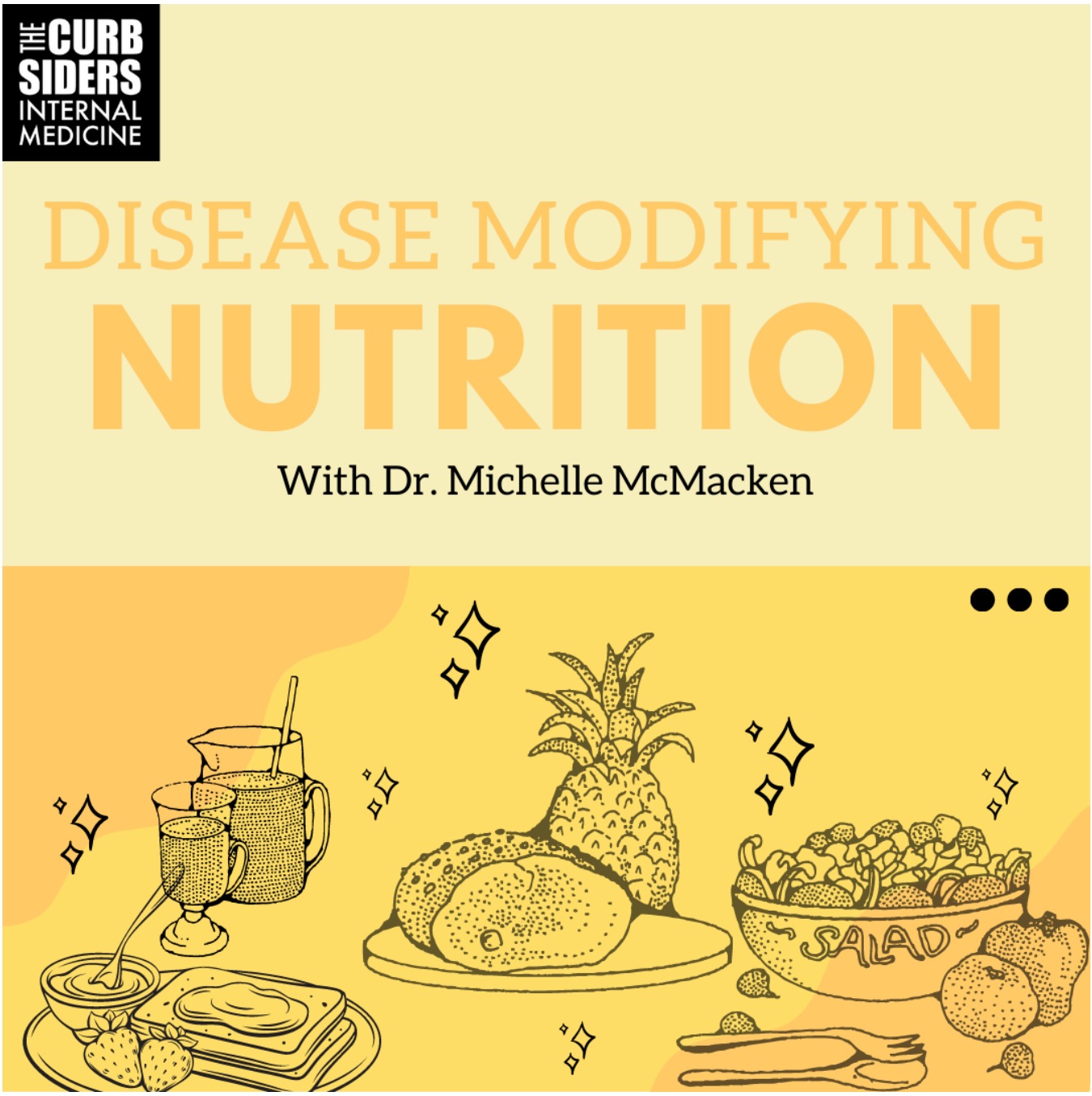
#360 Disease-Modifying Nutrition with Dr. Michelle McMacken



[Disclaimer]

Matt: Well, Paul, we're back. This is the Curbsiders. I'm Dr. Matthew Watto here with my great friend, Dr. Paul Nelson Williams, Paul, how are you doing tonight?

