothesis can make the better it is, and the more useful. And so what do you want to do is find an experiment in which the different hypotheses make different predictions about what would happen. So in this case, and this is the experiment we wanted to fund, that one lab where you have your subjects and you fix how many calories they're consuming and you change the macronutrient content of the diet dramatically. People get fat over the course of decades. You can't do the experiments for decades, you can only do it for a few months if you're going to fix exactly how many calories you're going to allow them to eat. And so you kind of make it a more extreme version of the experiment of what might actually happen in real life so that you can see an effect in a couple of months. So you fix how many calories they're consuming at a level at which they maintain a stable weight. And then you ideally randomize to one of two diets. One of them gets a ketogenic diet. So this hormonal hypothesis says, carbs are the problems. So if you remove all the carbs and replace them with fat, you keep insulin levels low, they don't gain fat. So in one diet, ketogenic diet, is just that. You get rid of the carbs, you replace with fat, but you keep their calories high.

²⁵ <http://garytaubes.com/works/books/good-calories-bad-calories/>

²⁶ <https://www.nhlbi.nih.gov/health/educational/wecan/healthy-weight-basics/balance.htm>

Emily: And you let them eat as much as they want.

Gary Taubes: Well, no, you're fixing how much they're allowed to eat. So let's they can eat 3000 calories. So I'm a subject, let's say I can eat 3000 calories without gaining weight and the 3000 calories is on a standard American diet with 50% carbs. So now I get rid of the 50% I replaced them with fat, but I still have to eat 3000 calories. And if you believe that obesity is all about intake and expenditure and how much we eat and how much we exercise, if I'm staying with 3000 calories, my weight isn't going to change because the only way my diet influences my weight is by how many calories I can eat. Simplistically, there's issues about how much you absorb and stuff and how much protein. And then this other hypotheses, this carbohydrate-insulin hypothesis says if I get rid of the carbs and replace with fat, I'm going to keep insulin low. And if I keep insulin low, I'm going to mobilize fat from my fat tissue and I'm going to burn that for fuel. And there's no law of physics that says I can't increase how much energy I burn, expend. So I'm going to fix calories and my expenditures going to go up and I'm going to lose weight simultaneously. I'm going to lose weight and my expenditure is going to go up. So I can measure that. I can measure weight and I can measure energy expenditure. And my two hypotheses make different predictions. So this is a simple part of the experiment. It turns out one of my learning experiences is, was that these things may sound simple, but they're incredibly complex and incredibly challenging, and you don't learn about how you might screw up until you're doing the experiment. This is why in an ideal world, the experiment takes you three days to do and only costs \$50 because it's guaranteed in those three days you're going to learn how you screwed up and it's going to take you another three days and another \$50 for a year before you decided you've done the experiment in a way that you haven't screwed it up.

Emily: Where you're refining constantly and improving.

Gary Taubes: Refining and going back to the beginning constantly. Anyway so this was what we did. And yet if we had recruited researchers who believed what we believed, the results wouldn't be believed by the rest of the community because they'd be considered biased going in. So that was one reason to recruit conventional scientists who believe that conventional wisdom and actually helped generate the conventional wisdom. And in the course of my research, I interviewed, I think 600 people for "Good Calories, Bad Calories." I mean virtually anyone, everyone who had ever done meaningful work on any aspect of diet, nutrition, obesity, chronic disease. And so in the course of that research, I had met researchers who I thought were open minded and sounded like good scientists and whom I thought would follow the data so they wouldn't let their preconceptions and their belief system get in the way and would do good science. Now I made a critical mistake, I think, they disagree. But the fact that they had been able to survive for 40 years in this polluted culture of nutrition, obesity research, should have told me that they can't do this job, that their standards were not high enough because they never would have been able to survive if they had. But anyway, these are the people I recruited, we recruited, they were happy to do the work. They brought in some colleagues and then there was this young researcher at NIH who I had been introduced to me along the way and also thought that the calorie balance thing was wrong, although he had a different hypothesis about how this all worked, a kind of fat balance hypothesis. And so we started doing the experiment. We had a lot of interactions while we were

designing the experiment. We trusted them to kind of know how to do these experiments right, which was both correct and that they certainly knew better than we did, but incorrect in that, again, their standards weren't high enough. Once they started generating data and started interpreting the evidence, that's when we really stepped in to present a counter interpretation of more critical, or we thought was a more critical interpretation that was informed by our awareness of this hormonal regulatory hypothesis and its consequences, how you would expect it to manifest itself in these studies. And now we were directly challenging them and they didn't like that. And they thought that because we funded the experiment or the money went through us, and because we had a bias, we had a result that we wanted to see they, and they being one individual in particular, if he'd listened to our advice, he would be basically conflicted by our bias, so he felt he had an ethical obligation to shut us out.

