

S04E07: How can we make food that is good for health, societies, the planet and the economy?

Crossing Channels

Interdisciplinary answers to today's challenging questions

A Podcast series hosted by **Richard Westcott**

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Season 4 - Episode 7

HOW CAN WE MAKE FOOD THAT IS GOOD FOR HEALTH, SOCIETIES, THE PLANET AND THE ECONOMY?

With

Jonathan Stieglitz, IAST

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HOST

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GUEST SPEAKERS

Martin White (Bennett Institute for Public Policy, University of Cambridge), Jonathan Stieglitz (IAST)

Richard Westcott 00:01

Hello and welcome to Crossing Channels. I'm Richard Westcott, how can we make food that is good for health, societies, the planet and the economy? That's the subject of the latest in our podcast. Collaboration between Cambridge University's Bennett Institute for Public Policy and the Institute for Advanced Study in Toulouse as ever, we're going to use the interdisciplinary strengths of both institutions to explore a complex issue, how do we address global health challenges, particularly in relation to diet and nutrition? What role do public health policies, cultural practices and lifestyle changes play in shaping our food choices, and how can we create food systems that ensure everyone has access to healthy and sustainable food while maintaining economic viability?

Richard Westcott 00:59

To explore these issues today, we have Martin, white, Professor of population health research from Cambridge University and the Bennett Institute. Martin, start us off. What does your research focus on?

Martin White 01:09

So, we have a huge and growing problem with commercial food systems that are driving worsening diets and the health consequences worldwide. So my research focuses on understanding why this is the case and what we can do about it.

Richard Westcott 01:22

Joining us from the last, we have Professor Jonathan Stieglitz. Jonathan, what are your research interests?

Jonathan Stieglitz 01:28

I'm an evolutionary anthropologist studying Health and Ageing, and I've been working with small scale subsistence societies, particularly in lowland South America, for the past 20 years, where we document their health patterns, their ageing patterns, and link it to behaviour and various other factors, and see whether their patterns of Health and Ageing are similar or different versus other populations, and if so, perhaps why?

Richard Westcott 01:57

For decades, we've seen significant shifts in how we approach food, health and nutrition. Yet we still face growing health challenges worldwide. According to the World Health Organisation, non communicable diseases such as heart disease, diabetes and cancer are responsible for 71% of global deaths each year, from rising rates of chronic diseases to inequalities in access to nutritious food, the gap in public health outcomes continues to widen. The food system is also responsible for a substantial share of climate change, generating emissions from livestock, deforestation and excessive use of chemicals. What should we be eating? And how can we rethink our food systems to ensure that healthier and more sustainable options are accessible to everyone. Now, Martin, you're running this huge project in Birmingham looking into how to transform a whole urban food system to make it more healthy. I mean, can you give us some idea? First of all, what do you mean by a modern food system?

Martin White 03:16

So, I think perhaps there's three things to say here. First of all, the modern food system is increasingly characterised by a small number of very large companies, and these companies are often what we call both horizontally and vertically integrated, which means that not only have they acquired multiple brands, often making similar products, such as all the ice cream companies, but they also acquire the means of production, such as dairy farms, the means of retailing and logistics that link all the parts together. The second thing to say, I think, is about why this has happened. So there's a long story here, which we can maybe come to later, but the short version is that the foods that are most profitable are the most highly processed, which might sound counter intuitive, but essentially, companies discover that they can add value to cheap raw ingredients like fat, salt, sugar and flour by creating irresistible combinations of them together with flavourings and other industrially manufactured ingredients, and further value is then added by aggressively marketing the products. You know, humans didn't evolve thinking that they needed a particular brand of chocolate bar. But industry has created demand for these and then thirdly, I would say, is convenience. As the world's increasingly changed, economically, technologically and culturally, over the last 200 years or so, demand for convenience has been generated such

that we've seen, I think I would say, particularly over the last 50 years, huge developments in convenience foods available to buy at a supermarket, of course, but now also to order from your sofa on a smartphone.

Richard Westcott 04:49

So it sounds like, effectively, the modern world is set up to be unhealthy and we need interventions. Is that a good summary? I would absolutely say so. Yes, in complete contrast then to the big urban environment that Martin's looking at. Jonathan, you've studied farmers and foragers in the Bolivian rainforest. I mean, can you describe their food system?

