

2018 Hilliard Discussion | Dr. Cornwell

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Dr. Lightfoot: So our next speaker comes to us from the great Northwest. Please join me in welcoming Doctor Patina Cornwell to the stage. [applause]

Dr. Cornwell: So I'm Patina Cornwell. And my talk is titled Taste the Future. This is about children and it's about taste preference development. So I'll start. On this overpass, in Ann Arbor, Michigan, I was walking with a food scientist from another talk and we were talking about spaghetti sauce. And he said, "You know, the deal is this. The brands are in competition. They're marketing against each other all the time and they keep escalating the flavor in the foods. More sugar. Oh, this didn't taste test well. More salt there. More flavoring to the point that many foods in our environment are, actually, quite obesogenic." That leads me to my first of four facts. And that is, we live in an obesogenic environment. So the structures are there, the processed foods low in nutrition, and calorie dense. And how do we cope with that?

My second fact that I'll work with today, is that behavior change is hard. People that are on a trajectory toward overweight or obese standing, that is really very difficult to change. We need to start early. That's my third point. Children are programmed early. Very early. And so we need to get in there to change this epidemic by starting with children. Lastly, we're plastic. By this, I mean, we had this plasticity I already mentioned, that we are able, as omnivores, to eat lots of different things. That's great. It's also bad. I'll show you why. So we are not alone in facing an obesogenic environment. This is a picture showing a child overweight and obesity in many countries. In developed countries, it's quite problematic. In developing countries, you see with bimodal distribution of income. The poor may not be overweight, but the wealthier, even in those countries, are becoming overweight. So this obesogenic environment is very much fueled by flavor and taste. And we ask ourselves, "Well, how can we better understand how a young child is influenced by this?"

That brings me to our first study. In this study, we were looking at preschool-aged children. And we asked them to do some collage tasks so that we could learn their brand knowledge. So we asked them to make a collage of all the things that go with McDonald's, make a collage of all the things that go with Burger King, and things that don't belong, like a pair of shoes. And so they were given 18 cards and sorted them. The same with Pepsi and Coke, and with other studies. We've done other sorts of things, like cereal. And we learned that the children with high brand knowledge, from their experience and exposure-- we're talking about being able to differentiate one type of french fry from another. Those children with the highest brand knowledge exhibited, based on their parent's report, a high preference for sugar, salt, fat in their diet. So the preference has developed with those foods are generalized to other food preferences.

Further, and we're talking three to five-year-olds. These children also exhibited, what we called, flavor-hit behaviors. They like sour gummy worms, bold ranch, nacho, barbeque, and they add condiments to foods so that they can taste something. So with these young children already programmed in this way, policies that try to influence school-aged children to eat healthy food end up in the many, many, many plate waste studies showing that food is wasted. I see a nod in the audience. It's amazing the amount of food that is wasted. Offering children who won't accept these foods. For example, a whole apple wasted is 62% of the time. Whereas, apple sauce with added sugar and flavoring, is only wasted 20 something percent of the time. Moreover, children, in this particular study, that also purchased competitive foods from vending machines wasted even more.

So my second fact, behavior change is so hard. If you want to lose weight, the definition for having done that is, that you lose 10% of your body weight and you keep it off for a year. Only 20% of adults are successful at that. And probably more disturbing, is that we're sending children along that path. And that's the reason we need to start with the youngest people possible. So another contributing factor to the challenge for children of everyone being overweight or obese-- I don't mean everyone. Only 71% of us are overweight or obese. But everyone seeing overweight and obese in their life is that-- this particular study, not mine, but worth reading. Is that 95% of the parents feel that their child is about right. You can no longer see something that is the new common denominator.

That brings me to my third point. Children are programmed early. And this is one of my absolute favorite quotes out there. Children like what they know, and they eat what they like. One more time. Children like what they know, and they eat what they like. The question then, is how does opportunity for children to learn, and to know more healthy foods, and to like them, versus, to learn about and know more unhealthy foods? We're up against it because flavor preference starts really early. You are already programmed for sweet when you're born and already tasting the seasonings and spices in the things that your mother was eating. So absolute volumes of literature will tell you that you need, at least, 10 trials before you know a vegetable as a young child. We're not talking about food neophobia. So they're clinically different. But just the average child needs 10 exposures. And we asked ourselves, "Well, let's do a study and learn if there are things that stand in the way of exposure."

We did a study with a drink trial. The same child two different times. And they drank either a sweet drink or water, and they were allowed to take as much vegetables as they wanted. We weighed everything. You can already guess this one, can't you? That's right. On the water trial, the child ate more vegetable than on the sweet drink trial. You say, "Oh, Patina. That's just about children." No. We did a study with adults. And that goes pretty well together, french fries and a soft drink. Cringe factor with the asparagus. Cola just doesn't go with asparagus. Right? So you set yourself up for trouble if you start your table with a sweet drink. And for the water study, just one little story that goes with statistics, and that is, that on the first water trial, I happened to notice a little girl dipped her carrot into the water before she ate it. That's odd. The third time, it happened with a different child. I got on the phone to my co-op and said, "They have no idea how to eat a carrot, unless they dip it in something." Ranch dressing. No idea how to eat a carrot and taste the sweetness in a carrot, is simply a delivery system for ranch dressing.

