



DR. T. COLIN CAMPBELL INTERVIEW

The China Study

By Chris Wark

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Hey everybody. It's Chris from Chris Beat Cancer. And today my guest is Dr. Colin Campbell. Dr. Campbell is a legend in the health and wellness world. He's been studying nutrition for over 50 years and has authored over 300 research papers. He's also a professor emeritus of nutritional biochemistry at Cornell University. Dr. Campbell is most famous for the China study, which was the culmination of a 20-year partnership with Cornell, Oxford University, and the Chinese Academy of Preventative Medicine, and is the most comprehensive study of health and nutrition ever conducted. Dr. Campbell is the co-author of the international bestselling book about the China study, called "The China Study," with his son, Thomas Campbell. And he also authored the international bestseller "Whole: Rethinking the Science of Nutrition." I've read both of these books. They're both fantastic. I highly recommend them all the time to anyone that's interested in health, nutrition, and preventing and healing chronic disease.

Chris: So, it's an incredible honor to be with you, Dr. Campbell. Thank you for taking the time to do this interview.

Dr. Campbell: Thank you. It's my pleasure.

Chris: So, I'd love to start by asking if you would take us back to your earliest discoveries, regarding nutrition and cancer.

Dr. Campbell: Well, my research started 63 years ago, to be honest about it, on food and health, in general. And that was my graduate research study. And my interest, at that time, and my doctoral dissertation was focused on the idea that the more protein we consume, the better we're going to be, health-wise. And that really meant animal-based protein. So, that's the background it came from. In addition, I came from a farm and did that sort of thing, just like a lot of people. But in any case, I had my first faculty position in 1965. That was at Virginia Tech, Department of Biochemistry. I was asked to be coordinator for a national program in the Philippines, supported by the State Department – a project that was designed to develop a model for feeding malnourished children.

And so, the idea, in my community (and I went along with that too), was that the more protein they got, the better off these children would be. Malnourished children generally were due to either inadequate calories or not enough protein. So, we took up that responsibility. And I just happened to have seen something that was totally anecdotal. Namely, it appeared that the children who ate the most protein in the Philippines – small in number, by the way – seemed to have the higher risk for getting

liver cancer. Hard to believe. But I saw it. And at the same time, there was an article from India. An experimental animal study, at the time, that suggested that high protein intake could turn on cancer. I had just organized a laboratory in Manila to analyze for chemical carcinogens that cause liver cancer.

That combination of experiences were not terribly impressive, but it left me with a question in my mind. On the one hand, we were going there to make sure that these children got more protein; good quality protein, so to speak. That'd been animal-based. And on the other hand, I'm seeing this, really not quite believable. Not consistent with what I thought I would hear. So, that meant I had to answer that question. And I got a grant from NIH to do the research experimentally back home. That grant lasted for the next 27 years. So, during that time I learned a lot of things and came to the realization that high animal protein consumption increases cancer. In fact, it was very strong. It was really incredibly impressive actually, and the various ways we did it. It was impressive too, from the Indian workers. They'd seen the same thing.

So, it was at that point in time, I had a chance to go to China. Now, we're talking about the 1980s. To go to China to have a look there to see whether or not, in a human population (not experimental animal) whether high animal protein consumption might be related to cancer. In China, they had just completed a massive survey on some 2,500 counties showing the cancer rates for these different counties. And so, with my colleague from China and myself and another colleague from Oxford University, we organized a study in China to survey, as best we could, the various things that people do. To see why cancer was so common in some counties and not in others. Differences in these different counties.

So, we did a dietary survey. We actually measured what they consumed. We had access to a lot of data on disease rates. We collected blood samples and urine samples and so forth. All in the effort to see whether or not diet had any effect on these different cancer rates in China. I was particularly interested in knowing whether or not the consumption of animal protein might be related, because of my work back in the laboratory. So, the China study served two purposes, in a sense. I was able to see whether or not what we were looking at in the laboratory might be confirmed in humans. And secondly, there could not have been a better opportunity in a case like this because the rates of cancer for about a dozen different cancers were very different for different parts of the country. So, we collected just massive amounts of information to see what we could find. And sure enough, after getting that information and starting to look at it in the early 1990s, it essentially confirmed what I was seeing in the laboratory.

So, it was a combination of laboratory experiments, together with what we saw in China, together too with other information from other laboratories. They convinced me that the higher the consumption of

animal protein (obviously in the form of animal food) makes for cancer. It was quite remarkable. It turns out the kind of diet increases cancer, in this case animal protein-based diets, that same kind of diet also increases heart disease and diabetes and a few other things. So, I felt like I was onto a really big opportunity here, concerning nutrition. That it had such a remarkable effect. Not only in terms of the size of the effect, but also in terms of the breadth of the effect. Meaning a variety of different diseases. Information was all drawn from the consumption of a whole foods, plant-based diet. That was great.

Chris: And I think it's worth mentioning that you grew up on an animal farm, right?

Dr. Campbell: I grew up milking cows on a dairy farm.

Chris: On a dairy farm. So, you didn't come into this research thinking that everyone should eat a plant based diet or be a vegan or whatever. Right?

Dr. Campbell: Absolutely not. I didn't even know the word vegan or vegetarian, at the time I came to this work. It had nothing to do with it.

Chris: How long did it take for you to make your own personal decision to change your diet? How many years of this research and these clues did it take to convince you?

Dr. Campbell: Well, keep in mind I started the formal part of the research in 1969 In 1978, 19 years later or so, I started to see some evidence in our laboratory animal studies that was very suggestive.

Chris: Can you talk about that?