Paul: Matt, I'm great. It's been a while since we've recorded, I'm glad to be able to spend time with you again. I'd missed you.

Matt: It has been- the audience probably hasn't missed a beat, but it's been about a month since you and I have recorded. On tonight's show we are going to discuss nutrition and how to use a plant-based diet to really treat chronic disease with the great Dr. Michelle McMacken, who we talked about at our ACP recap show, Paul, do you remember that, Paul?

Paul: I mean, I was there certainly. [laughs]

Matt: Since it's been a while-

Paul and Matt: [laugh].

Matt: -I think I was in a fugue state from COVID-19 infection, but I still vaguely remember this talk.

Paul: This is when we were talking to you and your head was in-- we're talking to via iPhone on a tripod is that. Yeah, good stuff.

Matt: Yeah, Chris had me duct taped to some apparatus, so I was a talking head in the room. Yeah, it was great. Well, Paul, before you introduce our co-host and tell you a little more about our guests. Paul, can you remind people what is it that we do on the Curbsiders?

Paul: Sure, I'll see if I remember how to do this Matt. We are *the* Internal Medicine Podcast. We use expert interviews to bring your clinical pearls and practice-changing knowledge. As you mentioned, we are joined by another co-host and the producer of this episode. Dr. Deep Shah. Deep, how are you?

Deep: I'm doing great. Thanks for having me, guys. I'm excited to help produce this time.

Matt: Yeah, Deep in the audience may remember you, you were on some of our Health Policy Episodes way back maybe 200 episodes ago or so. But now, you're back here because you're a primary care doc. You run a shop, you see your own patients, and this is something you deal with every day. So, why don't you tell them a little bit about what they're going to hear on this episode and then introduce our guest.

Deep: Yes, I made a point of it to be at least memorable, I guess so. No problem, but I'm thrilled to have the opportunity to discuss nutrition as disease-modifying therapy. The term I've coined myself. We have a terrific conversation in store with you with Dr. Michelle McMacken, who is executive director of nutrition and lifestyle medicine at New York City Health and Hospitals. She is double board certified in internal medicine and lifestyle medicine. She has been a practicing primary care doctor at Bellevue Hospital for the past 18 years where she also teaches residents and medical students. She is passionate about nutrition and clinical practice, especially in underserved communities. Dr. McMacken

loves lentil tacos and overnight oats and is a real sucker for dark chocolate. So, without further ado, let's get to it.

Matt: You know Paul, I forgot to ask her about dark chocolate too. But Paul, I did have a pun that I wanted to try out on you, so are you ready?

Paul: Yeah, great, belt it up.

[laughter]

Matt: I spent a lot of time coming up with this Paul as you know. So anyway, Paul, have you heard about this amazing, amazing corn? It's the best in the country.

Paul: I have not heard about this corn Matt. Why don't you tell me more about it?

Matt: Paul, they tell me it's irresistible.

[laughter]

Paul: Just for the audience at home that mics are still on by the way.

Matt: [laughs] Alright, thanks to *60vegetablepuns.com* for that.

[laughter]

Matt: And, [laughs] oh gosh.

Paul: Your Google searches must be a nightmare I just can't even imagine.

Matt: Okay, a reminder that this and most episodes will be available for free CME credit for all health professionals through VCU Health at *curbsiders.vcuhealth.org.* Dr. McMacken did not report any conflicts of interests, except maybe hoping that big broccoli will contact her soon, Paul. Okay, still, I guess Paul's mic is not working.

Deep: Wow Matt, you are unbeatable.

Matt: Paul's mic is not working.

Paul: [crosstalk] You can help out here too buddy.

Matt: Alright, let's get to the show. Well, Paul, we've had our 20th technical difficulty, and you think it's time to start now.

Paul: We're doing great. I think it's time to start.

Matt: Yeah, Michelle, I've been a fan for a while now. I saw you at ACP this year. And I know a couple of years ago at ACP you were there as well and everyone's talking about your talk. So, we're like, obviously, we have to have you on the show. We're going to get into that. But how do you describe yourself when you're given a one liner? Or if you're meeting a new person? Can you tell the audience a little bit about yourself?

