

## MWSP 06 - Valter Longo, PhD

**Announcer:** From Curtco Media.

**Bill Curtis:** Welcome to Medicine. We're still Practicing. I'm Bill Curtis. And today, we have quite a show. First of all, I'm really excited to introduce Janice O'Leary, the executive editor at Robb Report. As a matter of fact, she built the Robb Report Health and Wellness Division. Janice, nice to have you here.

**Janice O'Leary:** Thanks for having me.

**Bill Curtis:** Of course, my co-host of Medicine, We're still Practicing, the triple board-certified doctor of internal medicine, pulmonary disease and critical care. My very good friend, Dr. Steven Taback. How you doing, Steve?

**Dr. Steven Taback:** Doing OK. Nice to see you. Nice to be here.

**Bill Curtis:** And now our special guest, Dr. Valter Longo, originally planned to be a rock musician, but luckily for us, he became an international rock star doctor in the field of longevity and nutrition. Valter is a professor and director of gerontology and biological sciences at the Longevity Institute at the University of Southern California. And he's also the director of longevity and cancer programs at the Institute of Molecular Oncology in Milan, Italy. A little over a year ago, Time magazine named Dr. Longo one of the 50 most influential people in health care for his work on 42 international clinical studies and groundbreaking research on the fasting mimicking diets, a way to rid your body of, well, mutated cells while rejuvenating our healthy ones. He's the creator of the five day fasting, mimicking diet and the author of the international bestselling book, The Longevity Diet.

**Dr. Valter Longo:** I was 19, I think when I started working on aging, and at the time I was a music student in Texas University in North Texas, a famous jazz school. Obviously it was in my head all along because I didn't think about what I had to do. I say I had to study aging and I always thought, what an incredible challenge. But scientifically? But I also thought, why isn't every doctor working on aging? It seems to

me like that's where the problem is. So, yes, I. I have to say, beside the years, the very early years, I have always worked on this. That's all I've ever done.

**Dr. Steven Taback:** But because I had read about you that you initially wanted to be a rock star, I started the same way. My initial thought was to be a rock star. And then I realized that I was lacking one key ingredient and that was talent. So I quickly switched to something that I thought I could do better. And are you still involved in music?

**Dr. Valter Longo:** I'm a little bit more now, I think in the, you know, fundraising level. So we're thinking of doing some concerts or something like that to raise money for research. Yeah. So I have always worked on aging. And since the early '90s, I was lucky enough to be a student of Roy Walford at UCLA, he was a pathologist there, and he was my first mentor. And he was at the time the world most well-known person working on calorie restriction and the longevity. And so I followed up on his work and so for the best 27 years, we've been focusing on how to take this old idea of calorie restriction and make it make it a newer idea that can be brought to the clinics all over the world.

**Janice O'Leary:** So, Dr. Longo, you've been looking into various diseases that are related to aging, that are, I guess, are anti longevity, diseases such as cancer and autoimmunity and cardiovascular disease, obesity and how these diseases might be affected and possibly even treated with a modification of diet and with intermittent fasting.

**Dr. Valter Longo:** Yes. So what we really focus in on is what I call the longevity program. And so a mouse has a longevity program that is about two and a half years long, in the first.

**Janice O'Leary:** By that you mean it's lifespan,.

**Dr. Valter Longo:** Well the lifespan is two, two and a half years. But say the health span is maybe one and a half years. It might start developing cancer, maybe after one and a half years out of the two and a half years lifespan. So then the idea is, why is it that people don't get cancer in most cases until they're 40 or 50 or older? So there is clearly the possibility of getting cancer is under the control of this program.

**Janice O'Leary:** So what we're really talking about here are cells that have kind of an aging problem.

**Dr. Valter Longo:** Yeah, that's what we're going after. We're going to after the fundamental changes in cells and in the collection of cells that eventually will lead to dysfunction.

**Dr. Steven Taback:** What is the diet that you are proposing that has been shown to have these immune modulating effects and the longevity?

**Janice O'Leary:** Well, you know, let me just interrupt for a second here. You know, I think we're talking about two different kinds of diets. There's one there's the intermittent diet that you would do three times a year, optimally. But then there's your daily diet. So can you come in on each of those?