Dr. Campbell: Yeah. I mean, for example, when we fed animals 20% protein as a percent of calories... And the protein we were feeding, by the way, was milk protein. When we started feeding that at this higher level of 20% of calories, that's when the cancer really grew. Cancers that were initiated by a chemical carcinogen, the one that I was trying to, in the Philippines, identify how much was being consumed, basically.

Chris: And what's the name of that carcinogen?

Dr. Campbell: Aflatoxin. Aflatoxin is compound produced by a mold. It was then, and I think it still is today, the most potent chemical carcinogen ever discovered.

Chris: Is aflatoxin a concern for people in Westernized countries like the US?

Dr. Campbell: No. I say no. I've followed that question for many, many years. Basically, aflatoxin tends to occur in peanuts and corn. And during the 1960s and 1970s, it was a great concern to the peanut industry. But

what was worked out is that it's only an occasional peanut kernel that is contaminated. And can be contaminated at a level. But if we're eating peanuts out of a shell, we see something like that, we don't eat it. And so, it's just of no consequence, essentially. When we eat peanuts produced commercially or peanut butter, for example, the FDA actually had done a fairly good job in monitoring that. So, whatever exposure we get is very, very tiny, number one. Number two, we humans tend to be resistant to that carcinogen anyhow. So, that's the reason for my answer. It's not of consequence.

What is of consequence is the fact that experimentally, when we're exposed to the carcinogen or given a carcinogen, it caused 100% cancer response in the experimental animals. On the other hand, it was the protein that controlled whether or not that occurred. And that's a big deal, I have to say, because it sort of goes to the popular notion that cancer is a genetic disease. And it says that the carcinogen is attacking the DNA, the stuff of genes. That's where it starts. And we tend to say these carcinogens are what causes cancer. In reality, what we were learning, it's not the gene that may start the business. It's the amount of protein, in this case, or nutrition in general that controls whether or not cancer occurs. That's again, kind of a big idea that I'm still working on it these days.

And all of this sort of translates into... We looked at this question quite thoroughly, actually. It translates into consuming animal-based foods. That's where the animal protein comes from. Plant proteins don't do this. Only the protein in animal food. So, there you have it. And then, the question becomes even more significant when you think about what else is in animal foods? What is missing from plant foods when we eat them? So forth and so on. And so, it's become, for me, these years (many years later), a very big issue. And what I am saying is something I would never have said growing up this way. I would have never said, "Don't eat animal foods." Or I would have never believed that animal foods were a problem. But I am at that point.

Chris: So, it took you about 10 years to change your own diet? Or longer?

Dr. Campbell: Well, 10 years we started to change our diet a little bit. What that meant, to be specific, is... My wife was very good about this. She also was changing our food, of course. But what we started to do was to eat more salad. That meant chicken salad and tuna salad. Not terribly helpful, to be honest about it. But then, in the next three years, as the research became a little more convincing, let's say in the early 1980s, we dropped the meat. Well, then we started using chicken. Still also consuming plenty of dairy, too. Because that's where I came from. And it went on into the middle 80s, late 80s. By the time the late 80s rolled around, I said, "That's it." So, we basically changed almost completely. And certainly by the 1990s, it was 100%.

So, I want to emphasize this. This was entirely because of the scientific evidence. This was not an ideological concern. I mean, eventually I began to appreciate that argument obviously. And it's a very important argument. But my decision rested entirely on the research we were doing. Which incidentally, the research we were doing I published extensively in major journals. The research was funded by the National Institute of Health. And throughout my entire career, the money we got to do the research (and I had a big program) came entirely from cash spared funded research. 100% every last cent. So, I am not associated with any particular commercial interest in making a story.

Chris: It wasn't funded by the broccoli lobby?

Dr. Campbell: No, I think not. I'm wondering whether they even have a lobby. But in any case, no. None of that. I mean, I loved science. I mean you probably can tell. And I really have a lot of fun working in that area. I had a lot of students, a lot of graduate students as well. I had the biggest research program in our department at Cornell University, for example, which was at that time ranked as number one in the country. So, I was living in heaven, as far as this research is concerned. A lot of students... I've loved working with students. Doing a lot of research, publishing my stuff, giving lectures, so forth and so on. And then, getting involved in national policy development, especially in Washington. The whole package was a lot of excitement.

Chris: Were you able to identify any specific animal proteins that were more of an antagonist? Like for example, casein in dairy, or fish, red meat, eggs. Was there a spectrum, based on your research, that you felt some were more risky to consume than others?

Dr. Campbell: Well, as far as the animal proteins are concerned, it's a lot of work just to work with one. And that was the one that was available. We did look at a couple of plant proteins. And they did not do that. Even when the plant proteins were at the level of 20%.

Chris: And you were working with casein primarily, right?

Dr. Campbell: Yeah. Casein. Exactly.

Chris: Which plant proteins?

Dr. Campbell: Well, there are many other animal proteins, as you know. I had a rather famous friend scientist in Canada who was also using proteins of different kinds to study its relationship to heart disease. And he took a bunch of different animal proteins compared to a bunch of different plant proteins, and showed that all the animal proteins, in his case, increased blood cholesterol and increased the risk of heart disease. And you're all about the plant proteins. In other words, the animal proteins just acted more or less like a group. There were some differences, yes. But

basically, they're more or less acting like each other, compared to plant proteins. Plant proteins did not do that.

That's also consistent with another thought that was part of my own research, way back in graduate school. He had a concept called biological value. Biological value is basically the efficiency with which proteins are used for growth maybe. And it turns out, under those circumstances, all animal proteins tend to act like each other. All plant proteins tend to also like each other, and are different. So, we're seeing the same phenomenon across the board.