Michelle: Yeah, sure. Well, thanks for the kind words and I'm really excited to be here. I don't describe myself with one-liners very often. But if I had to, I would probably say, I'm a primary care doctor first and foremost. Outside of work, I love the summer and this is the time of year where I start getting a little depressed because it's the end of August, and everyone else is excited about fall. And I just can't let go of the summer. I love cats. I have two cats. Houseplants, I love taking-- it's been a habit since COVID. But going on epic long walks and listening to tons of podcasts. So, you guys are on that list, of course. And probably surprisingly, I am a rabid football fan, which a lot of people are surprised to hear. I'm from Baltimore and I'm a huge Baltimore Ravens fan. So, hope I'm probably really offending a lot of people with that, like some Steelers fans out there. So, I am sorry you guys.

Matt: We don't talk about sports enough on this Paul. What's your team again?

Paul: I don't have one. I'm from New York, Pennsylvania originally. So, we actually-- there is a fair cohort of Ravens fans there. There're-

Michelle: Nice.

Paul: -yeah, Steelers fans, Eagles fans. It's like confusing people there in New York. So, we don't have a lot of loyalty.

[laughter]

Matt: Knowing you, Paul, I can attest you're a confusing person sometimes.

Paul: That's right, in the absence of loyalty, also fair [Matt laughs]. Michelle, my typical question is I like to ask about any piece of culture that you've consumed recently that you would recommend to our audience, and it doesn't have to be medical. It can be fiction, nonfiction, book, movies, shoot the moon, what's something you've enjoyed lately that'll help me broaden my horizons?

Michelle: Well, I mean, I'm so sorry to do this. But I just have to bring up a show, which is *Succession*. Any of you guys seen it?

Deep: We started it and it was too intense for my significant other. So, we decided to switch and watch *Food Network* every night. So, we're pretty much only watching *Guy Fieri* right now, exclusively I don't know.

Matt: You got great frosted tips. So, you know what I mean.

Deep: He does and he supports a lot of small businesses.

Matt: Yeah.

Deep: So, he can't lose.

Matt: Yeah. Well, Michelle, I haven't watched it, I've heard great things. Like with Deep, it's a little tough to get my wife to watch anything that's not a romantic comedy. But, maybe someday it's on my list.

Michelle: Yeah, we have a lot of gore-watching in this house. I guess it goes with the football side of me, not the houseplants and cats and summertime side of me.

Matt: Alright, great answer. Deep, anything you wanted to ask before we get on to talking about some nutrition here?

Deep: I would just like to ask Michelle, if you have any advise you received that has really stuck with you and any of the other hosts would like to share you're welcome to as well.

Michelle: One of the things that I think I've learned is, every time I try to practice any other way than the way I practice, I get in trouble. So, for example I never cut corners, I'm obsessive. And I'll be that person that's in clinic until 7 o'clock checking things. And whenever I start to see myself cutting corners, inevitably, something happens where I'm like, okay that's not a good outcome. I just have to accept that this is how I practice. So that's “Check yourself before you wreck yourself.” that I come from is just to make sure you're not taking things too lightly because for me that just doesn't work. And I think that the piece of advice that I've gotten is it works for life in general, not just medicine is basically just try to be nice to everyone. Not just because it's nicer for the world, but because you probably will end up needing some of those people later on. I don't know if you guys have ever had that experience where I'm like, that person's really-- I'm really frustrated with this person. And I just want to say something or lash out and then two years later, I actually have to ask that person a favor. So, that's worked well for me too, just to take it easy with folks.

Matt: I think that's fantastic advice. And we want to learn a lot about how you practice specifically counseling your patients about a healthier lifestyle, so let's get to a case. Deep, do you want to read the first case?

Deep: Absolutely, I'm going to talk to you about Ivan, he is a 44-year-old, generally healthy mechanic from Croatia, who moved to the US about 20 years ago and is following up after wellness labs. They were required for his part-time job as a school bus driver. Labs resulted with an LDL of 161, triglycerides 189, total cholesterol 235, HDL 36, and A1c of 7.1%. Ivan is skeptical about the labs themselves. He's a healthy person and very active in addition to his work. He mountain bikes on the weekends and raises four healthy children with his wife, Helena, who generally cooks at home for the family. He rarely eats out. Their diet consists of eggs, berries, homemade breads, organic potatoes, and fresh meats from a local butcher. Ivan's family rarely eats desserts. So, this has got to be the most common follow-up that I see in my clinic, patients like Ivan after a wellness visit. And so, I just wanted to start with a very basic question and if you'll indulge me, no pun intended, what is evidence-based nutrition?

