

Make Me Care About...

Make Me Care About...Iodized Salt

Podcast episode 12 transcript

Jen Hatmaker: If you know me, you know that I love to cook, and if you really know me, you know that I love salt. I probably have 15 kinds of salt in my kitchen and I reach for it on the reg. In fact, I have a little tea towel in my online shop that says "Salt is a food group." Just so we're clear, I'm a fan. I am a fan of salt and, you guys, from a young age, I was told that kosher salt was the only salt you should be using to cook.

But I recently learned that not only was I wrong about that, but over 75% of the world is now consuming iodized salt as a way to combat major health and development issues and I cannot wait for you, guys, to hear this conversation.

Venkatesh Mannar: Iodized salt is one of the most successful examples where a nutrient is added to a widely consumed food or condiment that can be fortified to provide essential nutrients to large populations in the world where poor nutrition is a leading risk factor for preventable deaths.

Jen Hatmaker: I can't wait to hear how you figured this out.

Created in partnership with the Bill and Melinda Gates Foundation, this is Make Me Care About. I'm Jen Hatmaker, and with me is Venkatesh Mannar, professor of chemical engineering at the University of Toronto and former president of the Micronutrient Initiative. Today, Venkatesh is helping us care about iodized salt. Hi, Venkatesh.

Venkatesh Mannar: Hi, Jen. Thank you for having me on this show.

Jen Hatmaker: Let me ask you this first. How in the world did you get involved in salt fortification? How are you here? How did you find your way into this important work?

Venkatesh Mannar: Okay. I have, I'd say, impeccable credentials because I come from a family that's been in the salt business for six generations going back almost 200 years.

Jen Hatmaker: Wow.

Venkatesh Mannar: My grandparents and my father, they made salt traditionally as a table salt and for other uses.

When I came into the field, I trained as a chemical engineer here at Northwestern, and I went back to India to continue to produce salt. That was when the whole problem of iodine deficiency was coming to the fore and people were saying that something needs to be done and it needs to be added and so forth, but it's not getting done.

That's when I felt that as a salt producer, I am uniquely placed to understand how one can make this happen. I'm no longer a salt producer, but I focus on the technology of nutrition and adding nutrients to salt and other foods.

Jen Hatmaker: Venkatesh, you just very casually mentioned that you're a sixth generation salt producer. What in the world? That is such a rare story. Of course, this is what you do. This is your destiny, like you were meant to be a part of the iodine solution. I'm trying to imagine what it would be like to go back six generations in a family business. That is incredible. Can you just explain exactly what iodized salt is?

Venkatesh Mannar: Right. Okay. Iodized salt is nothing but plain table salt to which a very small quantity of iodine has been added. Iodine is typically added not just as an elemental iodine, but as a salt of iodine like potassium iodate or potassium iodide because that's stable in the salt.

It's a very simple blending process. It stays in the salt, it's coated over the salt as a very, very thin film. So once the salt has it and it's added into your food, you get that iodine into your system.

Jen Hatmaker: Okay, got it. But I've got a question because, I mean, in the US there's a ton of ways to combat malnutrition. I'm always seeing it everywhere, just supplements, and we need vitamin C and we need vitamin D and we need iron. All those things feel really common to me, but I've really never even thought about iodine. Why do we even need iodine? What happens if we don't get enough?

Venkatesh Mannar: Okay. The human body needs very, very small quantities of iodine. In fact, all you need for an entire lifetime is a teaspoon of iodine.

Jen Hatmaker: Wow.

Venkatesh Mannar: But if a body does not receive that very small quantity of iodine, it is not able to produce enough of a hormone in the thyroid gland that is known as thyroxine so it's such a critical element. But if it is not there, it has to come in through some of the food that we eat. If it is lacking in the food, then there there's a problem because the body is not producing enough thyroxine, leading to a whole range of physical and mental problems, goiter and disability, and also mental problems like cognitive development and mental impairment.

Jen Hatmaker: Hey, listener, just a little aside. We just heard Venkatesh mention that goiters are a super noticeable negative health effect of low iodine. Just in case you don't know what a goiter is, first of all, you're not alone, totally had to Google it myself, but a goiter is basically an enlargement of the thyroid gland and it makes your neck swell.