So, to answer your question, I did not use other animal proteins. I could not do that. That would cost way more time and money than I had available, to say nothing of finding isolated sources of that material. So, I could rely on that idea that I just told you about that for two things, blood cholesterol levels as well as biologic value. We see animal proteins being one group, turning on things. Plant protein was doing something different. And on that I am certain. And then we did plant protein / animal protein here too. So, I think we can just generally accept, not just on the basis of what I've just said, but additional considerations. Animal proteins are animal food, basically. Better said, it's a problem. Much more than I was prepared to say early in my career. And it's obviously a very provocative idea. I know that. And I have felt that pushback, in that case. But now this whole question concerning our health status and the cost of health care and all that sort of thing are important questions.

Chris: Were there any specific findings from the China study that stood out to you? What more did you learn, as a result of the China study?

Dr. Campbell: That's a good question, because I was thinking about some of this question prior to that. But in China, what we learned was that Western diseases, in general – heart disease, diabetes, cancer, and so forth – they tended to aggregate together in certain geographic areas, namely in and around cities. And in contrast, the so called diseases of poverty – like tuberculosis and infectious diseases – they tended to be more in rural areas where there's more poverty. So, we saw this big split between so called Western diseases and those.

That was not an original observation, by the way. I have to emphasize that. Many others have seen the same thing when comparing countries and so forth. So, that was one thing that kind of stood out. We've got these Western chronic degenerative diseases, as we'd like to say heart disease, cancer, and so on. They tend to occur in similar geographic regions, statistically speaking (by the way), establishing this distribution of diseases in different areas.

We then could ask the question: What is the chief causes of these western diseases? We measured lots of things. We had access to a lot of data – blood data, especially. And it turned out the most significant

factor related to western disease in China (which is much lower, by the way, than what we have here)... The factor that stood out most was the blood cholesterol levels. Even then, the blood cholesterol levels in China were very low, by our standards, in rural China where most of our study was.

Chris: How low? What was the range?

Dr. Campbell: Well, the range was from... These are means for different counties. So, it makes it even more impressive. The range of the county means went from 88 milligrams per deciliter to 170. Their high was near our low. Their average was 127.

Chris: Wow.

Dr. Campbell: 127. That's an average of means across different counties. Quite substantial data. And we analyzed those. At first when I saw that I thought, "This can't be true. We've done something wrong here." So, I went back to the laboratories I was working with at the time, of which there were quite a number. We went back and analyzed those samples again with different methods. Different laboratories. Got the same results. So, it was 127. In this country, there was evidence at that time that if you went below 140, 150, there was a higher rate of suicides. Literally something really crazy. Or maybe a higher rate of colon cancer. There was some evidence... That was nonsense of course.

So, I shared this information with my colleagues in heart disease, obviously. They were surprised to see this too. But then, all of a sudden, it started coming together. Then all of a sudden other people were starting to talk about the idea. "Hey, we can have cholesterol levels as low as 100 or 110 or 120." And when people eat this kind of diet, that's what they get, for the most part. Very low levels. That was another observation. You asked for a big observation. That was one for me.

And the other one was comparing the different counties, one with another. Some counties being so high in some cancers and so low in other cancers. I mean, I'm talking about several dozen fold differences. Or maybe even a few hundred fold differences, between highest and lowest. That was a big observation because that really showed that that cancer is so localized geographically. And whatever's causing the cancer is also distributed geographic rate. In this country, if we saw, let's say a two or three fold range from one part of the country to another, that's the most we're going to see. But in in popular and professional discussions this country, if we see a change in cancer rates from 10% or 20% or 30%, we make big news out of it. That's nothing. It's insignificant. That's nothing compared to what we were seeing in China. That was a big sort of awareness, at the same time. That we're talking about something here that's really big. You could argue, I guess, that cancer almost is non-

existent if the conditions are absolutely right. Or obviously, if the conditions are wrong, we're going to get a lot of cancer.

Chris: Were there any clues when you were looking at these different counties that had such a high discrepancy in cancer rates?

Dr. Campbell: Well the best clues we had, as I said, was their cholesterol. But that in turn related to what goes along with consuming diets high in cholesterol, namely animal foods because cholesterol only occurs animal foods. And by the same token, when we consume more animal foods, more cholesterol, we're consuming less plant foods. Because our total consumption is kind of like a zero sum game. We consume more of one, so we consume less of the other. That's a big deal too. Because when we see correlation between animal-based protein, for example, in various diseases (as we see across different countries), we can say, "Oh, that's due to animal protein." Let's say we can say that.

But in reality, what that's representing is not only the animal protein and the things that go along with it, like saturated fat and so forth. It's not only that, but it's also decreased the consumption of plant foods. That makes this whole story really pronounced because then we don't... And in some ways, people like this, especially in policy, we don't need to go after or we don't need to be so assertive about not consuming animal foods. Maybe the better approach is to say, "Eat plant food." Stop there. Make sure it's whole food plant based. And people will get the message. But either way, it's the same message.

Chris: That really is my message: encouraging people to eat tons of fruits and vegetables. Eat lots of fruits and vegetables. Whole foods. And the more fruits and vegetables you eat, the less room in your diet there is for junk food, animal food, processed food, all of those things.

Dr. Campbell: It's a good message.

Chris: Were you friends with Denis Burkitt?

Dr. Campbell: Yes, I was.

Chris: Would you talk about him?

Dr. Campbell: Yes. I had dinner with him, I think it was about three times. And we really kind of hit it off. He was in his later years, at that time. But then, he was given an award for lifetime achievement by the Franklin Institute in Philadelphia. It's rather well known and almost next to the Nobel prize. But in any case, he was given that award. And he asked me at the conference that was held, to come down and give the keynote for his presentation. It was an honor for me. And I have been a fan of Denis Burkitt, obviously, for a long time. He's a wonderful man. He did his work in Africa, as you might know. And he was focused on fiber. He was

discovering, for example, that the higher the fiber consumption, the lower the rate of colon cancer. To be one. And so, he was a forerunner for this kind of thing.