**Dr. Valter Longo:** We did the epidemiological study using the CDC database a few years ago where we showed that Americans that ate the highest level proteins, they had about a 75 percent increased risk of the overall mortality and about three to fourfold increase risk for developing cancer compared to those that had the lowest protein intake. So this is about, you know, how do you eat every day? And now this was true only up to age 65. So if you will, when the CDC asked the question, do 80 year olds there was no longer true, in fact, that people were 80 year old, were reporting having a low protein intake. They did not do very well. So that, you know, this is really important that to understand that this is not, we like to have simple answers like low protein, high protein. This is good. This is bad. It doesn't work like that. It's a complex environment. You just have to learn how to navigate it. And it's not you know, once you learn and you have the right physician or dietician helping you? I think it's fairly straightforward to follow.

**Dr. Steven Taback:** But isn't there a lot of data that says that a high fat diet has an increased risk of colon cancer and breast cancer?

**Dr. Valter Longo:** High animal fats and high protein seems to be both associated with increased mortality, increased risk for cancer, increased risk for cardiovascular disease.

The ideal everyday diet seems to be a fish plus vegan diet that is high nourishment and low protein. Then the fasting mimicking diet, the fasting mimicking diet is really something very different. And it's not even intermittent in nature.

**Dr. Steven Taback:** Can you describe the intricacies of the fasting mimicking diet? What does it entail?

**Dr. Valter Longo:** Yes. So the fasting mimicking diet is a low sugar, high fat, good fats, low protein, calorie restrictive diet and.

**Dr. Steven Taback:** Good fats. By that you mean omega 3 versus omega 6. Or what are you referring to when you say good fats

**Dr. Valter Longo:** No, no. Good fats. I refer to the type of fats that are associated with longevity and health span extension. So the nuts, the olive oil,.

**Janice O'Leary:** The plant based,

**Dr. Valter Longo:** Plant based but of a certain kind that that is, for example, avocado has thus far not been associated with longevity extension, but the nuts have. And so has olive oil. So those. Yeah. That's what we're focusing on. The ones that provide the fats, the certain type of fats, but also that are being consistently associated with higher health status and longevity.

**Janice O'Leary:** And what about carbs? Is the diet high or low in carbs?

**Dr. Valter Longo:** It's a relatively high in carbs. They're very low sugar, but relatively high in carbs, mostly coming from vegetables, no fruit. And the idea is to, we could get more of an effect. We believe that we are gaining right now by having a lower carb diet. So make it more ketogenic, but we don't want to do that. And the reason for that is that we do not want to take a chance on what will happen if we alternate this low carb, high carb, low carb, high carb for, say, hundreds of times in somebody's life. We would rather have a little bit smaller effect, but not risking the potential problems that may come up from this alternation of low carbo to high carbo

**Bill Curtis:** What type of problems for people who get on and off a low carb diet.

**Dr. Valter Longo:** Yeah. The low carb diet, I think a lot of wishful thinking. If you look at the data, I never met a centenarian that was on a low carb diet and I met lots of centenarians. In the long run people on a low carb diet lived shorter. For example, Lancet, the new math analysis that came out, showed that you're better off being on an 80 percent carbohydrate diet than on a low carb diet for lifespan and those that lived the most were on about 60 percent, the carbohydrate diet. So it this .

**Bill Curtis:** The carbohydrate diet, unfortunately, you're not talking about bagels and rye bread. Are you?

**Dr. Valter Longo:** Yes, we are.

**Bill Curtis:** You are?

**Dr. Valter Longo:** Yeah, of course. Yeah. So so.

**Janice O'Leary:** But not donuts because there's sugar in there,.

**Dr. Valter Longo:** We're talking about, you know, in general. Now, of course, then if you have lots of starches that you just described, that's not so good. You know, and the ideal if you look at the Okinawans or the southern Italians that reach record longevity, they do not have a ton of starches in a bread and pasta. They had, you know, a good amount of it. But they will eat big dishes that were made of legumes and lots of vegetables. They were poor and lots of these things were grown in the backyard.

**Janice O'Leary:** Right, we forget that vegetables are a carb. Right. Vegetables are carbohydrates.

**Dr. Valter Longo:** Yes, vegetables are carbs and that's the best source of carbs. Right. So, for example, the Okinawans, 70 percent of their calories historically, the ones that now are 100, 110. They used to eat 70 percent of the calories came from sweet potatoes, purple sweet potatoes. That was a diet. People think, oh, lots of rice,.