Jonathan Stieglitz 05:08

Indeed. So it's a subsistence lifestyle, okay? And I think a really important thing to understand is, is that the subsistence lifestyle requires high amounts of physical effort. So if you're a hunter, you walk 10 to 15 kilometres to find your prey, and then you come home. If you're clearing a horticultural field, you have to do lots of machete preparing the field, cutting down large trees, etc, even things like getting water. One goes to a river to collect their water. There's no sort of water runs out of a spigot. So this is essentially a subsistence lifestyle requiring high levels of physical effort and activity. You also, of course, know what you're eating, and you probably have fewer food choices than at the intermarché or supermarket, but you're you have diverse sort of microbial exposures all around you. These are generally high pathogen environments. And aside from that, you have other metabolic demands when there is energy surplus, you know, one has to fight disease, one has to repair tissues from high levels of activity and having high fertility, etc. These patterns that we see among the Chimane may be relatively are probably fairly similar to those that occurred throughout human history and human evolution. One thing that we know is that hunter gatherer diets, wherever humans have lived, have been among the most nutrient dense in that specific environment, but also variation in consumption. So there are periods of surplus, but also periods of deficit when there is surplus in these subsistence societies, a lot of that surplus is converted into things like the immune system for fighting disease, having more babies, basically, humans expend a tonne more energy than other than our non human ape relatives. So you can contrast all of this with what Martin has just been describing about energy systems in industrialised nations, where essentially little effort is required to get food, you you have sometimes too many choices, and I think there's some research suggesting that having too many choices can actually prohibit healthy decision making, and you have fewer metabolic demands because we live in more sterile, lower pathogen environment, so there's less of an outlet for energy surpluses to be directed toward. Plus, of course, we have labour saving devices that help us during work and leisure.

Richard Westcott 08:00

The thing is, Jonathan, the world you're describing so different to Martin's world, but in reality, the modern world isn't going to go back to that. Is it? Is there anything that the modern world can learn from that world in Bolivia that is realistically implementable?

Jonathan Stieglitz 08:03

Yeah, so first, just to briefly characterise the Chimane diet. So they eat essentially, absolutely, more calories per day than your, say, typical American, about 2500 calories. Okay, and over half of these calories are coming from carbohydrates. So this idea that you can be healthy while eating lots of you have to avoid carbohydrates to be healthy is

misguided. Chimane also eat about 30 to 40% more protein, but half of the amount of fats as Americans and twice as much fibre. Okay. And so to briefly summarise the key health findings we've been finding for the last 20 years, Shimane have among the lowest levels of coronary artery disease that's ever been observed, minimal prevalence of high blood pressure and little age related change in blood pressure. Also same for type two diabetes, atrial fibrillation, many markers of cardiovascular Cardiometabolic Health. We also noted that they had a very low case fatality rate associated with COVID which might be linked to the fact that they had very few other sort of common comorbidities, like obesity, metabolic syndrome, these types of things. So one of the things we're learning is is that you can humans can live in environments that essentially produce healthy hearts and also healthy brains. Shimani have among the lowest prevalence of dementia anywhere observed. You know, this doesn't necessarily mean that subsistence context or these environments or any attempts to mimic them with things like the Paleo diet or whatever fad diets people are onto that year, those environments don't necessarily promote health in a broad sense, writ large, Chimane have other health problems. You know, high levels of musculoskeletal pain, osteoporosis, this, this type of thing. There's no such thing as one optimal diet, but detailed study of small scale populations behaviorally, plus analysis of their health outcomes and the linkages between the two can, I think, inform our sort of guidelines and recommendations for how people should be living in sort of a healthy way.

Richard Westcott 10:10

Let's bring in Martin here, because you're going to be coming up with recommendations and guidelines to redesign a sort of modern system. Do you hear anything there that could be implemented in the modern world? And the other question I want to ask is really about how you sort of force it on people? Because if you leave the system as it is, it looks like people just eat conveniently and the wrong kind of foods. And when I'm in a supermarket, I can't tell what's ultra high processed and what isn't it's really difficult to understand. So what role can government policy play in changing things together with the industry, Martin?