Chris: I am a fan of Dr. Burkitt for sure, as a colon cancer survivor. And as much research as I've done on that disease, especially. In some ways, it was exciting to discover his research, but also frustrating. And I think the two of you obviously have a lot in common here. But when you're publishing research that has such significant implications toward health and disease and prevention, and yet the medical industry pays no attention to it. Federal guidelines aren't changed. In fact, you were talking about cholesterol. Well, now, you're considered normal or healthy if your cholesterol is 200.

Dr. Campbell: Yeah, I mean the general comment is similar to what you just said before. "Let's get our cholesterol down as low as we can." Now the baseline cholesterol level for different people is somewhat different, as I'm sure you're not surprised. But there's a few individuals who can't quite get it down to maybe 180, 190. I even know a couple of people who say they can't get it below 200, who are eating the right thing (so they say). I'm actually one of those people. So, I tend to pay attention. My bottom professional level is more or less between 160 and 180. I can't get it down into what the Chinese do.

And I mention that as significant because we are different. Therefore, the question arises: Why do we have some differences? My mother had cholesterol levels of 330, 340, if you can believe that. So, I'm down to 170, 180 and something like that. And I'm quite happy with it, to be honest. I can't get it much lower. But I actually ran across an idea there too, and did some research on. It was published in "Science." They published it and it got quite a lot of research. Namely, it's this. I won't get into all the details, but it turns out, whether or not we're nursed as infants makes the difference.

Chris: Really.

Dr. Campbell: Yes. For people who are, for whatever reason, not nursed, they seem to have a higher baseline cholesterol level. This is not always true, but there certainly is that evidence there. I was not nursed, by the way. And what all that relates to is the fact that when infants are born, the best thing they can do is to be breastfed. They've got to be exposed to human milk. Human milk has cholesterol in it. That's a good thing. Not a bad thing. So, what turns out, at that very young age, when babies are being exposed to this cholesterol level – typical human milk, for example – they tend to actually establish systems that accommodate. Then they can handle cholesterol. People who are not nursed don't get exposure to cholesterol at that time. Therefore, their bodies are not prepared to handle it when it's being over-consumed later in life.

Chris: So, there's some kind of programming that's happening very early in life with the cholesterol in mother's milk. Hypothetically speaking.

Dr. Campbell: I have a name for that. It's called imprinting.

Chris: Got It.

Dr. Campbell: That's really what it was, is an early imprint. And we did some research on that. In this case, in experimental animals. But it was derived from some results that I knew of in baby boys and watching them develop cholesterol over time. And I think it still is a very good idea. Others have kind of done that.

Chris: That's fascinating. I've never heard that. That's not in your books, I don't think.

Dr. Campbell: No, I didn't put it in the book. You just asked the question. I mean, so we have little differences, coming back to the 200 level. I mean, for some people it might be close to the norm. But the vast majority of people really have been nursed, I think. And they get their cholesterol level down to let's say 150, 140, 130. Some get it down as low as 100.

Chris: Mine's fluctuated between about 117 and 150. It's just different, for whatever reason. I'm pretty happy with where it is.

Dr. Campbell: Sure. There's further details on that too. You know about, I'm sure. There's total cholesterol. And then there's HDL cholesterol, the good cholesterol, and LDL, the bad. And then, the ratio between the two. That's a finer tuning of the whole question.

Chris: In the book "Whole" you talk about the difference between taking a vitamin C supplement and eating an apple. Would you expound on that?

Dr. Campbell: Yeah. Okay. Let me just say the facts first. In that example you just cited that I had in the book, this a friend of mine, a colleague who did this. I'm talking about his research, not mine, in this case. But in any case, when you have 100 grams of, let's say, apple... They can sample 100 grams of apple and determine how much vitamin C is in it. You get a number: 5.9 milligrams essentially. And that has a certain amount of biological activity. You test that 100 grams of apple and it gives you a certain biological activity.

Chris: So, you could extract that much vitamin C from that much apple?

Dr. Campbell: No, not quite. You're getting ahead of it here. But I'm talking about if you just test a whole 100 grams of apple in your test system, you're going to get the equivalent of 5.9 milligrams of vitamin C.

Chris: Okay.

Dr. Campbell: I said equivalent. Here's the important part. If you then take 5.9 milligrams, for example, and just put it in a test tube or whatever and then test it. It turns out the vitamin C and the apple is about 1,500 times more active than it is standing alone. Big deal! Now some of that difference, maybe a lot of that difference, is really related to the fact that in the apple there's more than just vitamin C. There's other compounds that act like vitamin C. So, some of that differs. But still. The difference between the vitamin C in the apple, the same amount in the apple, as opposed to putting it in a pill is huge. I mean, huge difference.

That in turn corresponds to a lot of other research with other vitamins to show that the vitamins we take in pill form are not acting in the same way as they do in the food. So, there's a big, big difference between the biological activity of food containing nutrients, compared to nutrients being put in pills. And that part of the story I was quite involved in myself, at policy level in Washington. Basically, the vitamin industry has relied on false claims, for the most part. Exaggerated claims at a minimum. And that's been going on for a long time. When they make that kind of pitch, that kind of claim, they're leading people to believe, "Oh, you don't need to eat all those fruits and vegetable. You probably don't like it anyhow. Just take these pills." That's the sort of the outcome of that story. That's false. Bad information.