Emily: And you felt that it was genuine? I mean, he's coming at it from his own bias so

Gary Taubes: I believe he believed what he said and I believe that he saw this as an ethical conflict and he felt challenged by it. I never questioned that. I thought it was naive. I thought it was a little crazy because basically it was saying even though you people may be the very best people in the world to critique this experiment, I can't listen to you because you fund it. And so I have to, we agreed it was a crazy, crazy.

Emily: I mean that's ridiculous too because I sort of feel like isn't criticism just criticism?

Gary Taubes: Well that's what I said. This is science. First of all, let's put ethics aside. This is science. The idea is to make sure we're not fooling ourselves. So you want the very best people and as many as possible to critique the data, to critique the interpretation, to explain to you why they think you might be fooling yourself because you probably are.

Emily: It gives you a chance to respond.

Gary Taubes: But that's not how they saw it. So the collaboration pretty much broke down over that. I mean it got very heated. There was some just crazy meetings we took alone with the collaboration, the Arnolds got involved and one of our meetings was in Houston. Finally, there's this one researcher, had resigned from the collaboration said he just couldn't go forward without being ethically conflicted by working with us. He couldn't trust us to keep our thoughts to ourselves. They always had, our contracts, always had a situation in which we have absolutely no say in what these researchers chose to write in the paper and what they reported. Other than that, we got an opportunity to read it in advance and present thoughtful criticism and our scientific advisory board, which was made up of a half a dozen of the best scientists in the field. Very, very thoughtful men and women who also got the present criticism and they decided that we, not they, this one scientist and the other members of this collaboration sort of felt they owed it to this man to support him even if they didn't personally believe, take his position that they were a team and they owed it to him to act as a team and supportive him so

Emily: So it became very divisive. It's so hard to understand because it's like you all start out at this place of trying to genuinely explore these questions and then it sort of falls apart in this really tragic way

because the takeaway is, well, where are we now? And so we still need to do these experiments I would think.

Gary Taubes: Well, but again, so you have this interesting situation. The great majority of the research community and obesity and its relationship to diets simply doesn't care. They either think that we know the truth already it's all about some level, it's eating too much and it's complex and that we use these phrases. It's a complex, multifactorial disorder and there are societal factors and behavioral factors and nutritional factors and it's just so complex you can understand and why we have so completely failed in our job to understand that or predict it. And so they don't really care and they don't get funded to care. Remember we talked about the role of funding. Then there's a small, tiny part of the community that seems to be mostly the [blogosphere](#)²⁷. They're mostly people like you and I and the [Twittersphere](#)²⁸ that argue about this stuff, but even they don't really see it as all that important. I mean they do, but the rest of the community just doesn't. We haven't been able to get across this idea. Normally when people like me and the academics who come in, a few of them do say, look, the entire community is wrong. Normally we're quacks. Like the cold fusion thing. A couple of chemists at the University of Utah say they've created that all of our understanding of nuclear fusion is wrong and you create nuclear fusion in a test tube, a glass of water with an electrode made out of palladium. If I had \$1 million and I could bet \$1 million that they were wrong I would have done it in a second because those people are almost invariably quacks. So it's very easy for the community to think that people like me are quacks. That even though they don't get this argument that it's important whether or not obesity is an energy balance disorder or a hormonal regulatory disorder, whether the determining factor in what we eat is the calorie content and the density of energy or the carbohydrate content and its effect on circulating insulin levels. They assume that people stay burdened with obesity stay that way because nobody can stay on a diet. It's just too hard to do, so it doesn't matter.

