

Fat, Sugar Salt

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Earlier this year, The Atlantic published a long article looking into what it called “Nutrition Science’s Most Preposterous Result,” the very robust finding that people who ate a modicum of ice cream each week were less likely to develop Type 2 Diabetes. David Johns wrote that article, and had previously looked into guidelines on cutting salt and the Big Sugar anti-fat conspiracy that never was.

We started by talking about Tom Frieden, Director of the Centers for Disease Control and formerly Health Commissioner in New York City, and the report on salt he commissioned from the Institute of Medicine.

David: So he commissioned this report to really look at this question and to try to answer once and for all, consulting the most powerful and influential scientific institutions in the US, and to their surprise, they expected the Institute of Medicine to come back and say, you know, these are a bunch of crappy studies. We don’t really need to worry about this. But actually what they came back and said was like, we don’t know. So it ended up being this really kind of messy thing that did kind of get swept under the rug.

Jeremy: I mean, you say that the idea was to decide once and for all, you know, what’s the story with salt? And the answer was, we don’t know. But what happened as a result? I mean, you’d think that a strong “we don’t know” might have had an impact on recommendations, government policy, something like that. So what happened in the case of salt?

David: Well, I shouldn’t say that it didn’t have an impact. And I also oversimplified the story maybe a little bit. The big issue was at that time, what was coming up, was there were a series of studies, most of them epidemiological — so that’s an observational study where they looked at groups of people over time and try to correlate their sodium intake with disease outcomes. Basically, what they were seeing is, or what the claim was, is that in some of these very large, population-based studies, that essentially there was kind of a ... The

claim was there was a kind of a sweet spot for sodium intake. That if you had too much that that was bad. People agreed on that. Okay. It's associated with blood pressure increase. It's associated with cardiovascular disease outcomes. What happened on the low end, in other words, how low do you need to go, was much less clear. And what some of these studies were showing was basically if you got your sodium intake too low, then that was dangerous too, right? So then your cardiovascular outcomes. ... So there was what they called either a J-shaped or a U-shaped curve where at the bottom of that curve was the point at which the lowest risk would be. And so the question was like, where that was and whether this thing at the low end was real, basically. So that would dictate where governments would set recommendations.

So it's a complicated question. So what this this report did was specifically focus pretty neatly on that lower end question and tried to say, is this real? Or is this somehow an artefact of the data? And what the report said is basically we don't really know. And the report also said we don't actually know, based on current evidence, what the set point should be, we don't know what level really to recommend for population level sodium intake. We do think there's risk at the high end. But actually setting that level, it's a little fuzzy.

Jeremy: Right. And ten years on, has there been any change?

David: No, I would say not really. There's still kind of this split within the research community among those who say, this potential danger at the low end is ... Some of the quote unquote, skeptics, as we might call them, say it's real. And then, you know, people who are more pushing for sodium reduction say it's an artefact of the data somehow, or it's just not relevant to the public policymaking in some way. So there continues to be this divide. I should say, like our our perspective that my colleagues and I who are writing about sodium was always, there's so many people who are kind of taking sides in this issue and being, it's this way or it's that way. We, our perspective was more like looking at it as kind of historians and sociologists, although one of our co-authors is a very prominent epidemiologist. We were looking at it kind of from a sociological perspective, like what explains the division in these two camps? Like, why are they divided? Is it the influence of the food industry? Is it, you know, big money somehow? Is it something to do with the structure of public health or the way that people think about, you know, policymaking? And so that was where

we were coming from. We were ... None of us were, oh, we're going to say we're for or against. And my view, and just to cap out where I do think, certainly the consensus within the nutrition science community is that there is an important and meaningful signal associated with sodium reduction and blood pressure and the benefits of potential population lowering. But it's a complicated issue for anybody to do anything about.

Jeremy: And is it possible to say what caused the polarisation?

David: Our conclusion basically, we actually did a whole thing where we mapped ... We did a bibliometric analysis where we mapped the citation networks. In academics, in scientific research, citations are a really important way that scientists signal, who am I paying attention to, what's important. So what we did is we constructed this big map looking at all these studies and how they interconnected. And basically what we found is that there were two communities, two social communities. There were sort of the mainstream, you know, public health people. And then there were the skeptics. But what was more interesting is that there was a tendency to cite papers from within your own, from ... on your own side of the debate. So that explained kind of this polarisation. And where did it come from?