Chris: Yeah. That's been the pitch from the vitamin supplement industry probably since day one: "Well, we know you're probably not eating the healthiest diet. But if you take our vitamins, it'll make up for it." I've heard that pitch more times than I can count. And yeah, it just doesn't fly. There's something to be said about supplementing with some of the things that you wouldn't get in your diet, that aren't prevalent in the diet, maybe herbs and things you wouldn't normally eat.

Chris: You make the case against reductionism. Would you talk about that?

Dr. Campbell: Well, this example we just talked about. Let's say we look at the good effects of carrots or spinach or something like that, in terms of health initiatives associated with good health outcomes. And all of a sudden we decided, "Oh, that's because it's got vitamin C in it." Or maybe because it has beta-Carotene – which is a pro vitamin A, as you know. And so, we then get this impression of, "Oh, that's really what counts." And therefore we use it. We put it in a pill or maybe we turn it into something to be used like a drug perhaps. Whatever. Focusing on one thing out of that whole food doesn't work, number one, quite like it should. Focusing on one thing is called reductionism. It's looking at the parts, as opposed to the whole. The whole being the whole food, the nutrients being the parts.

And so, it turns out that when we put it all together and analyze data that way and study it that way and understand what's going on, the whole – that's the whole food – has an amazing effect in creating health, reversing disease, preventing disease, compared to single things. And I

can expand on that a little bit more. We tend to think in our lives and medical research, as well as in the medical practice community... We tend to think of the relationship between a cause and effect. We tend to think of it in a very focused way. Here's the cause: single nutrient, single this, single that. And then it goes into the body and it operates by a single mechanism – that's the generalist thought, we assume that – to produce a specific response. So, single nutrient, single mechanism, specific outcome. Everything is very lined up, very specifically, one thing at a time.

That's not the way nature works. However, this is the basis for the entire drug industry, if you stop and think about it. Because the drug industry is founded on that idea. That if we can just find some chemical, whether it's plants or whatever, we can make it into a drug. And we'll solve a problem. We'll solve this disease. And maybe it won't work over there. Whatever. And so, my consideration of that question and the work I'm now doing... I'm publishing a new book too. I'm elaborating on this point a lot more. I'm talking about the consequences of that kind of thinking over time. How did that arise? Why do we think that way? It's quite natural. We like to think of magic bullets. We'd like to think that we have definite answers for something. So, it's kind of an understood way of thinking and doing research, if you will. But when it becomes the dominant and almost the only way of looking at research, I have a problem. I have a serious problem. And so, the drug industry, for example, and one figure I have is that 85% of all the drugs that are tried are off the market within a matter of a couple of years. Because they cause too many side effects or because they don't work. It's a sloppy business. It's a very sloppy business.

Chris: Wow. And is that 85% of drugs that actually are brought to market are gone within a few years?

Dr. Campbell: The evidence that I'm very referring to, yeah. I can't remember exactly the reference for it, but that's basically what it is. And of the drugs that remain and we use, let's pick one... The biggest one of all: statins. There's four or five versions of it, as you know. Statins are used to "lower the risk for heart disease." It looks like it. It sort of made sense when they first got together and did it. Because statins is a chemical that is used to block an enzyme involved in the synthesis of cholesterol in our bodies. And it absolutely, at a point in time (during the 1970s, 80s or so), it was generally thought that high cholesterol in our blood caused heart disease. So, the natural thing to do was, "Okay, let's block this cholesterol. We make too much cholesterol." So, they came up with this chemical to block it. They could identify the very specific enzyme that was involved. And they worked it out quite carefully. And with very sophisticated technology they worked out that here's a chemical that blocks that reaction.

It became known as the statins. There's many different versions of it. And it has been used ever since. Sure enough statins do reduce your cholesterol in general, for most people. However, it has side effects. Statins have side effects – muscular discomfort and that sort of thing. And in reality, when you look at the outcome, how does that relate to reduction to heart disease risk? It's very poor. And some in the field argue that it's nothing. At best, it might help a tiny little bit. Maybe. Best I've ever heard is decreasing heart disease by 9%. That's the highest estimate that I've seen.

But we put up with those side effects. Now that's become maybe an \$80 billion industry. And suddenly people are using it because of all the advertising and all the rest of it, that statins will reduce your risk for heart disease. Meanwhile, the drug industry producing statins are not about to tell people, "Oh hey, just change your diet and you'll get a lot better result. A much more spectacular result without the side effects. And live longer. And not spend the money." So, the easy way to do this whole thing is not necessarily what's advertised. It's not told. Which is a matter of some gray significant interest, on the part of public health authorities and policies that are made and so forth.

Chris: Well, I have to plug Dr. Caldwell Esselstyn, at this point. I interviewed him a year or two ago. And of course, he's a colleague of yours. I know you're very close. And he's published some wonderful research on reversing heart disease with the plant-based diet.

Dr. Campbell: That's right.

Chris: Specifically a very low fat, whole food, plant-based diet. And every time I share that interview or refer people to him, everybody wants to argue. Everyone wants to argue. But I'm like, "Look, he did it with people. He saved their lives. He prevented future heart attacks and strokes, and opened up their arteries with nutrition."

Dr. Campbell: That's right. He really did. He is a good friend. And we visit a lot and speaking on the same platform oftentimes. Then we were together in that film called "Forks Over Knives," as you probably know. And he did his most recent study, you may know about that, he sort of advised, I think, 198 patients over a period of 7 years. Do you know that study? I mean, we went back to between 2-5 years later, about 3.5 years later, and he got these results that were just, my God, just spectacular.

Chris: Yeah. The recurrence rate was like 1% or something crazy.