Emily: What I still don't understand and I feel like I've had a lot of conversations about this with various different people, I get the motivation of researchers who are at institutions where their funding is coming from pharmaceutical companies. The generic drugs that have all these off-label benefits that people don't maybe know about because no one's going to be incentivized to study it or to figure it out. But the government, where so much funding is coming from, they should have an investment or interest in sort of preventative medicine, which I feel like is just generally lacking in terms of funding.

Gary Taubes: It's not that it's generally lacking. They think that they've got the right answer.

Emily: But it's not working. No one can say that this isn't an epic failure.

Gary Taubes: This is what at NuSI we used to call this the Dude Hypothesis. This is from one of our scientific advisory board members, a very smart odd metabolism researcher here at UC Berkeley. The idea is why are people still fat? Why do they keep getting fatter? Because they do, they just can't stay on diets. It's like, nobody wants to be on a diet, so that's the answer. So let's create drugs. We can't expect

²⁷ <https://www.techopedia.com/definition/4862/blogosphere>

²⁸ <https://www.pcmag.com/encyclopedia/term/60386/twittersphere>

people to stick with diets. We can't. It's too restrictive or whatever. Pick your excuse. A diet that works, like a Keto Diet, and by work I mean it allows people to lose weight without hunger and improve or solve this metabolic derangement problem. He's considered an extreme diet that's going to kill them because of the saturated fat content. So that's out of the question. So it's just, we've created a, as we've pursued what I believe, are sort of the wrong answers in this field, that dietary fat causes heart disease and eating too much makes you fat. The field has sort of created rationalizations to explain all its failures. So the fact that we, this obesity and diabetes epidemics, keep getting worse is because the industry is too good at tricking people into eating too much and people just don't have the willpower to do what's necessary, which is eat less and exercise more. And you've got, so who cares? People like pounds, nobody's going to stay on a diet or whatever the right answer is. And then you have, like I said, the funding has kind of moved past all these things. So if you look at, if you want to study the [gut biome](#)²⁹ these days, you can get money to study the gut biome. It's fashionable. Okay. If you want to study whether or not a carb restricted diet works better for obesity in a way that's independent of calories, you can't get money because it's not fashionable. We've been arguing about for 40 years. Who cares? So you have this whole, again, this kind of emergent societal phenomenon, combines groupthink, cognitive dissonance and all these rationalizations for failure. It's understandable we haven't solved the obesity epidemic. Obesity is a multifactorial complex condition. I mean there are people who believe that one hundred percent and don't even understand what they mean when they say that. Maybe to believe anything 100% you have to not understand what you mean when you said.

Emily: Yeah, I mean I guess, for me I just sort of keep going back to the overall costs that this is diabetes. Let's say [cancer](#)³⁰. Throw that in there. [Alzheimer's](#)³¹, [heart disease](#)³², like these are things that seem like if the root cause is potentially the same thing, that seems pretty compelling for somebody to try to figure it out. So it's like if you can get money for the gut microbiome, isn't the gut microbiome compromised on a high carb diet? These are all tangential to the problem.

Gary Taubes: You would think so, but they don't. Remember, they think they live in a different universe. That's the paradigm issue. They, being the funding that people work in the funding agencies, and you have to understand that, think about the people you respect in life. There are people who think like you do, right? This is the essence of [groupthink](#)³³. So if you're at the NIH and you need to hire a new program manager for the nutrition and you interview a lot of people, the people who you're going to like are going to be the people who think like you do, not the people who think you're an idiot because you think like you do like I would, but the people who think like you do. So you end up with the administrator, the institutions collect, they create groupthink just by the very nature of how humans interact with each other. So you have these just world, the research world, institutional funding worlds where everybody thinks the same way and it's not like we think. They don't read "Good Calories, Bad Calories" and say, oh, this is revelatory. They read "Good Calories, Bad Calories" and they say, I don't believe it. I don't, what's he leaving out? This can't possibly be true. He must be making it up. And then if they read it and

²⁹ <https://www.healthline.com/nutrition/gut-microbiome-and-health#section1>

³⁰ <https://www.cancer.org/cancer.html>

³¹ <https://www.alz.org/alzheimers-dementia/what-is-alzheimers>

³² <https://www.cdc.gov/heartdisease/facts.htm>

³³ <https://www.psychologytoday.com/us/basics/groupthink>

it's revelatory, now they're in this position where they have to talk to their colleagues about it, right? Have you read Taubes' book? Like you don't want to do that because then you start exposing yourself as maybe you're not a member of the orthodox. Maybe you're one of those.