Martin White 10:49

Well, I think the first thing to say there are clearly things to learn from hunter gatherer societies. And I think that the kind of data that Jonathan's talking about, he's collected, does in many ways, mirror data from large cohort studies in high income countries like the UK, which have looked at which have looked at diet in detail, and we find that people who eat a healthy diet that's high in vegetables, it can be high in carbohydrates, tends to be lower in fat, high in fibre in particular, has very wide variation in the diet. So lots of different vegetables is a lot healthier and leads to lower incidence of diabetes, cancer and various other things. So there are lots of similarities there, and we can learn from that. I think coming to your other question, which is about, what do we do about it in the UK? So I think the first thing to say is that we know very well that telling people to eat a healthier diet doesn't work. Education is not the answer to this. I would add one caveat to that, which is that children do need to learn from an early age about healthy eating and about how to prepare food and so on. It is hugely problematic if children leave school and they don't know how to prepare food, because they're going out into the wide world, and they're faced with a food environment which is essentially promoting and pushing unhealthy foods at them at a very kind of high rate, the pressure to eat convenience food is huge from the aggressive advertising that companies use. Now, the bigger problem then is that we have developed a food system

that's dominated by very large global food companies that predominantly produce highly processed foods and market those at incredibly well. They're marketed in ways to maximise profits and growth the companies, and this makes them the foods artificially cheap because they're sold at very high volumes. The only way you can really deal with that problem is to regulate those industries. And that's, you know, what we started to do in countries like the UK and some other countries, South America and so on, with things like sugar taxes. So taxes on sugary beverages, other food, taxes on unhealthy processed foods, regulation and marketing of those foods. But I think it's only through doing using regulation that we can start to put pressure on that industry to change.

Richard Westcott 13:36

I think you've looked at some detail, at the drinks industry Levy, the sugar tax on sugary drinks. Was there any evidence of whether it worked? As I understand it, in the end, the costs just got passed on to the consumer. But did it make people healthier? Did we know if it worked?

Martin White 14:00

Yeah, it did. The the soft drinks industry levy had several effects. Firstly, soon after it was announced in 2016 and before it was implemented two years later, we found that companies started to significantly reduce the amount of sugar in soft drinks, which reduced both the amount of sugar purchased and the amount consumed. There also seemed to be what we called a signalling effect. So the media attention around the announcement of the soft drinks industry levy led to people reducing consumption of sugary drinks before the tax was even implemented. And then, thirdly, over time, the cost of the levy paid by companies has been passed on to consumers raising the price of sugary drinks more than the price of drinks without sugar. So there's now this price disincentive to buy sugary drinks, and we were able to measure reductions in tooth decay and in levels of obesity in children over only a couple of years after the levy was introduced. And we estimated that the changes in consumption that we measured would lead to. Substantial reductions in diseases such as diabetes and heart attacks over the life course of the present generation of children, which, of course, will also result in substantial reductions in healthcare costs, reduced sickness, sickness absence from work and so on.

Richard Westcott 15:12

That's really interesting results. Jonathan, you want to come in here?

Jonathan Stieglitz 15:16

Yes, I'd just like to bring this up because given Martin's focus on sugar and sugary drinks. Sugar is one type of food where we really do see massive increases among Chimane, in consumption, in the in, you know, I'd say the past decade, as they undergo this process of market integration, modernization, whatever you'd like to call it. So, you know, Chimane, they're undergoing a nutrition transition, basically from their low fat, low salt, high fibre diet, where you need tonnes of exercise to get food, to one with low lower fibre, higher salt, cholesterol, refined sugars, these types of things. And I'd say so it's kind of a nutrition transition that is accompanying other transitions, like epidemiological and demographic and I'd say in the early stages of this transition, food security can be improved, health can even be improved. We're now seeing children grow taller than they were in previous cohorts, for example, when physical activity is still high early in this transition, but in the longer term, with

increasing integration into markets, more sedentary lifestyles, as may be inevitable with this process of modernization, there may be really severe negative health consequences for groups like the Chimane, who are already relatively poor.

Richard Westcott 16:39

And quite interesting, Jonathan, is there an awareness with the Germany about what's healthy and what isn't healthy and and do you see the food industry affecting, you know, their influencing their decisions in Bolivia, for example, are they seeing advertising?

Jonathan Stieglitz 16:54

There's an awareness that there is an increasing rise of diseases like diabetes that are linked specifically to food or the balance between energy intake and output, but people don't necessarily know the details or mechanisms, and there's rising concern among the population as family members are Now dying of diabetes or being diagnosed with certain conditions, as healthcare is improving that people need to make certain types of lifestyle adjustments, but many of these adjustments are difficult given the constraints that people face.

Richard Westcott 17:35

Well, this brings us on nicely to global inequality and food insecurity. Martin, what steps can we take to make sure all communities have access to healthy food but also the information that they need?