Dr. Campbell: Well, there was one person who was actually a friend of mine, a contact of mine. I sent him to Dr. Esselstyn. He had a heart problem. And he, unfortunately, passed away. That was the one event. But then, I did learn later from someone in his family who said he wasn't quite sticking on the diet like he should. Because she came to me and asked me about

it. So, you know, even there, I mean, my Gosh, how can you get better results than that?

Chris: Yeah. Out of almost 200 people, only 1 person has another cardiac event.

Dr. Campbell: And the ones who did not listen to him, they went back, of course they had problems.

Chris: Yeah. I forget the number. It's in our interview. But yeah, the people who didn't follow his advice had a very high rate of further cardiac events. Yeah. It's stuff like that, I know it doesn't sell, there's no money in it. It seems like there certainly is progress being made toward physicians who are prescribing nutrition, whole food, plant-based diets to their patients. I mean, it seems like that is a growing movement, at least in the last two or three decades, since you really started talking about this, I imagine. Are you hopeful that we're headed in the right direction? That things are getting better?

Dr. Campbell: Well, yeah, I would answer the last question first. Yes, it is hopeful. There's no question about that, in my mind. I've spoken to at least 200 medical schools and medical conferences. Probably 900 altogether. But a lot of physicians only like presentations. And at first, when I was doing that, I usually was greeted with silence. And I thought I had messed up. I mean, no questions much and that sort of thing. But now, over time, in the last four or five years, all of a sudden I've discovered there was an increase in the number of physicians really keenly interested. And in fact, they're really quite annoyed. That was one reaction I got. They were like, "What happened? Why haven't they told us this before?" Good question. And it raises another point. And that is that there's not a single medical school in the country that actually teaches nutrition. Not one.

And at the same time, let's say physicians come out and they don't know anything about this nutrition thing. Let's say some of them choose to learn about it. And they start doing maybe doing something with it. At that particular point in time, physicians don't have a medical category called nutrition or specialty. There's like 130 medical specialties, which tend to trigger compensation/reimbursement. Not one is called nutrition. Not one. So, doctors aren't able to get the compensation they deserve for even offering this information. It's a horrendous, major fact.

Chris: Yeah. That is horrendous. I didn't even realize that nutrition wasn't listed as a medical specialty. I mean, I knew they don't really teach it in med school. And I know that insurers don't really cover it in that. And so, it's difficult for a medical doctor to make a good living when their focus is nutrition, versus prescription drugs and surgical procedures and things.

Dr. Campbell: It's a very big societal problem now because it translates into... Our physicians are the ones who should first notice information first and foremost. All of a sudden, you're pulling away from them their chief

source of income. That's difficult. I mean, I don't have any quick answer to that. And I don't think anyone really does. But on the other hand, I have a lot of hope for society, in general, to do the right thing. And what is happening now, I'm going to speak from my acting in a policy arena.

It has been my experience that, first off, government policy in the form of dietary guidelines and that sort of thing, it comes from the government. Therefore, we tend to regard it as pretty significant. But that kind of information is tailored in such a way that it does not offend the industry. I've sat at those tables. I've seen that. I say what I'm saying. I mean what I say and I'm saying what I mean. That the policies that are devised by the government come up with ribbons around this information, if you will. Revised every five years with patient/doctor guidelines. That information is heavily influenced by industry. So, the public is not getting information they deserve to have. It's that simple.

Chris: By industry, you're referring to the meat and dairy industries and things?

Dr. Campbell: Well, that and pharmaceutical industry as well. I mean, if I want to be really shorthanded and really critical about the whole thing, our taxes are being used to support the growing of food that makes us sick. And then, in turn, as customers or as patients, they buy the so-called cure for that sickness. So, we're feeding the industry the money for them to produce the wrong food. And in turn, they're spending more money (that's through our taxes) to buy the drugs and so forth to make us well.

Chris: And most of those drugs don't make us well. That's the problem. But they do make a lot of money for the pharmaceutical industry.

Dr. Campbell: Well, that's why I call the healthcare system the disease care system. That's what we're making money on. We've got to have a lot of disease to make this work. I'm not the person that said that, by the way. "Disease Care System." I have a lot of colleagues that have said that. So, it's a very difficult proposition to realize that. And the new book I'm writing is exactly on that topic. How did all this start? What were the consequences of it? And how about we look around to change things. My best advice for this whole thing is simply inform people. Inform the public. They've got to get to know this.

And I forgot to tell you one of the significant things in the last thing I said. So, the government comes out with these policies. Then they actually proactively organize efforts to dispute things like I talk about. So, the government is actively basically deflating this kind of information in various forms. That in turn leads to, "Well, who's the government?" The government is what my friend once said, "We have the best government that money can buy." We have the Citizens United decision in Supreme Court in 2010, where now any amount of money can be spent to elect certain individuals.

And so, it's really true. We tend to elect people with our money. That's really what it is. Those people who have that money don't want to destroy the system from which they got their money. So, the politicians go into Washington. And there's a lot of good politicians. I know that. And they don't necessarily want to admit this thing. But in reality, they're sitting there, they know where the money came from that got them elected. They're not going to come out and show support, guidelines, and stuff like this that goes against their supporters.

Chris: You're right on the money there. I mean Big Money gets politicians elected. And even if they have good intentions, they want to keep the money coming in to the campaign coffers for the next election cycle. So, they don't want to piss off the beef industry or the various drug companies that supported their campaign or the big food companies, Kraft or whoever. Yeah. It's a mess. It's a mess.

Dr. Campbell: And so, the only solution in my view – there may be some others – but it's actually just getting public knowledge. Taking control of the whole business of public knowledge. Educating. Doing things like what you're doing right now. Publicizing. Just so more people get to know this, because that's the one thing. Obviously it'll decrease the businesses, to some extent. People will begin to accommodate with all of that.