Three years after this study was published, I was in my YMCA and I saw this poster. And I was like, "Yes." We had had so much publicity from this study. Pediatric Magazines had quoted us, we'd been-- I had emails from people where I presented in an academic conference. And they email, "I started having water at the meal and my three-year-old is so fantastic. She ate some carrots." So it did influence things, but we're out to really nail this down. And to my fourth point, that we're plastic. Our plasticity as omnivores, is good and bad. Our plasticity allows us to eat just so many different things. This study looks at the parent sugar, salt, fat preference in their diet, which influences the child's environment, which influences their preferences. But this study is an observational study. In preschools, and we're looking at children choosing their own foods and choosing what they'll add to the food. So they can have a condiment if they wanted. And once again, the stories sometimes are as good as the statistics. As I'm observing this child that had just went into preschool, and the food went around, and the food was on his plate. And he got his soy sauce and he ate the soy sauce, but none of the food.

So this is a chart showing the condiments taken and the time with the preschool.

Right? And this is the information to show you the high sugar, salt, fat families. This is kind of what we thought. The children who come to preschools are used to high sugar, salt, fat in their diet and they begin to moderate. They taste different foods, they learn that they don't have to have this. Things are looking pretty good. And we also, though, had this, which we weren't expecting. And this is the low sugar, salt, fat families. So the families, basically, having a very moderate diet, in terms of, use of sugar, salt, fat condiments, high flavored foods. The kids get to the preschool and the low sugar, salt, fat family children, the children with this background, they start to use condiments, and they start to like them, and over time, they use more.

Now, this resulted in the preschool - I'm very happy to say - developing a woah campaign for condiments. Saying that, "Not as many condiments should be used." And so it was good to learn, but it just shows our plasticity. Back to my four facts. First of all, we live in an obesogenic environment, but we can choose. We can choose not to eat those foods and it's a signal to the marketplace. If those kinds of foods are not sold, they're going to change their market offering. Behavior change is hard, but not impossible. Think, if we changed our thinking about a diet. Instead of saying, "Oh, you need to count calories. You need to restrict foods." And we said, "Our starting point is to change the palette so that you want to taste the healthy food. And you can't abide by some of the processed foods that are in our environment."

The third point, being that, children are programmed early. Three to five-year-olds, already, with a preference trajectory that takes them to a place we don't want them to go. And lastly, we are plastic, and we need to take advantage of that. And taste your future. Thank you. [applause]

- Dr. Lightfoot: Good job. Thank you, Doctor Cornwell. I have a few questions for you. Actually, they're still coming in. So this is from Kennedy, at Texas A&M at C Stat. How would one best go about resetting their palette to appreciate the basic makeup of natural foods?
- Dr. Cornwell: One, is definitely to have water with your meal, where you begin to taste the foods. And then, I would probably say, you can identify the high sugar, fat, salt foods in your diet and ask yourself, is there a better alternative that's lower in sugar, salt, fat? If it says, bold. If it says, on fire riveting or whatever on the package, probably is not your choice.
- Dr. Lightfoot: Okay. And this follows along that question, actually. It's a little bit in depth. And this is from Ed, in Ohio Northern University. Do you think that the reversal of this kind of dietary behavior in children is akin to addiction resolution treatment?
- Dr. Cornwell: We all know that addiction has a pretty precise definition, but if you ask me, I would say that yes. The flavor is addictive. And the more you have, the more you need. And one of the reasons I'm here today, is because my mother died of congestive heart failure, partly because she could not part with salt. And once you're there, it's very hard to move away from it.
- Dr. Lightfoot: So I think this, actually, goes along with this whole thing. This is from Faith. If the parents don't buy and make healthy choices, what is the realistic chance that a child will ever be exposed to healthy options because the kids don't do the grocery shopping?
- Dr. Cornwell: I agree with you.
- Dr. Lightfoot: So we should let the children do the grocery shopping or we need to help the parents?
- Dr. Cornwell: We need to help the parents.

Dr. Lightfoot: Okay.

Dr. Cornwell: Help them learn how to prepare food, help them to-- we have food deserts. We have places where people find it very hard, but we can do it if we want to.

Dr. Lightfoot: Excellent. I'm sorry. I've got so many questions here that are just rolling in. This is Noah, from Queen's University. What do you think are the most influential factors for someone to be able to change their diet?

Dr. Cornwell: I think it's probably cohort because if you're around people and you associate with people that are eating healthfully, I think it's easier for you. And certainly, we see the children at the preschools. A number of them, they start to talk about, "My friend eats this. My friend likes that. And I can do the broccoli tree crunch. Want to see? Ah. So does Susan."

Dr. Lightfoot: So it's the people that we hang around with. Right?

Dr. Cornwell: It is.

Dr. Lightfoot: Right. Excellent.

Dr. Cornwell: It does.

Dr. Lightfoot: Well, thank you, Doctor Cornwell.

Dr. Cornwell: My pleasure. Thank you.

Dr. Lightfoot: Please join me in thanking Doctor Cornwell for her talk.

Dr. Cornwell: Thank you. [applause]
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