Michelle: Well, I think it's important to recognize that there is a huge, I mean, truly enormous body of literature around nutrition science. And I think we, as physicians, most of us are not really exposed to that literature. And I know that when I first became exposed to it, I was astounded at how much was there. And so, there are all different types of studies in nutrition, there is feeding studies, there is metabolic ward studies, there are randomized control trials, there is prospective cohort studies, and each with their own advantages and disadvantages. And I think the point that I always make around evidence-based nutrition is that you really want to look for where you start to see overlap in terms of findings between different types of studies, and also across different populations. I think that we're not talking about something that's just come up recently for which there is not much data, we're talking about themes that have been around in the nutrition science literature for decades or longer.

Deep: Every few years, we'll hear about a new diet that has really good evidence. And when I first came out of training and I was in training, it was the Mediterranean diet. And since I've been practicing, there is a lot of discussion about whole food plant-based diets. And I think what you're suggesting is what I'm hoping is the answer that there are unifying themes and at this point, we have enough literature to tell the practicing internist. You don't need to know all the details about each of these diets.

So, if you could walk us through what are some of the unifying themes when we think about cardiovascular risk reduction, glycemic control, cancer risk reduction? I think those are the top three that I hear about what to look for with diets. So, how do we navigate everything that's out there?

Michelle: Yeah, so you just said that perfectly, Deep. Basically, I think that the themes revolve around thinking about really the foods that are unequivocally health promoting for which the evidence is extraordinarily compelling and consistent that there're health promoting foods such as whole fruits, so not juices, but fruits in their whole form, vegetables of wide variety, legumes like beans, lentils, chickpeas, grains that are in their more whole form, that could be whole wheat products, whole wheat pasta, or whole wheat bread, or even better the intact grain itself. Looking at brown rice, or oats, or, barley, or quinoa, and then nuts and seeds. Those are the categories of foods that there is really not very much controversy about, it's very hard to find a study showing harm of any of those foods. And that's a slam dunk with those.

And I think that the other big theme are the foods that we know, we have really, really, strong evidence that they tend to increase the risk of disease. So, processed meats being a huge one. Meats that are, either red meats or white meats, but any meat that's been processed in any way, so it has added salt, or it's been smoked or fermented or has added preservatives. There is an extraordinary amount of evidence that these increase the risk of a variety of different types of cancer, particularly colorectal cancer, they increase the risk of heart disease whether it's coronary heart disease or heart failure, they markedly increase the risk of type 2 diabetes. That's quite clear and all the guidelines are in consensus about that. Unprocessed red meats to a lesser degree, you can probably find some folks saying that they don't think there is a problem with unprocessed red meats. But we do know that they're linked to a higher risk of cancer, diabetes, and heart disease. So, I would probably say they still belong in the not health-promoting category.

Added sugars, it's very hard to find anyone who will argue with that [laughs] so, drinking a lot of sugar-sweetened beverages, having a lot of sweets, really just exceeding a safe amount of added sugar in your day. And then finally, refined grains and ultra-processed foods. So, basically foods that—so refined grain basically starts out as whole grain and most of the fiber is removed. It's a very simple carbohydrate that rapidly pushes your blood sugar up, it's also linked to weight gain to heart disease to type 2 diabetes, and ultra-processed foods being foods that are very, very hyperpalatable, they are calorie dense, they don't have a lot of fiber, they have additives not really found in nature. But it's really the hyperpalatable part and the calorie-dense part that gets us into trouble because that cross-product means we can't stop eating them and we're eating a lot of calories. As a society that's a concern. So those are the two broad poles. And I think I would just make a special call out to fish because you could make a strong argument that fish belongs in the healthy food category. It is in the guidelines for, say, the American College of Cardiology and numerous other guidelines to consume one or two servings a week of fatty fish. So, those are the two poles that I think about.