Emily: But it's like death of intellectual curiosity then.

Gary Taubes: Yeah. Yeah, Dude.

Emily: I mean that's pretty depressing, I think.

Gary Taubes: Well, it's only depressing if you let it depress you. He said sounding like a Buddha.

Emily: Yeah, right. So I was going to say sounding depressed and resolved to be so I guess.

Gary Taubes: Let's talk about the good news.

Emily: Okay. Tell me good news.

Gary Taubes: The good news. So what we've been talking about are hypotheses of obesity and heart disease and mortality and morbidity and how diet relates to chronic disease and your weight over the course of 20 years. You do not need a hypothesis to test a diet for yourself. So if you think about when people like Nina Teicholz and I did over the past decade is we managed with the help of all these wonderful physicians and a few academics who had the intellectual curiosity and the guts to step outside of the mainstream and study what interested them. We've been able to convince people that these Keto diets, very low carb diets will not kill them. We've even managed to convince enough physicians to try it for themselves, that the physicians became convinced and they convinced other physicians. And now you've got thousands to tens of thousands of doctors, it's hard to quantify. I'd say at least a few tens of thousands who have converted, who believed that the single healthiest thing, best thing they can do for their patients who are suffering from obesity or [type two diabetes](#)³⁴ or [hypertension](#)³⁵ or any of these metabolic derangements is get them to restrict their carbohydrates and replace them with naturally occurring fat. And they see fairly remarkable things that happen. This isn't a hypothesis. So if you go to the doctor and doc says eat a low fat diet because I'm afraid of your heart disease risk. He's saying, if you eat this diet, you may live longer and have a heart attack later than you would otherwise or maybe not have this heart attack at all and there's no way to tell if that's true. So if you die 10 years later or 40 years later, you have no idea what role the diet played in that and no information that you or the doctor has. This is the wonderful thing about making predictions like that is that you can never be proven wrong. Even if you die a week later, the doctor will just say, well, obviously you didn't start the low fat diet soon enough. But if you're going to low carb, high fat Ketogenic Diet, you'll see changes with Sarah Hallberg seeing and discussing. You'll see changes, dramatic changes pretty quickly. Within a few months, you may have lost 10-20 pounds. Your blood pressure's coming

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

³⁵ <https://www.heart.org/en/health-topics/high-blood-pressure>

down, your blood sugar is under control, your doctor is, hopefully your doctor is helping you with this, he or she is getting you off your blood pressure meds and your blood sugar medications. People are actually, so you've got this sort of position where physicians have been told to prescribe by hypothesis, eat this diet, I hypothesize that you will live longer and the alternative is now they can prescribe by observation. If you eat this diet, get rid of the carbs, replace it with fat, you'll get healthier and then they can watch that happen and you can experience it yourself and then you have to decide if you do get healthier, do you want to stay that way? Do you want to take the risk that healthier in the short term translates to healthier in the long term when you have no other information to help you assess that gamble?

Emily: Yeah. I feel like one of the things that Dr. Hallberg said to us that I thought was so interesting was when she went to talk to people in Washington about the results they were getting at Virta and that people were like, we can't really tell people to just get rid of a whole food group that's not realistic. And she's like, well actually that's exactly what you did. And people did do it, but you just told them to get rid of the wrong food group when you told them to get rid of fat.

Gary Taubes: Sarah's terrific. Yes, that's exactly it. So it's sort of, and I discussed this in the book, I'm just finishing up now. The problem is for decades we've defined a fad diet and one of the defining characteristics of a fad diet is it tells you to get rid of a food group. But if a food group is harming you, if the idea with dietary fats giving you heart disease, you eat as little fat as you can, that's what they were telling us. That was fine. But when you eat fat, they're actually fat isn't a food group, so carbs, you're getting rid of grains, starches, sugars, and you're getting rid of the bulk of what the food industry provides, which is one reason why the industry isn't wild about this message. Dietary fad, you can tell people to eat less fat and the dairy industry produces low fat dairy and the meat industry producing low fat cuts of meat and breeds cattle to have a better quote unquote healthier fat content so they can still sell their products. You're not saying don't ever eat a French fry again or don't eat a potato chip again, which is what this message is. But the problem is if eating the potato chip makes you fat and worse than that, fat and hungry, then maybe some of us just can't do it and shouldn't do it. And if we want to be healthy, we have to abstain from carbohydrates, carb rich foods and sugars and that message is going to, even though the organizations in Washington is having trouble accepting it because they'll have to admit that they made mistakes, doctors are embracing it because they're seeing their patients get healthier. And that's why they went into medicine, most of them.