**Bill Curtis:** 70 percent of their diet.

**Dr. Valter Longo:** Yeah. They were poor. That's what they were used to, they used to be able to grow on the island. And that's what they eat all the time. And if you look at the southern Italians, for example, in my parents town has got record longevity. They had these green beans. We call it Pasta e Vaianeia, you have a little bit of pasta and tons of these green beans and the vegetables that they could sort of grab and put together.

**Dr. Steven Taback:** What about rice? Is there a difference between processed rice, whole-grain Rice, or is rice not really considered one of the good carbs?

**Dr. Valter Longo:** Rice is perfectly fine, is an excellent carb, but within the limits, right? So eating rice is pretty much like any sugar, if it's white rice and this, it's OK. Believe it or not, it's OK. If you have these in a limited quantity. It's not OK, if like most people, you have too much of it, then you're setting yourself up for this insulin resistance.

**Dr. Steven Taback:** Now I see you're very thin. Are you adhering to your own tenets here or have you experimented with yourself and your own diet?

**Dr. Valter Longo:** Before I joined the Roy Walford lab in 1992, I had a terrible diet and I have a hyper-tension in the family, high cholesterol. I had it all, you know. So but by age 30, I had high blood pressure, high cholesterol. And so but I happened to be in Roy Walford's lab, and he was writing books. He had one I think was called One Hundred and Twenty Year Diet. Yes. So I read these books and then I changed my diet. Then there was it. You know, so my blood pressure came back down to normal and has been normal since, my cholesterol came back down. So yeah. So I was lucky enough to be in the right place at the right time. And since then, I've been doing I've been following everything that I preach.

**Bill Curtis:** So let's get skip over to the diet you were talking about earlier today, about three times a year, perhaps venturing into something a little more drastic.

**Janice O'Leary:** I've tried this and it's a product that Dr. Lango developed, but he doesn't actually profit from. It's called ProLon. And it's a five day kind of meal kit that you get and it starts off, I think, at eleven hundred calories and then it gets you down to

around 700 calories per day just for five days. And I've tried various kinds of things like this in the past, but none of them had any real clinical data backing it up. And this one seemed to have good data when I first looked at it and I thought, okay, I'll try it. I enjoyed it. And I like the idea that if I can just do this three times a year for five days apiece, if that will help extend my lifespan, my healthy lifespan, then I'd be on board with it.

**Bill Curtis:** So tell us a little, Dr. Longo, about the philosophy behind going through this process a few times a year.

**Dr. Valter Longo:** Well, the philosophy really came from our cancer patient. I mean, our work with cancer patient, we started we were only fasting and at USC Norris Cancer Center. And basically the patients say we don't want to do we're only fasting when we have cancer. And the oncologist said we don't want our patients to do only fasting when they have cancer. And so the National Cancer Institute then funded the fasting mimicking diet.

**Janice O'Leary:** What's the difference between fasting and fast mimicking?

**Dr. Valter Longo:** Fasting, most people would view as just water. The water only fasting could be also effective, but at the same time it puts the patient at risk for all kinds of problems, hypoglycemia, hypertension, low salt in the in the system, etc. etc.. And so the fasting mimicking diet give us an opportunity to basically standardize the diet to make sure that that the patient does not have this problem.

**Dr. Steven Taback:** Now what how many calories is there being consumed during a fasting mimicking diet?

**Dr. Valter Longo:** While fasting mimicking diet, there are many versions. You know, we have a version for auto-immunities, a version for Alzheimer, a version for cancer.

**Janice O'Leary:** They vary. They vary in the clinical trials but.

**Dr. Valter Longo:** yeah, the cancer, for example, is four days, is very low calorie, I think it starts about six, seven hundred calories and goes down to 300. We want to get in four

days. And the reason for it is to really be adjustable to all the conditions that the chemotherapy and other therapies are carried out. And the one for regular people is eleven hundred calories on day one going to a seven hundred-fifty to eight hundred calories on day two, three, four, five. The one for auto-immunities is seven days long. And it's similar to the one for regular people but very different content. Alzheimer's is about fourteen hundred calories day one and then it goes down to about 900, 950 calories. And so we're adjusting based on the age, the condition, the frailty and many different needs.