Deep: So, there is always the 'nevers' and then there is the 'sometimes' which it seems like you're getting at with fish. And I know in some of your previous talks, you talked about eggs in that 'sometimes' category, I think all of us are familiar with fruits, vegetables, nuts, seeds. But in a minute, when we're talking more about Ivan again, I'd like to hear a little bit more about some of the whole grains. And what that really means because that word and legumes, yeah, those are even new for me as somebody who has been interested in this topic, but I have a question for you. You mentioned the American College of Cardiology guidelines. So, I remember when I was learning, evidence-based medicine in medical school and residency, we would talk about what's the best literature out there and does this really improve mortality? So, is this definitive in the literature? And if it is, what mortality benefit, do patients who have a traditional American diet and at least start to venture over to the kind of diet you're describing. What kind of outcomes do we see and how much benefit is there?

Michelle: Yeah, so, first of all, I think it's really important to recognize that what we eat is the leading risk factor for dying of a chronic disease in the United States and globally. Food has a huge, huge role in our mortality risk, and just in our health risk overall. I think that the data are pretty clear that healthier eating patterns that focus more on those plant-based foods that I brought up before, those and less of the unhealthy foods, those eating patterns can definitely-- these are all nutrition epidemiology studies, we're not talking randomized controlled trials for this. This is not necessarily causation, but we definitely see an association with mortality benefit when you talk about consuming more of these healthy foods compared to the less healthy foods. And even when you break it down in terms of different macronutrients.

So, let's say you're looking at protein and you're comparing animal sources of protein versus plant sources of protein. We have at least five very, very large prospective cohort studies from around the world showing that even just substituting very small amounts, sometimes as little as 3% of your calories of animal protein with a plant source buys you an associated mortality benefit of up to 35%, if what you're dropping is processed meat, if what you're dropping is red meat, if what you're dropping is eggs, and the benefit even actually goes all the way down to dairy and poultry and other animal proteins that we don't necessarily think of as the least healthy ones. These small swaps can make a big difference and there is definitely a signal of a mortality benefit in the nutrition epi literature.

Paul: And can I get granular, Watto? Do you get it, Watto?

Matt: [laughs] Nice one.

Paul: Well, thanks. So, I'm selfishly asking too, in terms of that kind of swap. So, as someone who eats a largely plant-based diet, but I also eat mostly garbage. So, it's a lot of like the fake chicken and the fake beef and that kind of stuff. Do the studies look at that type of swap? Because I'm imagining the swap that they're talking about is probably healthier than the swap that I have actually made. But I don't know [crosstalk]

Matt: Yeah, that's so new also.

Paul: Yeah. So, had they looked at-

Michelle: Yeah.

Paul: -the solely synthetic meat in the lab not really resembling any actual thing found in nature.

Deep: I think the other way of phrasing that is, are all plant-based diets made equal?

Paul: No, I like my way.

[laughter]

Paul: Sorry, yes that's a great way to phrase it.

Deep: It's all garbage.

Michelle: It's all garbage people.

Deep: All smelly?

Michelle: [laughs] I mean, first of all, we're here to talk about nutrition, but there is a very strong argument to be made for what you're doing, Paul because there is a huge environmental impact to any benefit to doing that. Now, in terms of the actual, the newer, there are a lot of products on the market in 2022 that you can pretty much substitute any animal food at this point. There is a huge spectrum in terms of their potential health benefits. We don't have a lot of actual outcome studies because they're too new like Matt was saying, but what we do-- if you just start dissecting them down by their ingredients, there are some that are processed, but not processed in a way to become bad. So, for example, if they're just using soy-based protein or pea-based protein, and they're not high in sodium, and they don't have a lot of coconut oil, or other saturated fats added, that's probably fine. I think the concern becomes when you're eating those types of foods day in and day out as your primary basis of your diet, and they're high in sodium and saturated fat, then you're definitely going to have a potential concern. What we do have our studies comparing and these are about five years old now, so they predate a lot of the current animal meat substitutes. But when you focus on nonanimal foods, but you're consuming juice and sugar sweetened beverages, and white flour and desserts, but no animal foods, your coronary heart disease risk, your diabetes risk is just as high as if you were eating an animal-based diet. So, that's not a good swap.