Emily: Is there any difference in terms of the carbohydrates or the body's response to carbs in Europe versus in the United States? I have a friend who has the serious glucose intolerance and she was saying to me that she can eat all kinds of carbs or foods that have [gluten](#)³⁶. So anyways, she basically has been saying that she can eat foods that have gluten, that she could not eat in the United States. She can eat them there without her stomach upset.

Gary Taubes: Well, it's interesting and it depends on the, I'd want to talk to her about the foods. I had that experience in the mid eighties I lived in Geneva while I was doing the research on my first book and

³⁶ <https://celiac.org/gluten-free-living/what-is-gluten/>

then lived in Paris for a year and a half, which was wonderful. And I could eat foods in Paris that I could not eat. Foods that would give me gastrointestinal distress in the U.S. did not do that in Paris. I cannot 40 years later tell you why. So anything is possible. One possibility, even with gluten, is I wondered how much the gluten issue is triggered initially by the sugar content of the diet, in which case a lower sugar content, even in those same processed foods could perhaps have, cause a different response. So again we focus on very simple kind of one variable problems and there may not be one variable it might be multiple variables at work. One that sort of primes the pump and then the other that does the damage. The argument I make in "[The Case Against Sugar](#)"³⁷ is that sugar is necessary to sort of cause population wide insulin resistance to begin with and then once you've got an insulin resistant population and all the other you over secrete insulin, to all the other carbs and the diet. So we kind of have two factors working at once and working differently on a population wide basis. In an ideal world, these are the kinds of questions, the issue that your friend raises and the kind of questions that researchers would study.

Emily: Yeah because we thought maybe it was like the genetically modified stuff that we eat here. Maybe that's like in the grains or like somehow has infiltrated the food supply.

Gary Taubes: Possible. That would not be my first hypothesis. That's why I would like to know which specific foods.

Emily: I think it was pasta.

Gary Taubes: But again is it a baguette in Europe versus a baguette here? Or a baguette in Europe verses Wonderbread here? Yeah. So again it's easy to kind of be it would be interesting. And you could start asking questions and we might be able to figure it out with the help of a good laboratory and might have. First let's figure out which foods it is. And then let's look at what we're dealing with, the two different foods. Maybe it is [GMO's](#)³⁸. I doubt it, but that would be one hypothesis eventually. But then step one would be to identify specifically those foods like this pasta in the U.S. I can eat, this similar pasta in Europe I can't eat what's the difference?

Emily: Okay. My last question for you is, I know you have this great story about you called up a researcher, so you had done all this work at cern and you had sort of realized that scientists were lying to you but also bullying themselves and that this was really exciting and interesting. And then you were on an assignment or, but anyway, so you call up this researcher and you basically talk to him about salt and you get off the phone and you realize there is a bombshell of a story behind this. Can you just tell that story and then my question really is how did you know based on the fact that you had just been covering bad science that was sort of your beat, but that this was like the worst scientist ever. What made him the worst?