**Dr. Steven Taback:** For healthy people, are you putting yourself through a fasting mimicking diet in some sort of cycle?

**Dr. Valter Longo:** Yeah, I do it twice a year.

**Dr. Steven Taback:** Twice a year.

**Dr. Valter Longo:** Yeah, I do it twice a year. And the reason for that is that I normally have a very good diet, a pescatarian diet, maybe fish a couple times a week and then just vegan the rest of the time. So I think it's that, that's about all I need to do.

**Janice O'Leary:** But you're Italian. Do you still drink wine?

**Dr. Valter Longo:** I drink wine. Yes. Wine and coffee

**Janice O'Leary:** How does that factor in?

**Dr. Steven Taback:** Well wine is vegan, I mean there's no animal in wine.

**Janice O'Leary:** True. True. But it's definitely not low sugar.

**Dr. Valter Longo:** No wine. Wine. I mean, people if you look at the math analysis and alcohol consumption up to five servings a week is actually either neutral or a little bit slightly positive. So unless you have other risk factors for diseases for which alcohol is also a risk factor, then alcohol is fine. You know, within these consumption limits.

**Bill Curtis:** So we've been going back and forth a little bit between just normal healthy living diet and the idea of this intermittent healing kind of a solution.

**Dr. Valter Longo:** And it is not intermittent. Right. So this is why I want to stay away.

**Janice O'Leary:** Sorry that's my language there.

**Dr. Valter Longo:** I want to stay away from these words because I mean, intermittent, lots of people think about these chronic interventions that you do every day, every second day, every three days. But the fasting mimicking diet is really something called periodic and I need to do it basis. So you may only need to do it twice a year, but you may need to do it twelve times a year and not necessarily in an intermittent fashion. We see the doctor saying, you know, I've looked at your blood results and your abdominal circumference, etc, etc. I want to put you on six cycles of this. I don't just envision this, this is already happening in 15 countries. I hope it becomes a lot more common.

**Bill Curtis:** Dr. Lunga, I'm going to send us toward a very fast break. We'll be right back.

**Promo - CTM:** Hi, I'm Robert Ross's, host of Cars That Matter. You might be wondering what makes a car matter and I have a feeling you already know the answer. Some cars have changed history. Some you can hear a mile away. Some have lines that make your heart skip a beat. If a car's ever made you look twice, then I think you know the ones that matter. Join me as I speak with designers, collectors and market experts about the passions that drives us and the passions we drive. Cars that Matter. Wherever you get your podcasts.

**Bill Curtis:** So we're back with my co-host, Dr. Steven Taback and Janice O'Leary and Dr. Valter Longo. Dr. Longo, can we jump into your diet that you're exploring in so many different studies? How would a change in your caloric intake or a change in what you're eating actually affect the growth of a cancer?

**Dr. Valter Longo:** Not just the growth, also the survival, the fasting mimicking diet alone is about as good as chemotherapy. But hardly or rarely a cures even a mouse, right, alone. Or if you just do a cycle of chemo or a cycle of fasting, you almost never

even cure a mouse. Now you combine the chemo and the fasting, and now you're starting to see cancer free survival. So mice that are cured. So they're suggesting that difficulties generated by the starvation environment for a cancer cell are there, but they're not sufficient to wipe them out. When you add the targeted intervention, chemo, immunotherapy, etc. etc., so that's when you're starting to see a much bigger effect. So now, you know, soon enough we're going to be publishing the clinical trials and on lots of this that I just mentioned.

**Dr. Steven Taback:** So it's a problem because it's very complex and it's a moving target. So there's not one set of recommendations you can make in general for the population or for a particular type of disease, because it seems to be changing all the time.

**Dr. Valter Longo:** Yes. This is why I think the mistake has been I'm going to have the magic bullet, but I only use the magic bullet and I wait and then I try another magic bullet, then another one. And that's very difficult. Even immunotherapy usually works only on a percentage of the patients. I think the trick and there may not be a complete solution, but the trick is going to be hit the cancer with a targeted intervention. But also with that wide acting intervention, make life of a cancer, of all cancer cells very difficult by creating an extreme environment and then use the the magic bullet to do, you know, to put them in a situation where they cannot escape.