Matt: And you made the joke at ACP that, "Yeah, you could have a vegan lunch, and it was Coca-Cola and a bag of M&M's or something that.

Michelle: Right.

Matt: And that's to illustrate the point.

Deep: So, you saw my lunch?

[laughter]

Michelle: And listen, there is nothing wrong with having that lunch once in a while, there really isn't.

Deep: Yeah.

Michelle: We're talking about what people do day in and the day out.

Deep: The themes of your diet, day in and day out.

Matt: I want to make the point to that when you say whole food plant-based diet, we're not saying that that's all that people can ever eat and that everyone has to go completely that direction, vegan diet is where you're pretty much only eating plants, no animal products, that's not what-- we're just talking about ways to use this food to make some better food choices for patients. Because in our country, there is a pretty toxic food environment, which has a lot of these food choices like the ultra-processed foods and the processed meats and things that, which I think most people know they should be avoiding. And that's what we're trying to do. So, I don't know, should we bring it back to Ivan Deep and see what we're going to counsel him on?

Deep: Yes, when you meet a patient like Ivan, they’re coming back to the clinic, with a lot of skepticism about the results themselves, because they don't mesh in the patient's mind with how healthy they think the diet that they're consuming might be. I want you to, if you don't mind, put yourself in your primary care doctor's shoes and walk us through how you would approach Ivan. And if you could also mention

some of the pitfalls that you see, your colleagues and those of us who are less familiar with approaching this maybe make?

Michelle: Yeah, this is a great case, I think the first thing that I would-- when I have a patient who has high cholesterol like Ivan does, LDL that's really significantly elevated. And I think you said 161 or so and the A1c of 7.1, which is presumably a new diagnosis for Ivan. In addition to just explaining what those things mean, I feel ethically it's my job as a physician to tell this patient that a lot of what he's experiencing can be dramatically improved with lifestyle changes, particularly nutrition. And that's not to make anyone feel-- it's not to say you have to do that. It's just to say just so that you know, there is a lot that you can do with shifts in your diet and you're always going to be in the driver's seat. You're always going to decide how far you want to go and how quickly you want to get there. But you should know that this is possible. And I wish I had said that to more patients earlier in my career because I just had never seen anyone change their diet because I hadn't tried and talked about it with people. And then once I started talking about it with people and saying, like, "You really have, there is a lot that is in your control." And you might be scared right now, and I completely understand that we're going to talk about I'm going support you. But if you make changes, you could theoretically put your diabetes in remission. And I'm telling you, once you see someone do that, you cannot unsee it.

Deep: Yeah, if there was any other drug or therapy that had that kind of mortality benefit, you're describing, we would feel neglectful in the ‘do no harm’ category. Why are you talking about anything else. This is where we need to be focusing a lot of time on this initial visit. So, your first step with Ivan is to level set, explain to him what the results mean, see how interested he is. And then my next step would typically be to ask the patient to describe what they eat. And this is where sometimes I see that patient is rolling their eyes. I already told you what I eat. I eat well.

Michelle: Yeah. Well, I mean, I think the first even before that, what I do say to people is, is this something you're interested in learning more about? Because if he's sitting there saying I do not today want to talk about how I can change my diet. That is not a time for me to bring it up. That's the time for me to respect and say, okay, no problem. Maybe next time if you're interested, we can go there. I will say that in my practice, I think 80% of patients say yes, they want to talk about it, so that I do go on to talk about what they're eating. And I do like to do a 24-hour recall, it is far from accurate compared to what the person actually ate for the last 24 hours, but it does give you a quick snapshot of the types of foods that they probably are eating typically, and where they're eating those foods. Are they cooking at home? I mean, we know Ivan is eating primarily from food cooked at home. But are they cooking at home? Are they eating out and just the overall pattern of how the person's eating? I will be amazed if I ask people what are the foods you typically like to eat versus what did you eat yesterday, there is such a wide-- yesterday is very concrete. And you'll learn things that you can't-- you're like, okay, now I see what's going on. I think that's a very useful tool and it doesn't take that long.

Deep: In comparing to other conditions that we manage in clinic. PHQ-9, PHQ-2 is a good screen tools that penetrated the primary care visit. Anything you would recommend for nutrition?