Why salt? Does iodine already occur in certain salts, or did that just seem like a ubiquitous universal product to put this iodine into?

Venkatesh Mannar: You know, iodine is a bit unique and really different from other nutrients in the sense that there are other nutrients that are present in certain foods, but iodine is not a nutrient that's uniformly distributed. It has to be present in the soil. If there are large parts, even in the United States, where the soil is deficient in iodine, then the food that is grown in that soil, the water that is consumed in that area will not have enough iodine and people won't get it through the food they eat. So they will have to get it through some other means into their system and the only way is by adding it to salt.

The advantage with salt is it's almost universally consumed. All of us take some amount of salt in our food, and that enables a producer like me to put in a certain amount of iodine in a salt and make sure that everyone gets roughly the same amount of iodine. Not too much, not too little.

Jen Hatmaker: Well, that's what you think, Venkatesh. But if you lived in my house, I am telling you that you would get more iodine than you probably need because I'm very heavy-handed with the salt.

Venkatesh Mannar: Right. Okay.

Jen Hatmaker: Let me make sure I understand this. You are saying that certain populations are going to be more at risk from low iodine levels, primarily just by where they're located geographically.

Venkatesh Mannar: Yes.

Jen Hatmaker: What are those populations?

Venkatesh Mannar: The original belief was, and it's still true, that those living in higher altitudes, in mountainous, hilly regions, the Himalayan, sub-Himalayan region, the Andean region in South America, even pockets of Europe, Switzerland and Austria. But now over the past few years, they've found that this problem has spread also to the flat areas and even in river deltas and all of this is interrelated thanks to deforestation and the cutting down of trees. Rivers are getting silted, they get flooded when it rains, and then they leach the soils. When the soils get leached, the iodine in the soil is getting leached out, and foods are also getting depleted in iodine.

This becomes a kind of a cycle by which we are losing out on getting iodine naturally through our foods and the importance of adding it to something like salt becomes critical.

Jen Hatmaker: You touched on this, but I wonder what kinds of health issues can result from poor nutrition and specifically being deficient in certain vitamins and minerals? What's the felt impact of those deficiencies?

Venkatesh Mannar: The body needs of all range of nutrients, and here we are specifically talking of what we call micronutrient. These are typically vitamins and minerals that the body needs in extremely small quantities, and they're typically minerals like iodine, iron, zinc and vitamins like vitamin A, vitamin C, some of the B vitamins, B12, B9. So all of them are needed by the body for various functions relating to both physical growth and development and also mental growth and development and immune systems. So they contribute to a whole range of body functions that are critical for making sure that we have normal healthy lives.

Ideally, we should get them through the foods we eat. That's in an ideal world where we have a diversified diet and we get all of that. But as you know, in a real life situation that doesn't happen. People, either out of choice or out of other reasons, they don't have enough money to buy the right types of foods which could be expensive, then they become deficient.

That's when a whole range of problems arise, especially affecting women of childbearing age and very young children. When young children are affected by these deficiencies, their growth is

compromised, their health is compromised, and that has long-lasting effects through their lives and that you are compromising all this at a time when we have solutions available at extremely low cost that can fix them early and that can be virtually made to work across the world.

Jen Hatmaker: One reason I'm especially interested in this conversation with Venkatesh in this series is because we are, I mean, we're unpacking major issues in the world, like huge global health issues, and a lot of them are really complex and the response is complex and the solution is complex and expensive and it's clunky. But this one is super simple. It's inexpensive, it's so reproducible. I don't know, it feels really hopeful to me.

What I feel curious about is if it was this easy just to add iodine to salt, something that the whole world's already using, what else can we do here? What else can we fortify? Can we apply this to something else? So I'm a hundred percent going to ask Venkatesh that question when we come back. So you guys, this is Make Me Care About, and I'm Jen Hatmaker. We'll be back to learn more about iodized salt in a moment.

This is Make Me Care About, I'm Jen Hatmaker and with me is Venkatesh Mannar, professor of chemical engineering at the University of Toronto and former president of the Micronutrient Initiative. Today, Venkatesh is helping us care about iodized salt.