One more thing, you might have intended to bring this up... But I think the biggest problem we now have in our society in this larger context, is how the wrong food that we eat effects the environment. The environment issue is a big, big deal.

Chris: Talk about it.

Dr. Campbell: I just came back from a small conference. My oldest son is involved in doing some things, wellness things right now, with a nonprofit. Quite exciting. But in any case, it turns out that we now have really good evidence that the climate change we're now seeing, the prices we're paying, is manmade. I know there are the deniers and that sort of thing. But I think it's really convincing that the environmental issues we now face that are right in front of us are manmade. And in that sense, the one factor more than any other to cause global warming is our choice to eat livestock. Livestock or meat consumption is the number one cause of climate change in all of its various forms.

Chris: Aside from carbon emissions, which is the big one, right?

Dr. Campbell: Well, even carbon emissions that result from the transportation and other mechanizations that we have to use to raise the livestock. I mean, you have some of that too. You're referring, of course, to methane and nitrous oxide. That [inaudible] actually produce. And it is kind of complicated because we're now seeing methane come from fracking and

things like that too. So, I don't know exactly what the proportion is. And I'm sure it varies from time to time.

But when you add it all up, there's no question about it. The food we consume is the major problem that leads to climate change and other environmental degradation problems. And we've all got to face that because whatever we may be talking about, personal health or that sort of thing, if we don't it doesn't mean anything. We're going to lose our lives. We're going to lose the climate over this. And it is happening very fast. It's one more huge reason why getting information out there about the right food to eat. It's really a huge issue.

Early on, I was asked to come to the World Bank by the senior adviser to the president of World Bank, about 20 years ago now or so, to come and talk about what I was learning in the area of food. And that gentleman, a guy from South Africa who was the senior guy, he was quite interested in the environment at that time. Because the role of the environmental people at the World Bank was to advise the bank on the loans they'd make to countries to do this and that. And they were doing the environmental assessment kind of thing. And he had concluded, or had the impression at that time, that livestock farming was an issue. So, he had me come and speak. And I did. Got some other people to come and speak too. And it all started working out pretty well, at first. They actually blocked a loan with our input on one occasion. But then, somebody came from behind the scenes and got that loan activated anyhow. So, it's a big issue.

I've been involved in the story for some time. And I gave a lecture at the Food and Agricultural Organization in Rome, that's the UN FAO offices. That was broadcasted and streamed to about 100 and some UN offices around the world. And it was supposed to stay up there. But then, one day later they pulled it off because the communications office back in New York had said, "We don't need to have this kind of information out there." That's was disappointing.

But since that time, there are others now really taking up the charge. There's films like "Cowspiracy," as you probably know, and others. And they have really started to speak out. And as I said, I came from a conference where the people in the environmental movement are gradually coming to terms. It's not just about all the things they think about, it's about the food we eat. So, we're working on that question at the moment. We have a non-profit ourselves that works with Cornell. We're partnering with them in this. We have a new course now coming out, a certificate course on food and the environment. I'm going to use the best in the country. We've got a lot of people speaking in this series of lectures. It's a series of 18 lectures, 2 or 3 courses and people will get a certificate for it and so forth. They get professional credit for taking it. And so, we really are interested in pushing that initiative.

Chris: And you've created multiple courses that people can take online through Cornell on nutrition, correct?

Dr. Campbell: Yeah. Well we have a one certificate program, three courses, at the moment, different titles. That that was based on a class that I taught on campus, back in the 1990s. It was quite popular with the students and eventually got put online. So, we're going to be doing some others. I've got a really good crew, lecturers and other people doing this. The new course content was actually created by my grandson. Young people are very excited about this. And he is a graduate of the University of North Carolina. And he got a really good education. He's really smart as a tack. And he's got a lot of information together. And he and some others are going to be bringing that online sometime very soon.

Chris: Well, Dr. Campbell, this was really fun. I'd like to ask you just a couple more questions. These are quick answer questions. One is, how old are you?

Dr. Campbell: 85. You should say, "How young am I?"

Chris: Alright. I will amend that.

Dr. Campbell: I'm 85. I don't take any drugs.

Chris: Right. That's excellent.

Dr. Campbell: And so, my wife is 78. She doesn't either. She had melanoma earlier years, Stage III advanced melanoma. This was way back when the China study first came out. And that's quite a story in itself that you may have read about in "Whole." And she refused to do the chemo. She refused to do the operation on that part of her leg, where that was. It was in her lymph glands. They wanted to take out her lymph glands. She didn't do any of that. And here it is now, 15 years later. No problems.

Chris: I love it. And I hear stories like this all the time. I shared them all the time too. People who have healed with nutrition. The body can heal.

Dr. Campbell: You've said something that is really, really important. Through the decades we've talked about, "Okay these are vegetables." Do this and that. It can prevent some disease in the future." We've sort of heard that for a long time. But not a lot of people were convinced that was a good enough reason because they figured if they got older, they'd find some way to get cured. I did. I thought that myself when I was a kid. But now, the information we have has been done in many different ways. We can actually use this information to reverse, that is treat disease. So, it's time we start talking about using the word treatment, not just prevention. Because now we're talking about the heart of the medical system. We're using food to treat. Very second proposition.

Chris: It is. I mean, that's my whole mission. Really educating people. I mean, we're on the same mission, obviously. But trying to go direct to the consumer with information that they can use to help themselves, because we can't really trust the government to do it because they're owned. And the truth, unfortunately, is not profitable. So it's not going to pass the official filters of government policy. So, it's grassroots ground up. I just want to reach cancer patients and anybody who's serious about health and healing and prevention, and just encourage them, inspire them directly, and let them take that and make decisions that can help themselves.