**Dr. Steven Taback:** That's very interesting and creative, because when you think about it, chemotherapy kills off all cells.

**Janice O'Leary:** Even the healthy ones.

**Dr. Steven Taback:** Right. It doesn't discriminate between healthy or unhealthy. Whereas if you use a diet targeted form of therapy where the healthy cells actually are stimulated and benefited by it, but the cancer cells in some way are being injured by it, you're doing exactly what the ideal process would be and that is preserve the healthy and get rid of the unhealthy. We talk about diet all the time.

**Dr. Steven Taback:** No, no, I know is why we're saying...

**Dr. Steven Taback:** The trouble is and myself included, because I know what I'm supposed to be doing, dietary wise, but to actually implement it day to day, patients in particular. Now, there may be a certain segment of the population of physicians as well who may just reach for a medication that some of that is conditioned because of the fact that we have spoken countless times to our patients about the correct diet. People will have a hard time adhering to it.

**Janice O'Leary:** There are a lot of smart people out there who have a bagel every single day for breakfast. And it's, you know, not because they want to defy their doctors or they want to bring on type 2 diabetes, they just like a bagel every morning. And they don't want to really change that habit. So changing your habits on a daily basis, that's hard.

**Dr. Steven Taback:** Patients themselves would prefer a medication. Give me a pill so I can then go back and have, you know, my chocolate cream pie, you know, every night.

**Dr. Valter Longo:** The complaint is not so much that the doctor doesn't know that diet could change the status of the patient. The complaint is more that there is not really a coordinated effort. For example, most doctors in medical school, they receive minimal training on nutrition. Right? So it sounds so difficult for somebody that has never been trained in nutrition to intervene in a very forceful way on a patient because you've never been trained in this setting. So I think that the medical schools, I'm going to visit Loma Linda in a few weeks, and, you know, there are some medical schools and hopefully soon enough, many medical schools that are going to move in that direction of having doctors that understand, you know, not just that diet is the way to go, but also how do you get a patient to change a diet?

**Dr. Steven Taback:** But part of the problem, I think clinically and I'm not sure, you know, what the solution is at this juncture is that there doesn't seem to be a consensus amongst the medical community as to what is the actual appropriate diet.

**Dr. Valter Longo:** Sure. I mean, and I think there is much more of a consensus among the people that have been doing this for a long time, you know, and look, like we do, at longevity, at, you know, what people eat in areas of the world where there is record longevity. What about maybe epidemiological studies? What about the clinical studies?

**Dr. Steven Taback:** But even those who advocate a plant based diet, they're actually very pro fruits, not just vegetables. Whereas if you're talking about sort of a fasting mimicking diet, you were saying that really you shouldn't be using much of your carbs from fruits. It should be really almost entirely vegetables.

**Dr. Valter Longo:** No, no, no I mean, let's not confuse the fasting mimicking diet with the every day diet. That is two completely different things. You know, fasting mimicking diet you're going to do it two or three times a year. Everything else you are going to do every day of your life. In the fruit, there's nothing wrong with the fruit. The only complaint I have in my book about fruit is the idea that you can eat as much as you want and it's OK. Because fruit is going to have lots of sugar in it. And if you don't understand that you need to limit it, then that's not going to be so helpful for you. I would say that is a general consensus that eating a certain way, among the expert, among the people that spend a lot of time just doing this, eating a certain way is probably beneficial. Right. So eating let's say a little bit of meat, lots of vegetables, a little bit of fruit.

**Janice O'Leary:** Mediterranean diet. Right? That's the most...

**Dr. Valter Longo:** I would say a version of Mediterranean diet, Mediterranean/Okinawan diet. Yeah. So I think most people say, yeah, if you eat abundant levels of this, you're probably going to have a good weight and you're going to be healthy. Yet I would say that it's not really implemented out there.

**Janice O'Leary:** And the compliance, I think is a real, is a real problem. So, you know, say you have someone who does eat their bagel every morning. Cream cheese, the whole thing and Dr. Steve has told them over and over again, look, this isn't going to be good for you. You are on your way to being diabetic if you don't change your ways. The patient's like no, sorry. This is what I like. I'm going to keep doing it. If they did something like the fasting mimicking diet a couple of times a year, can that still change things for them? Can that prevent them from getting to, you know, the crossing that line into type 2?