I actually have unpublished ... stuff I haven't published related to this issue where I kind of look at this and how it developed more over time. My view is that part of it comes from an increasing concern that, frankly, the food industry was on the kind of skeptic side and concomitant reactions on the public health, pro-sodium-reduction side. I mean, in a way, you could look at it as being related to polarisation that we see in political discourse these days, in which it became increasingly difficult for the two sides trust each other.

Jeremy: Right. I suspect most people are not that aware of the different attitudes towards salt. I mean, it really is quite ingrained that, as you said, that high salt is bad for you. But how much should you reduce it? I don't think people are really aware of that discussion. But when it comes to fat and heart disease and sugar and heart disease, this is a real problem. And you also looked at that, and in particular this idea that became popular, I don't know what about eight, seven years ago, maybe, the idea that somehow Big Sugar had twisted scientists around to put the blame more on fat, and that sugar got a kind of free pass on heart disease. Am I characterising that correctly?

David: Yeah, more or less. I mean, people began to be more interested in low carb style eating around the turn of the 21st century. There were some publications where people were getting more interested in that, and at the same time the nutrition community was moving, was inching ever so slowly away from the low fat way of thinking, which had dominated the 1980s and 1990s. I would say the nutrition community consensus certainly still is that saturated fat contributes to our atherosclerosis, hardening of arteries etc. And that there's a relationship there. But there had long been this kind of overall sense that you should reduce all kinds of fat. There had been this long thing about, you know, low fat, low fat, low fat. And then it seemed like things were changing. And so, people ... There's nothing that pisses people off more than experts telling them, don't eat this food and then to have them change their mind, especially if they like that food. And so this changed. And people were like, what explains this? And also I should say, at the same time, people had increasingly been pointing the finger at sugar. So the focus of the bad, you know, entity in the diet had shifted from fat to sugar. More and more sodas.

We all saw this. And so then people started to look back and say, maybe there's an explanation here where, you know, the industry had sort of misled us, and maybe that was part of the reason why the low fat diet kind of took off is because the sugar industry had sort of, you know, pushed that kind of research and kind of blocked or obscured research that would have indicated the harms of sugar. And this kind of very specifically got pointed out looking at these Harvard researchers. And it got massive, massive news coverage, front page New York Times, I mean, every news outlet published it wall to wall as it happened.

I had done a whole bunch of research in the archives already at that point of one of these researchers who was sort of implicated in all this. And I just felt like ... I and my colleague Gerry Oppenheimer, we just felt like this doesn't make sense. And also because the people they were accusing of doing the bidding of the sugar industry already believed that fat was bad and that sugar was kind of harmless at the time that they were ... They did have relationships with all kinds of food industries at the time because everybody was taking money from all these different industries. That was the way nutrition research was done.

We were trying to just complicate this story about ... There's such a tradition in, or a habit in, these contentious scientific debates of really making good guys and bad guys. And what we were trying to do was complicate this story and say, you know, these bad guys are really like, they're not. I mean, yeah, they did take money from the industry, but the people you say are the good guys also took money from industry. And it's just way more ... Like, the food industry. It's not like tobacco. You have multiple food industries, and they're all competing for a share of your stomach in a sense. And so, if you eat more sugar, you eat less fat. If you eat more fat, you eat less sugar. So they're competing. It's not like tobacco where there's only one player. Do you understand what I'm saying?

Jeremy: Yeah.

David: It's a complicated landscape.

Jeremy: Yeah, but I mean, I guess it comes down again to wanting simplicity; that either sugar was the bad thing or fats were the bad thing. And among fats, either it was saturated fats or it wasn't saturated fats. So, there is this ... There does seem to be a hunger for simplicity.

David: Absolutely. Yeah. I mean, I think, you know, frankly, I know that in the low fat era, that was one of the reasons they they, at that time, they were like, we really are pretty confident that saturated fat is bad. We think that total fat intake is bad because fat on a gram per gram basis contains more calories than carbohydrates. And we know that obesity is an increasing problem. So if we just ... And ... But if we start talking about saturated fat, that's just too complicated. People aren't going to understand that. So we just want to make a simple message and say, fat is bad. And that was really like a policy decision that some nutrition experts made when they were trying to figure out what kind of guidance to give to the public. And that was probably a mistake, you know, because they were simplifying it in a way that turned out at least to current ... Probably according to current conventional thinking was wrong.