Martin White 17:49

So I think there's several issues here. First, now, more than ever, with growing threats to global security, countries need to really focus on national food security, and the key here is resilience, making sure that supply lines are resilient, and increasing the proportion of food that is produced within a country's borders as far as possible. Obviously, this is a lot easier for a large place such as the US, for example, compared with a small island state. Secondly, I'd say that household food security in high income countries is clearly a result of poverty. People often talk about food poverty is different from poverty. It's just a symptom of poverty. People struggle to feed themselves when they don't have enough money. So we need to think about our employment and welfare systems to ensure that people don't fall into the poverty trap and become food insecure and provide the kind of support that people need to feed themselves when necessary, which might include things like food banks. And then, thirdly, we need to deal with the structure of the food system. It's much easier to feed yourself with cheap, unhealthy foods than to provide nutritious, fresh foods, and that's a system problem that needs to be fixed.

Richard Westcott 18:59

Jonathan?

Jonathan Stieglitz 18:59

Well, I think until relatively recently, poverty in particular, was often associated with calorie malnutrition. There is now an increasing proportion of the world's poorer obese, and many countries face this sort of dual burden of malnutrition and also being overweight. So this is a massive problem. Of course, food insecurity is not a new problem. As I alluded to, earlier periods of food scarcity were likely extremely common throughout human evolutionary

history. We clearly have physiological adaptations to cope with periods of uncertainty in the food supply, the fact that we deposit fat on our bodies in unique ways, preferences for energy dense foods. These all suggest some evolutionary history of scarcity with respect to the Chimane in particular, you might think on one hand, they're producing their own food. They know very well their local ecology. Perhaps there's relatively little insecurity, but in fact, there's tremendous levels of food insecurity, and. And of course, natural disasters, things like flooding, which we've seen catastrophic flooding in Bolivia, can just decimate crops of entire villages. Now, despite all of that, oh, and also something I forgot to mention, another sort of macro level, food insecurity risk factors, rapid population growth and the Chimane have their population size has more than tripled in the last 15 years since we've been working with them. So all these things, you know, you think that they're prime candidates for a population with rampant food insecurity, and indeed, we do see high levels. On the other hand, you know, only a handful of Chimane, less than 5% of people are consuming under 1000 calories per day based on our population level dietary estimates from food frequency questionnaires or dietary recalls. Actually, most people are in on the positive end of the caloric surplus.

Martin White 20:54

I think there's an important link here between what I've been saying about the commercial food system and food insecurity globally, and it particularly relates to the point Jonathan made about what we call the double burden of malnutrition. So two things, one is that as these companies get bigger and bigger, these big global food companies, they are constantly exploring new markets. And it's very clear to see that the markets they're developing are primarily now in low and middle income countries. You know, we can see very well known soft drink manufacturers, for example, setting up supply lines in very low income countries that penetrate into the most deeply rural areas where there are remote tribes and so on, which I find very, very disturbing. The second thing to say is that we think of the food system as what we call a complex adaptive system, so it changes and evolves over time in response to external stimuli. And one of the fears that I have is that as higher income countries in particular are increasingly regulating the food industry and putting external pressure on it to limit growth within our contexts, that growth is going to appear elsewhere. We talk about this thing called the balloon effect. So it's like squeezing a balloon and the air doesn't come out, it just pops out in a different place. And that's what we're seeing happening. So I think, you know, we've not actually measured this, but one of my fears about the soft drinks industry levy in the UK is we can see there's a big reduction in demand and consumption of sugar. Now the people who produce sugar in the world are not going to produce less sugar. They still want to make the same profit. In fact, their investors want them to make more profit, so they are constantly looking for new markets for sugar. And you know, it becomes very clear that those markets are going to be in developing countries.

Richard Westcott 22:57

We've spoken about calorific intake a few times here, Martin, just to give us a bit of a benchmark, what's the recommendation for people in terms of calories per day?

Martin White 23:06

So current UK recommendations are that men should consume no more than two and a half 1000 calories per day, and women no more than 2000 calories per day. But of course, you

know those, those recommendations are based on the average person. People who are have heavy manual jobs, for example, or athletes and so on, will have higher calorie intakes. People who, like me as an academic, spend a lot of my time sitting in front of a computer, probably need to eat a little bit less.