**Dr. Valter Longo:** In the trial, certainly suggests that the most of the pre-diabetic move back to their normal state after three cycles. Now we have three trials on diabetes

ongoing. We're going to start one with 450 patients at multi-center. So we'll see. I mean, the question is, can they do it? How many cycles can you do it? Can they do it for years and years and years versus you know, I'd do it three times and then never do it again. So we'll have to see. But I think that, first of all, you need to have the doctors and the dieticians all on the same page and all sort of singing the same tune. Then the patients, Yes, a lot of them will not do it no matter what. But I think a lot of them, if they hear the same story from everybody, then there could be a different, a different result.

**Bill Curtis:** You had mentioned that we were we may have been used to fasting all winter long. Essentially starving ourselves because there wasn't much food around. How do we actually decide that a five day concept could mimic that?

**Dr. Valter Longo:** Well, first of all, five days is for people that are that are normal. They don't have any diagnosed disease. It's a compromise on safety and also efficacy and also compliance. So the idea was, if you go on a fast, you're going to suffer for the first two days or so, especially the first time. But also the subsequent times. So if you say these two days or two and a half days and stop, then it's all, it's all very hard. Then they say. Third, the fourth and fifth day are really days where it's pretty easy because the body now tells you you're OK. You don't need to eat. I mean, most people, in the great majority of people. So now you take advantage of these three days. Now you could go longer. And for example, with auto-immunities, we're going longer. But we feel that is not worth the risk of pushing people in that direction. We rather stop at a five and also at five it's an issue of compliance. You know, people can start on a Sunday and finish it on a Friday. And it's much more.

**Bill Curtis:** And really go hit the weekend, right.

**Dr. Valter Longo:** Exactly.

**Dr. Steven Taback:** It's a little counterintuitive, the notion that you're going to be on a healthy diet day in and day out. And every once in a while you're going to go off your diet and splurge. I think intuitively you say, OK, that sounds like a reasonable, healthy way to be. The notion that all you have to do is really fast and go through this ketogenic process for five days, three, four times a year. And that that would give you a similar benefit to eating..?

**Dr. Valter Longo:** Yeah, I want you to do both. In fact, my book is split 50/50 between eat well every day and then do the fasting mimicking diet. I also say, I also say the worse you eat, the more you gain, weight you gain, the unhealthier you become, the more you're going to have to do the fasting mimicking diet.

**Janice O'Leary:** And part of the difference, I think, when I was reading your book, that with the, when you starve your body a little bit, that's where you really get the longevity into play.

**Dr. Valter Longo:** The other interesting thing about these vegan, these five vegan days, is most people, no matter how bad their diet is, in fact, the worse the diet is, the more they use it as a little bit of a lesson or also a mind opening moment. Right. So they will come back and say, you know, I didn't think I could eat a vegan low calorie diet or fast. And now I did it and I felt very well. And so now I went back and I don't feel like I need to have all those steaks and all that. So, you know, the effect is the opposite of what people will expect. So people are not saying, oh, now I do the fasting mimicking diet. So let me just go out and eat gelato, you know, seven times a week. They tend to do the opposite. They tend to say, you know what? I don't feel like, I mean, I eat all kinds of things, but I am more drawn towards this healthier lifestyle.

**Dr. Steven Taback:** But the psychological concept of being so restrictive sounds like a turnoff. But when they actually do it and they realize that they feel better, that they see a new way of perhaps living in it,

**Dr. Valter Longo:** and it wouldn't be that different from, say, running a 10K. Right. So people that never ran, you run a 10 kilometer, you're going to feel terrible and you're going to struggle. And the first time is hell. And then most people will say, but you know what? I felt pretty good. You know, when I was running, I felt good. Even though I struggle then after that, I felt even better.

**Janice O'Leary:** I was wondering earlier, is there any association with exercise that's part of the longevity research you've been doing? Or is it just diet?

**Dr. Valter Longo:** No, no. I mean, the exercise is very important in the book. In the first book I wrote I dedicated one chapter to exercise, you know, to a hundred and fifty minutes a week of exercise. This seems to be very positive and very effective in reducing mortality risk.

**Bill Curtis:** How do you feel about the artificial probiotics, the ones you buy in a store, a refrigerator and or any of them do they work?