Jeremy: When you get the front cover of Time Magazine saying butter's back and the hero photographs of a block of butter with curls coming and people are inclined to say, well, you can't trust anything we're told.

David: Yeah, definitely. I mean, the one thing that's important to keep a focus on is the fact that everybody is interested in food.

Jeremy: Well, I hope so.

David: Nutrition stories do well in the media. That's why there are so many diet books of every single stripe, of every kind. There's a market for it. You can make money doing this. So that's why there's a huge appetite in the press for publications about ice cream or for publications about sodium or whatever. Those stories are always like, oh, that's an interesting story. And so there's this kind of conveyor belt. There's incentives all around, from the researchers themselves to the university press offices that put out the press releases related to the studies, to the reporters who write up those press releases and hopefully do a few more interviews to try to figure out if they're true or not. But maybe if they don't have enough time, they don't really do that. And so then you get this sort of conveyor belt of nutrition advice that goes out into the press. And so if there's an opportunity to write a story that says butter is back, even if that headline is a little bit too tall or is sort of overstating the evidence in some kind of way, the editors might say, hey ... They might not know any better, but they also might say, well, you know, I think there's there's something there. You know, this makes sense, right? And so, you know ...

Jeremy: Well, let's come on to your latest — I don't know what to call it — revelation. Ice cream is good for you. So we combine dairy, fat and sugar, and it's protective against diabetes. That's a weird one.

David: It sure is. Yeah. And so I should say this has been one that's been a struggle for me, in terms of doing media interviews about it, because the point of the story for me always was not so much ice cream is good for you. In fact, I believed, going into it, at least when I learned about this signal in a whole bunch of studies suggesting that ice cream is protective against diabetes, my first thought was, there's no way this is real. This is an artifact of the data. Somehow this is some weird bias that's in there. But it was a tip I got, and it turned out that it was in a bunch of different papers, and I was like, wait.

So the story for me was always, how was it that this signal was kind of floating around, but had sort of been ignored or brushed aside? I mean, it goes against every kind of conventional thinking, but that was the point of it. Actually talking about it in the media, everybody just wanted to say, oh, ice cream is good for you, right? So, can I just go

eat a bunch of ice cream now? And I was like, well, that's not really what I was trying to get at. I mean, actually, by the end of the story, I was ... Some of the experts I talked to did come around — or not come around — they took the position ... If I was a betting man, I would bet that this signal that's turned up in all these epidemiology studies is somehow an artifact of the data, is not real, but we don't know. And so my position actually migrated from ... I thought, I assumed, that it was an artifact of the data, to a position of, I don't know. Because I feel like there's several experts I talked to who know the data much better than I do, certainly, and were saying like, I don't know. Which is just ... feels kind of preposterous.

In defence of ice cream, you know, it's a relatively whole food. It's got a lot of sugar, you know, but there are a lot of, you know, nutrients and vitamins, protein, fat in dairy foods that the body can make use of. Right? And maybe it's more filling in some way that ... It actually has a lower glycemic index than, than bread or even brown rice, which is surprising. So it's digested somewhat more slowly. So, you know, there are ... people do come up with reasons that it might be more true. Or it might be that eating ice cream is better than eating, you know, a bag of chips.

Jeremy: What about the idea, which you do mention in your article, that people who've had a scare of heart disease of some sort think to themselves, well — or maybe their doctor tells them — I'd better clean up my act and stop eating ice cream. So that what's happening is not that ice cream protects against heart disease, but fear of heart disease diminishes ice cream intake.

David: Exactly. So that's one of the theories that people ... that had been floated to kind of explain this. They did an analysis in one of the studies and where they tried to account for that and it reduced the effect of ice cream, but it didn't come close to taking it away. Another kind of theory about it might be that people are reporting their ice cream intake differentially based on their situation. So in some studies, it had been suggested that people who were who were leaner were more willing to say, oh, yeah, I eat a lot of ice cream. And that people who were heavier were saying ... were under-reporting their ice cream intake, which would skew the data. It might be another way to explain that.

Jeremy: Going back to the salt thing and now the the ice cream thing. What happened, according to your article, what happened seems to be that the nutritionists, they kind of half believed it. Or maybe they didn't believe it, but thought there was something there. But nothing happened in terms of guidelines and nothing. ... You know, the press releases never said our scientists have discovered that ice cream protects. They said other things, and they glossed over the whole ice cream thing. So why was it unpalatable?