³⁷ <http://garytaubes.com/works/books/the-case-against-sugar-2016/>

³⁸ <https://www.nongmoproject.org/gmo-facts/what-is-gmo/>

Gary Taubes: Okay. Good scientists have a way of talking about the evidence that's very precise, very cautious and tentative. And this idea again, you know, they're always aware that you might be fooling yourself. So you always talk about the science with a certain degree of skepticism. Like I said, precision in language. You want people to understand exactly what you mean. So, and this is part of what had come across, I mean scientists make mistakes all the time and the best scientists might make the most mistakes because they're going to work on the hardest problems. But they're aware that they're likely to be making mistakes. So the way they discuss their data and their evidence is such that you just get a really good feel for somebody who's aware of this. And the way I'd used to describe it to my friends is if you're a English major at a book review or an English professor, you're allowed to say that [Norman Mailer](#)³⁹ is a better writer than [John Grisham](#)⁴⁰. Even though you know that John Grisham outsold Norman Mailer by a factor of a hundred. I mean it seems John Grisham does good, but he's not the wordsmith that Norman Mailer or pick your favorite writer is. You just know that. And you can read a page of each of them and come to that conclusion and nobody would disagree with you. So, and I had in the course of my second book on cold fusion was called "[Bad Science](#),"⁴¹ and I had thought, I had interviewed clearly some of the worst scientists in the world. And I get into public health and I needed a paycheck. One day I was living in LA, I was a correspondent for [Science](#)⁴², which is a glorified word for freelancer and I had to pay my rent and I call him my editor at Science and I say, could you give me a story I could turn over quickly so I can get a paycheck and pay my rent? And there's an article that's coming out in the Journal, in the [New England Journal of Medicine](#),⁴³ on the [Dash Diet](#)⁴⁴, the Dietary Approach to Stop Hypertension, which is exactly what it says it is. And this article is coming out in a week and what I didn't know was that it had been leaked to Science in advance. And so the way you normally do these articles as a correspondent is you, so it's not out yet, it's embargoed, your article's gotta be embargoed until the article comes out in the New England Journal. So you call up the principal investigator and you say, I'm doing this article for Science on your research. And you interview him promising that you respect the embargo and then you ask him or her for the names of two or three other people you could interview who know about the research and are, can comment on it even though it hadn't been published yet. And if you can get three sources, interview three people, you can quote three people, which is enough for one page in the magazine and you can file the story and I can get my paycheck. But what he didn't know is this article had been leaked to Science in advance with a list of people to talk to. So the first person I talked to is from the list, the leak list. And that's a former president of the [American Heart Association](#)⁴⁵ who tells me she can't speak about this study because she'll lose her funding if she does. And I say this isn't the [Lysenko Era Soviet Union](#)⁴⁶, nobody loses their funding because they speak about a diet study to be published in the New England Journal. And I'm just going to respect the embargo. You're not going to be. She won't do it. I say, look, can we go off the