**Dr. Valter Longo:** Well, they could, I mean, they can work. They can help. But I think that they are a quick fix when we combine the fasting mimicking diet containing lots of prebiotic ingredients. So the fibers in the vegetables, they feed the lactobacillus, they feed all this positive bacteria species. There was really key in protecting the mice against these inflammatory bowel disease. It is a lot of clinical data now suggesting that if you give a probiotic to somebody that has inflammatory bowel disease, this can reduce the symptoms. So I think we need more data. But I think for normal people, the best way to go is with the vegetable containing the food for the good bacteria.

**Bill Curtis:** In this country so many people live almost exclusively on processed foods. Most of America eats a bunch of highly processed, spiced, sometimes frozen foods. Is any of that a problem? Or do you not recommend that either?

**Dr. Valter Longo:** Well, first of all, I would not put frozen with the processed. For example, if you have organic vegetables that are being frozen at the source, a perfect food. I mean, it's about as good as it gets. Now, if you look at process meats that's over and over and over, it comes up on top as the most unhealthy food that you can possibly think of. And also because we always hear that, you know, socioeconomic status makes it difficult to afford the fresh and I'm always a little bit concerned that we don't say it doesn't need to be fresh. I mean, it could be frozen and and, you know, can get very high quality, even organic food that has been frozen for a fairly low amount. They can feed a family for a few dollars. So I think that's the kind of thing we also need to start telling patients, you know, having solutions that because I understand how difficult it may be for a lot of people to, you know, go to the grocery store every day and buying all the vegetables that are needed to make fresh food. And so I think it's good to think of alternatives like that.

**Bill Curtis:** Well, before we let you go, I have to ask you somewhat more political question, if I may. So you've seen how different health care systems work. Tell us about your perspective on the American health care system. Is there someone who's doing it right compared to the U.S.? What have you learned from your vantage point?

**Dr. Valter Longo:** Oh for sure, the U.S. this system is unsustainable and is too expensive. And but that doesn't mean that it's a bad system, I think is just too expensive. You know what if you ran out of your insurance and is it sustainable to have treatments for cancer or many other diseases that are in the, you know, 50, hundred thousand dollars a year per patient? And I think we already know the answer, it is not sustainable. So this is why I think the nutrition, I think most people will agree, and are agreeing already, that's the way to go in the future together. Complementing the standard of care by trying to reduce the burden.

**Dr. Steven Taback:** And prevention is always cheaper than the cure.

**Dr. Valter Longo:** Yeah. So yeah. So it's definitely doable, but it's not going to be done this way. So it's going to be done with medical schools having a very different agenda. For example, I say medical school first and last call should be about healthy longevity. It's not about, you know, can you get somebody out of your office and be treated for a week or two. Well, how do I get you to 100 or a hundred and ten healthy? And I don't think, you know, almost any medical school has this view of their mission.

**Dr. Steven Taback:** It may be starting, but certainly in my day there was there were no courses on prevention.

**Dr. Valter Longo:** Yeah.

**Dr. Steven Taback:** I mean, with the exception of vaccines and preventative health that way. But in terms of true prevention of cardiovascular disease, prevention of cancer, I mean, because what can you do other than, well, don't smoke. And then certainly, you know, exercise is an important thing.

**Dr. Valter Longo:** Yeah.

**Dr. Steven Taback:** But now getting down to what you do in terms of the detail work, in terms of the importance of nutrition and the specifics of nutrition. I think it's starting really a new era.

**Bill Curtis:** Dr. Longo, I want to thank you for joining us. This was really a spectacular learning experience for me. And, of course, Steven and Janice, thanks so much. And I look forward to doing this again when you come back and visit us. I think we've only touched on some of the wisdom that you can pass on to us.

**Dr. Valter Longo:** Sure. Thank you for having me.

**Bill Curtis:** So thanks, everybody, for tuning in to Medicine. We're still Practicing. Have a good day.

**Bill Curtis:** If you like what you hear please tell your friends and let us know how we're doing. By leaving a comment, it really helps if you give us a five star rating and we really appreciate it. You can also subscribe to the show on Apple podcasts, Stitcher or wherever you listen to your favorite podcast. This episode was produced and edited by Mike Thomas. Audio Engineering by Michael Kennedy. And the theme music was composed and performed by Celeste and Eric Dick. Thanks for listening.

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