David: Well, I think this is another area where I'm kind of sympathetic to responsible nutrition scientists in a way. I do think some of those publications were frankly, misleading. Like, the ice cream signal was in the data. I mean, it was really interesting because there was an ice cream signal and a yogurt signal, both of which appeared to protect against diabetes. And the headlines of the study, everything that came out was like yogurt, yogurt, yogurt. Yogurt might be protective against diabetes. The ice cream signal was at least as strong and consistent as the yogurt signal. And it was ... They attempted to explain it away. So it showed the way in which results are filtered through preexisting kind of views. These researchers at places like Harvard, very prominent places where they know that their studies are going to get written up in the press, they may feel some sense of responsibility. They may feel like, I can't go out to the world and say that we've got this study that says ice cream might be protective against diabetes. Like, A: that goes against everything we believe. B: we think it might be dangerous. C: we think it's wrong. It's just irresponsible. It's potentially dangerous.

So for me, I'm always interested in the role of values in science. So in this case, the value might be interest in protecting public health. And so the idea that if you've got this yogurt signal, you've got this ice cream signal, you think that you believe the yogurt one based on your preexisting ... what you know from the body of evidence or what you believe from the body of evidence. You've got this ice cream signal and you think it is bogus. And so you're like, well, maybe the yogurt is okay. We can tell people to eat yogurt because we already think that's good. The ice cream, we can't do that. That's just too dangerous. We might kill people, right? We don't want to kill people and we need to be responsible.

But it also shows the way that the ideology — meaning, being being used here as their consensus, you know, their prevailing views of what

the nutritional truth is — how that affects how they actually interpret the data that arise from their studies. So that's how values get into science, always, inevitably, every single study.

Jeremy: There are there are many different attitudes towards the whole idea of government nutritional guidelines. I mean, a lot of people just say, hey, it's a personal choice and people should be free to make the choice they they want to make, notwithstanding the fact that the information they're getting can be very confusing, very flimsy in many cases. So how do you feel generally about governments issuing guidelines?

David: Well, I think the I think the view when, when this sort of got going in the 60s and 70s, especially in the 70s, it was that people have a right to know what we think we know. And there was a very strong ... Like the low fat thing, saturated fat, that was really driving so much of this because there really was a view coming out of the tobacco wars. Once the scientific community really got to the point where we really know that, smoking causes lung cancer, we really think it's involved in these cardiovascular disease. We need to tell people to stop smoking. They did tell people to stop smoking. People began to stop smoking. Rates of cardiovascular disease went down.

They were like, okay, you know we think there's something going on with diet, too. We think this saturated fat thing is a big deal and we need to tell people. So I think there was a real feeling in the public health world, we need to communicate what we know about overnutrition, about eating too much, what are the foods to be avoided. And so they began to kind of provide that guidance along with ... There had always been guidance about, get your four food groups and how to have a balanced diet. But this was the new regime of that, was talking about eating too much. So there was a feeling like ... that wasn't the ethical thing ... how could you not provide people with information that they could use in their lives? The question always is, well, how sure are you? What kind of evidence do you actually need to provide guidance? And that's an ethical question. It's not really a scientific one.

They obviously reached that point in the 70s and 80s and then things changed over time. I do think one thing they they kind of underestimated at that time was the degree to which the possibility of change in the science would undermine the public trust in the

nutrition sphere on an ongoing basis, which has become a real big problem for the nutrition world that they really are still trying to shake, because people always say, oh, well, things are always changing. And partly that's because, like as we've discussed, the media is always publishing, willing to publish, all different kinds of viewpoints. So that's one thing I do think; it makes sense to provide guidance, but I do think there's been like a pulling back, in a sense of realizing that it's really hard science to do really well. So maybe we need broader kind of, less specific guidance, that we feel we can stand by. But it's also important to keep in mind that silence is not really an option. Right? Because otherwise you're just abdicating, you know, you're giving the ground to the food industry to produce whatever sells.

If you give up on providing information or trying to tell people what is healthy, then the food industry is going to define what that is, or is going to define what is available. Right? Choosing not to speak would also be a political decision, which is ... I think would be a big mistake.

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