Dr. Campbell: That's right.

Chris: Okay. So, last question is, how long have you been eating a whole food plant-based diet?

Dr. Campbell: Let's say 1990. That's a good date.

Chris: Yeah. So, approaching 30 years.

Dr. Campbell: Yup.

Chris: Yeah, that's fantastic. And that's just a testament to anyone who thinks, "Oh, I have to have meat. I have to have animal protein. I'm not going to feel good." Whatever. I mean, you started when you were roughly 55?

Dr. Campbell: Yes. I started when I was around 45, but then it took 10 years to get to the final stage.

Chris: To really commit.

Dr. Campbell: Right, right. I might add, when you're talking to people about this, we have now a family of 22. And my wife has really been the one who has engineered our eating all these years. We have 5 grown children, and 11 grandchildren, and spouses. 22 of us. We all do this. Is that convincing enough for some people? We don't really have any backsliders. We had a grandson backslide a little bit earlier. But we're all eating this way.

Chris: That's awesome. Okay, last question is, what's your ideal diet? So, what do you like to eat for breakfast, lunch, and dinner? And I know it varies every day, but let's just say, you were only able to eat the same thing every day – breakfast, lunch, and dinner. They can be different meals, but what would they be?

Dr. Campbell: Well, first off, I'd eat what my wife fixed for me.

Chris: Yeah. And what would that be?

Dr. Campbell: She's the one who makes these decisions pretty much. For breakfast, I almost always have fruit and cereal – cooked cereal, cold cereal, whatever.

Chris: Like oatmeal?

Dr. Campbell: Yeah. Especially a lot of oatmeal. And our lunch is salads, maybe some hot foods to go along with it. But always vegetables, fruits, grains, legumes, obviously beans, and so forth. And then, in the evening, more of the same. But maybe a little more extensive. The cookbooks didn't use to be out there. But our daughter has a cookbook called "The China Study Cookbook." It's now got 175 references. That's done really well. Our daughter-in-law also has an outstanding book called, "The PlantPure Nation Cookbook." That's by Kim Campbell.

And her husband is our oldest son who's in that climate thing, as well. And he's now working on a thing. He's the one that organized that now we have that 500 water [inaudible] around the country and outside of the country. They're called pods. He's got something now, special effort actually focused in New York City. I can't tell too many details about it, but it's an opportunity to really expand this message through public network. And of course, I think you might be interested in how that works.

And the son who did the book with me, Tom, he's now a physician. He's a medical director of a program at the University of Rochester Medical Center. And we're actually taking the funding... I want to tell this too, cause it justified... I don't take any money from our own non-profit, by the way. I get no salary. But we've made some pretty good money in that. And we use it in part to support research that he's doing at the University of Rochester. And he's doing the kind of research that I never got to. Testing the effect of whole food, plant-based nutrition, if you will on, on people with disease that needs treatment.

And the first study is women with advanced breast cancer. It's already organized. We're excited to see what's going to happen. It's kind of a [inaudible] study in a sense, the way it's designed. But nonetheless, we'll see something. And now he's got another study, having to do with chronic kidney disease. Most of the research, and that's my business... I mean, research that we've done over the years in my community tended to be focused on one thing at a time. They haven't seen fit to really do a kind of interventional trial that will test this amazing, whole food plant-based diet.

Chris: I'm really excited about that. That's something that... As you know, Dr. Dean Ornish did it with prostate cancer early stage and he did it with heart disease, but there really hasn't been, and there needs to be, many interventional studies with nutrition and cancer. And so, that's great. I'm glad to hear that that's happening because people are always telling me

like, "You should do a study." And I'm like, "Do you know how much money that could cost to do a proper study? I need a benevolent billionaire to come along and underwrite it."

Dr. Campbell: That's right. Yeah. Well, that's one of the things we were talking about before. Reductionism and wholism. The entire medical system has been framed within a reductionist framework. And so, doing something like that, that's outside of that framework. And so, "That's not science," is something my colleagues would say. I know this very well because I was on committees in Washington determining who gets money and who doesn't, for NIH and other organizations. And so, when we see somebody come in with an application like that, in years past, we had a couple of words for it. It was called a shotgun experiment or a fishing expedition. Those are the two ones. "That's not a science." That doesn't count." Because you see, it's not within the reductionist framework.

Chris: We're not studying one molecule.

Dr. Campbell: That's right. And so, that's another area that's a big idea that is worth considering. I'll put all that in the book I'm writing now.

Chris: Does the new book have a title?

Dr. Campbell: I only have two suggested titles. I'll just tell you the suggested titles because it sort of explains. Now one of them is "Behind the Curtain" because I was behind the curtain for many, many years working in policy. And the other's called "Nutrition Injustice For All."

Chris: I like them both.

Dr. Campbell: So, I'm not sure yet.

Chris: Well, thank you Dr. Campbell. This has been such a pleasure. An absolute honor and a thrill to talk with you. You've made a monumental impact in the health and wellness world, and in my life. And I know many of my audience, listeners, fans know your work and will be excited to watch this. And then, some of them also maybe don't know you yet. So, I'm excited for them to get to know you. So, thanks again for your time. Where can people find you?

Dr. Campbell: I'm going to ask that they go through our center. That's Center for Nutrition Studies, where we have the online program. People can take that course. And that is nutritionstudies.org.

Chris: Got It. Okay, well, I'll put the links in the show notes below this video. Please share this. People you know and love need to know that nutrition is powerful. It can prevent and reverse disease. And this is not quackery. It's not theory. It's backed by science. And things are changing. So, thanks Dr. Campbell. Bye everybody.

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