³⁹ <https://www.britannica.com/biography/Norman-Mailer>

⁴⁰ <https://www.jgrisham.com/>

⁴¹ <https://www.amazon.com/Bad-Science-Short-Weird-Fusion/dp/0394584562>

⁴² <https://www.sciencemag.org/>

⁴³ <https://www.nejm.org/>

⁴⁴

<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/dash-diet/art-20048456>

⁴⁵ <https://www.heart.org/>

⁴⁶ <https://www.britannica.com/biography/Trofim-Lysenko>

record not for attribution, you know, pretend we're in a parking garage in Washington. If you don't tell me what's wrong with this study, I will never know and I'm going to write what everyone else writes. And she still won't tell me. She just refuses to speak about it. So then I interviewed the principal investigator. I ask him for some names of people to talk to, and one of them, he suggested is this fellow whose name will go unmentioned who I call up and he sounds exactly like [Walter Matthau](#)⁴⁷ and he starts yelling at me that there's no controversy over salt and high blood pressure. And so this is a diet that lowered blood pressure. I'm not calling, I said I'm not calling about salt and my blood pressure professor, I'm calling about the Dash Diet. And he just keeps yelling at me, no controversy, absolutely no evidence, that salt doesn't cause high blood pressure. That's insane. And Blah, blah blah. So I get off the phone with him, I file my story. I get another interview, so I get my three interviews. I tell my editor at Science, look I had a former president of the American Heart Association refuse to talk to me on or off the record about this study because she said she would lose her funding. And then I had this Walter Matthau character yelling at me that there was no controversy over salt and high blood pressure when I wasn't calling about salt and high blood pressure. There must be a controversy about salt and high blood pressure that I know nothing about and I think we should look into it. Then they had faith in my work. So he said, yeah. And I spent the next nine months of my life doing nothing but salt and high blood pressure. Turns out it was an incredibly vitriolic controversy. It's still going on today. The evidence suggesting that our salt consumption causes hypertension was terrible. And that was the very first investigation I did in this field. And while I was doing the research, I went back to the Walter Matthau character to interview him more and remembered he was yelling at me saying there is absolutely no evidence that salt isn't the cause of hypertension. When somebody says absolutely no evidence they're, first of all, they're not speaking tentatively and cautiously. And second of all, they're clearly incorrect. There's always evidence for something. If anyone believes something, there's some evidence of questions, whether the evidence is sufficiently compelling that we should all believe it. So this guy was clearly one of the worst scientists I had ever interviewed, just by the way he talked about the data. You could tell. And while I was interviewing him in the followup, he took credit not just for getting Americans on the low salt diet that we'd been eating since the, around 1990, but on the low fat diet as well. Turns out he was the sort of, [Ancel Keys](#)⁴⁸ redox. And I got off the phone with him and I called my editor at Science and I said, when I'm done writing about salt, I'm going to write about fat and say one of the five worst scientists I've ever interviewed in my life. They're all so bad I wouldn't want to rate which one was somehow worse than the other, but it's the one of the five words scientists I ever interviewed. He just took credit for getting us all on this low fat diet we've been eating. And one of the lessons of all my research in science and bad science just never get the right answers. So if this guy was involved in any substantive way, there's gotta a story there. And that was it. I didn't know what the story was. I had no idea. I was eating a low, very low fat diet at the time and getting fatter by the way. And I just launched into it based solely on the fact that this clearly terrible scientist had taken credit for this idea and for the diet we were all eating. And then it just sets the next 20 years of my life

Emily: And that set you up perfectly.

⁴⁷ <https://www.imdb.com/name/nm0000527/>

⁴⁸ <https://www.sevencountriesstudy.com/about-the-study/investigators/ancel-keys/>

Gary Taubes: It did.

Emily: And I guess the only other thing I was curious about was I have had the privilege, the opportunity to be invited to [Ariadne](https://www.riadnelabs.org/)⁴⁹ a couple of times, which is [Atul Gawande's](http://atulgawande.com/)⁵⁰ lab. Atul, and then [Neel Shah](https://www.riadnelabs.org/about-us/people/leadership/neel-shah/)⁵¹, who's the c-section researcher who I featured in that [New York Times piece I did on maternal mortality](https://www.nytimes.com/2019/03/05/well/family/reducing-maternal-mortality.html)⁵². They have this sort of community where people go before they write up a paper, people from the community, from the industry, from the whatever the topic is go and they critique it. So whoever's writing the paper presents and then it's basically like everybody in the audience is supposed to say like, well what about? Have you? You know, this study contradicts what you're saying in this way. Which seems very much in line with what we would all say is [the scientific method](https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method)⁵³, right? Or like this idea of being open to criticism. I mean like they're inviting you, those become lively because people are vocal and people are definitely trying to poke holes. And it's an opportunity for them to refine their work before it's published, right. So that sort of allows them to go back and think again about the problems or how they're presenting it. Do you ever have scientists call you? I mean I guess we're not calling them scientists, but [epidemiologists](https://www.cdc.gov/careerpaths/k12teacherroadmap/epidemiology.html)⁵⁴ or people in the nutrition field call you and say like, hey, we're working on this experiment. We'd love for you to tell us what you think of it.

Gary Taubes: No.

Emily: That's kind of crazy, right? Because I feel like you'd be so good at that.

Gary Taubes: The assumption in the nutrition world is that I'm just wrong. If not wrong, then sort of just silly. You know, you've got someone who's clearly, they're not concerned, they don't sit around and talk about how sharp Taubes is or Teicholz or maybe even not the researchers like [David Ludwig](http://www.childrenshospital.org/research/researchers//david-ludwig)⁵⁵ who are in academia who think like we think. So in an ideal world, that's when you would want. And then those are the people who you want to listen to or the people who disagree with you, who, and in an ideal world, these experiments would be done like the people on the different sides instead writing papers explaining why they other ones are wrong, they would work together to try and figure out what's going on. They would, and you would get this kind of critique. The world I grew up in, the physics world, that's how they worked. If you got a result that was interesting, which means probably wrong, you would present your interpretation, the evidence in your interpretation first in a laboratory [symposium](https://www.merriam-webster.com/dictionary/symposium)⁵⁶ and the job of everybody in the audience is to explain to you how you might've screwed up and to do it pretty harshly. They shouldn't really care about your, you know your feelings. It's like their job is just to tell you because you almost assuredly are wrong. If the result is interesting. Their job is to help you figure out how you fooled yourself. And then if you, if they can't do it, if you still got this interesting result, then you go to neighboring labs or neighboring institutions and present a symposium and then