Richard Westcott 23:36

We're seeing big changes in the way drugs are affecting people's view on weight and size. We're seeing an explosion in people taking weight loss drugs. We're seeing brain implants that can switch off your desire for certain things like alcohol. Martin, where do you see all of that going?

Martin White 23:53

So, I think a couple of things to say. The first is that we have these new classes of drugs, and they have some degree of proven effectiveness in some people, I think they are potentially a really good solution for people who are hugely overweight, who are have proven to be resistant to behavioural ways of reducing their obesity. The problem we have at the moment with these drugs is is that they do have this this kind of limited role, but they are being promoted by drug companies and others as a kind of global solution to the problem of obesity. And that is absolutely not true. You know, you only have to look at the numbers on obesity, the scale of the epidemic globally, to understand that this is not a problem that we are going to solve one person at a time. It's a problem we have to solve with whole population interventions. The second reason that that is folly is that these drugs are hugely expensive, so you can do these calculations on the back of an envelope if you were to scale up. A prescription of these drugs to everyone in the UK who was overweight or obese, you would immediately bankrupt the NHS, probably the whole government. I mean, you know, we are talking mind bogglingly huge sums of money. I think there is another aspect of this which is somewhat problematic, I think, which is that, I think that the drug companies, Pharma has seen, sees these new drugs, they also they all see new drugs, any new drugs, as a real opportunity, and it's a big opportunity to make more profits, and in the case of what we call lifestyle drugs. So drugs, of which of you know which I would class these, I think there is a huge risk that these drugs get promoted to the population rather than to medical practitioners, which is where they should be promoted. So I think there's all kinds of potential problems with these drugs. They are not a solution to the population problem of obesity, but they do have a clear clinical role for some.

Richard Westcott 26:03

Now, we always like to end by trying to find some positive things to be optimistic about the future. Obviously, some of the pictures that you're painting are it feels like there's an inevitability that things are going in a more unhealthy way. Jonathan, first of all, what gives you some hope for our future with nutrition and health?

Jonathan Stieglitz 26:23

Sorry, you're talking to the wrong person. No, I'm just kidding. One thing that I'm tremendously optimistic about based on our project's findings is is that you know the Chimane era case study that show that one can live to relatively advanced ages, the 70s, the 80s without experiencing what many think is some inevitable decline or dysfunction of many biological systems like cardiovascular systems or brains. We can live to very advanced ages and still, you know, maintain many aspects of our of our health. Okay, so

that's one reason for optimism. The second thing I would say is that there's tremendous promise in studying lifestyle and health of small scale populations. So I'm sort of positive, optimistic, hopeful that we have lots to learn from these from diverse populations, humans in different places of the world can respond extremely differently to the same exposure. This sort of one size fits all approach for understanding our food and our health may be ineffective in many ways and sometimes even potentially damaging. If bad recommendations are being made, there's a reason to be sort of hopeful that you know, there's a lot of work to do, and that we can stand to learn quite a bit from studying humans in different contexts. And I think that's that's a good thing.

Richard Westcott 27:48

Martin, how about you, when you look forward 20 years, do you see, perhaps countries like Britain doing better, but the rest of the world doing worse? Or what gives you some optimism?

Martin White 27:57

Yeah, interesting question. So some basic things. First of all, I think, firstly, what gives me hope is that, you know, as we've discussed today, we actually have a very good idea of what a healthy diet looks like and how to produce it. So that, to me, that's a hopeful message. I'm also encouraged by the huge interest that people have in food and the enjoyment people gain from growing it, preparing it and eating it. You know, we all need food. We, you know, most of us enjoy it. So I think there's some real positives there, but we do need to solve the structural problems that are preventing everyone from being able to do so, and that, you know, is a policy question really, and we are not going to be able to do that unless governments really grab hold of this really firmly and develop food strategies that are comprehensive, that cross all government departments and really take a holistic view of this. The UK government actually, right now is developing a new food strategy, and I was in a ministerial Round Table yesterday discussing it. So you know that also gives me a little bit of hope in our context.

Richard Westcott 29:03

Well, what a fascinating topic. And thank you so much to my guests today, Martin White from Cambridge University and the Bennett Institute, and Jonathan Stieglitz from the Institute for Advanced Study in Toulouse. Let us know what you think of this latest episode of season four of Crossing Channels. If you enjoyed it, then do leave us a review. It helps us to shape the future episodes, and it helps people to find us too. So we do appreciate it. Do also please scroll through past episodes. We've covered everything from mental health amongst the young to whether Europe has already lost the global tech race.