You've explained to us, Venkatesh, why this fortification and good nutrition is so important. If we brought this in just a little bit closer to maybe some of our US listeners today, what vitamins and minerals are we deficient from currently in the US?

Venkatesh Mannar: In the US if you go back a hundred years, there were a number of widely prevalent mineral and vitamin deficiencies. Even in the 1930s, 1940s, there was iron deficiency, there was vitamin A deficiency.

But thankfully, there was early action in the US which led to a consensus that salt could be iodized, wheat flour could be fortified with iron and other vitamins. So all of this started more than 70, 80 years ago, and many of those deficiencies got corrected over a period of time.

Jen Hatmaker: Are these the same primary deficiencies that we see in low and middle-income countries, or is it different?

Venkatesh Mannar: It's a little different. Low income and middle-income countries, they do have all of these as well. But they are a few steps behind in the sense that there are large parts of the developing world where iron deficiency is still a problem and anemia is still a problem, whereas that's something that's been largely corrected in countries like the United States. It's still there at extremely low levels.

Jen Hatmaker: Is there any resistance to these salt producers around the world?

Venkatesh Mannar: Yes, there was initially because a number of them were small producers, not very well-informed and obviously this was something new that was brought to them. They were initially resistant that this would cut into their commercial profit margins and their other concerns.

But it's funny, this whole program of salt iodization that was spearheaded by some of the international health agencies, development agencies and government have led to a complete sea

change in the salt industry itself. And that type of consolidation and higher quality, better packaging, better distribution systems is happening all over the world today.

Jen Hatmaker: So, Venkatesh, what foods are scientists working on fortifying in the future and with what? What's next? What's next in this field?

Venkatesh Mannar: Yes. Starting with salt itself, the exciting thing is we now have technologies to add other nutrients to salt. Because we've developed the infrastructure for adding iodized salt, we could consider adding iron to salt, B vitamins to salt, zinc to salt and all of that is beginning to happen. In countries like India, they're already beginning to multiple-fortify salt. So that's one thing that's happening.

There's also a widespread movement to fortify rice, wheat flour, cooking oils, milk with different vitamins and minerals. But all of that is beginning to happen as all of these processing industries get modernized and consolidated larger units.

Jen Hatmaker: Just so that I can play the devil's advocate, are there any downsides to fortifying foods?

Venkatesh Mannar: Fortifying foods done in a proper organized manner, with proper government oversight, regulation is absolutely safe because you're providing only a fraction of what people need. Food fortification is basically filling a gap. It's not trying to give you your entire need of a vitamin or a mineral so the risk of overdosing is extremely, extremely rare, but there are some people who resist the addition of something synthetic or artificial to a food.

But, otherwise, I don't see any major downside at all. It's an absolutely safe, something that can be virtually replicated and scaled up worldwide very rapidly at an extremely low cost.

Jen Hatmaker: How have you seen the positive impact of iodized salt on the ground, like in the communities where you've worked?

Venkatesh Mannar: About 40 years ago, I was traveling in a remote part of Uttar Pradesh State in Northern India. It was a village and I was told that in that village, 30% of the population was mentally retarded. I could see many women with huge goiters and that is when we were just beginning to plan the iodization program.

I went back to the same village well after we introduced iodized salt and that village started getting iodized salt and consuming it for 20 years. Today, if you go back to this village, you won't find a single goiter. It's completely gone. It's one case where I could see a public health measure like this have such a widespread and visible impact.

Jen Hatmaker: And in 20 years, that's amazing.

Fantastic. I love ending on that high note. That is an incredible story. And just further proof that this was actually a really simple and inexpensive solution to a really complex problem, like a problem that was deeply affecting people and whole communities. And so I loved this entire conversation and I remain absolutely fascinated with brilliant minds like Venkatesh who think through every angle of a problem and come up with something as simple and effective as iodized salt. Can you even?

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So you guys, if you want to learn more about Venkatesh's work, please just check out the show notes. And if you like this episode, follow the show and share this episode with a friend.

Make Me Care About is produced by Jesse Baker and Eric Nuzum of Magnificent Noise. Our production staff includes Sabrina Farhi, Hiwote Getaneh, Julia Natt and Kristin Mueller. Our executive producer is Eric Nuzum, and I'm the host, Jen Hatmaker.