⁴⁹ <https://www.riadnelabs.org/>

⁵⁰ <http://atulgawande.com/>

⁵¹ <https://www.riadnelabs.org/about-us/people/leadership/neel-shah/>

⁵² <https://www.nytimes.com/2019/03/05/well/family/reducing-maternal-mortality.html>

⁵³ <https://www.sciencebuddies.org/science-fair-projects/science-fair/steps-of-the-scientific-method>

⁵⁴ <https://www.cdc.gov/careerpaths/k12teacherroadmap/epidemiology.html>

⁵⁵ <http://www.childrenshospital.org/research/researchers//david-ludwig>

⁵⁶ <https://www.merriam-webster.com/dictionary/symposium>

you keep trying to figure out how you fooled yourself. And you keep asking people. Basically it's, you know, discovery of a new particle question mark. And then the idea is these people are gonna tell you what you missed. And you should be grateful. That's their only job. And then finally, if nobody can help you figure it out, then you publish a paper that says discovery of a new particle with a question mark at the end. And the basic gist of the paper is here's what we've seen. This is how we've tried to explain it and we haven't been able to get rid of this interesting phenomena. How did we screw up? You know, it's always and eventually, this is the idea. It's like you're trying to refute the hypothesis. Eventually you've failed to refute it and you failed to figure out new ways to refute it and you accept that maybe it's right. So you're kind of backing into it. Now in reality, yeah, that's the ideal. People get carried away in every field. But and then Atul would describe that. Atul does, that's exactly what you want. And if this went on with the researchers, we hired at NuSI I never saw. This is, like I said, one of the things that amazes me is that to this day we have two of the studies we funded the one with this principal investigator at NIH and one with Harvard. They came at Harvard and [Boston Children's Hospital](http://www.childrenshospital.org/)⁵⁷ and they came to different conclusions. The researcher who believed that obesity was a hormonal regulatory disorder found, concluded that, their data supported that. And the researcher who believed that obesity wasn't, yeah, so Ludwig worsens. So you end up with a situation where they're writing letters, they keep criticizing Hall, we'll criticize Ludwig's interpretation of the data and then Ludwig will have to respond to Hall and explain why he didn't misinterpret it. And why Hall's letter was misinterpreted. And then they'll publish further papers and none of this is going to solve anything. The only thing that solves anything is doing further experiments. So those experiments have to be done. They could argue again, I guess maybe people will get bored of it or they'll move on or they'll get funding to do gut biome research instead, and that's what they'll do. But if the issue is important, what they should be doing, and at least David Ludwig is in his creaks he's gotten funding from the Laura and John Arnold Foundation independently to do what will be the best, hopefully the best, study ever done on this subject. Does it mean that they'll get the right answer? No, but they'll get closer.

Emily: Chipping away. That's the most optimistic way to end this I think I don't know.
Gary, thank you.

Gary Taubes: Thanks, Emily. This was great.

Emily: I hope you've enjoyed this conversation with Gary Taubes. We're going to cover this topic more. It's so important. I feel like the idea that food is medicine is something that just seems so important. And yet we know from talking to Sarah Hallberg and the Virta trial as well as a number of other researchers and doctors and scientists that we've talked to that you know, the medical community gets one day on nutrition in med school and that hardly seems like enough and so they're really taking a lot of what I guess the government has prescribed as the best way to say it and assuming that that's accurate and we're realizing that it's not and it definitely makes a lot of sense that what you eat matters a huge amount to your overall health. So we're very grateful for Gary coming on and we have Nina Teicholz coming up in a couple of weeks and some other really fabulous researchers who understand this topic very well. So I hope you've enjoyed it. Thanks. I'm Emily Kumler and that was Empowered Health.

⁵⁷ <http://www.childrenshospital.org/>

Thanks for joining us. Don't forget to check out our website at 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.