Michelle: Yeah, I wish someone would develop a really, really good validated tool for nutrition screening and primary care. And I know some people will say that they have, and there are some out there. I personally find them to be too long and not as culturally relevant for my patient population. I just like to tailor it a little bit and my patients-- if the question is like, do you eat bagels, half of my patients are going to say that you know that's not relevant for my background. So, I know that the American Heart Association, there is a recommended dietary screener. I think its nine questions. I'm happy to share it, you can put in the notes if you want, but I don't use that. I do the 24-hour recall.

Deep: Okay, so the 24-hour recall is a takeaway?

Michelle: Yeah.

Matt: And did you have any handouts that you're giving patients, because I'm not sure how long your visits are if you're doing an hour consultation with a new patient and doing this, but in your standard 20 or 30, 15, 20, 30-minute visit I think a lot of people have? So, you ask them to do the 24-hour recall. I imagine maybe they're not doing that in that visit, maybe they're sending that to you or filling it out when they're waiting for you and then what are you giving them when they leave for homework or handouts?

Michelle: Yeah, if you have the capacity to have the patient fill out a 24-hour recall in the waiting room that saves time. I usually am just asking the patient and my visits are 20 minutes and I'm asking them often through an interpreter phone on top of that.

Matt: Oh Jeez.

Michelle: I'm asking them, what did you eat yesterday and I go through starting from the time you woke up and we just go through the day. And then I ask about beverages, you always have to make sure to swing back and ask about beverages. And ask about ginger ale because nobody thinks that that's soda for some reason. They think it's good for your health.

[laughter]

Matt: Paul, it has ginger in it. Isn't that the main thing you're drinking Paul? I mean, for me it is.

Paul: No, it's the same thing where sometimes beer is distinct from alcohol and you really do have to differentiate between those two things. I love that point so much. I feel like ginger ale never comes up with instead of, “Oh no, I drink tons of ginger ale just not soda.” I asked [crosstalk]

Michelle: Exactly.

Paul: --if this is on me. That's such a great point.

Matt: What Deep did? Deep gave this guy eggs, berries, homemade breads, which they sound are potatoes that are organic and fresh meats from a local butcher. I mean that sounds pretty healthy. So, it's a tough case, but maybe he's drinking a 12-pack of beer every night or something?

Michelle: Well, I would say in the diet history that we got about this patient Ivan, he's consuming, we heard about one type of fruit, which is the berries that's awesome. But those berries are carrying the rest of the diet.

[laughter]

Michelle: They're carrying all the weight of most of the diet [laughs]. So, no vegetables are mentioned, I'm sure he eats some vegetables. He's presumably having meat with every meal. I'm going to just guess. The homemade breads are way better then breads that you might purchase in the store because they probably don't have added sugar. But it is still if it's made with white flour that's still suboptimal to a whole grain bread. I have no problem with potatoes. So yeah, I mean, I think there is probably a little more delving that you would do, so for Ivan, for example, and this is what I do with patients if I have time after the 24-hour recall, I will then if I haven't heard them say any vegetables or fruits in what they ate yesterday, or beans or whole grains, I will whip out my superfood sheet, which

some of you may have heard me talk about before. And this is the most useful handout I've ever had with nutrition. I actually put it together with a resident a few years ago.

Matt: I'm so excited to get this.

Michelle: I will send it to you. Yes. Honestly, we use it, our whole clinic uses it. It's a staple in our clinic because all it is is just literally a list of those healthy foods that I just mentioned earlier. Fruits, vegetables, whole grains, legumes, nuts, and seeds listed in English and Spanish, it just lists examples. And so, what I do is I hand to the patient and while I'm putting in orders or whatever, I have them look it over and say which foods on those lists do you already happen to like? Because that's where we're going to start. I'm not going to start by telling them please eat kale, that might not be something that they've ever tried. So, it's more like, okay, where are we starting from in terms of healthy foods that you already like? And how can we set some goals around that? And I also give them a lot of choice. I'm not just saying, "Please start having a serving of vegetables every day," I give them usually at least three options, so that's one option, another option is to start to shift away from the ginger ale and always come up with what are you going to have instead because I've had people switch away from soda and start drinking sweetened iced tea. And that's a rookie-- a rookie error that I didn't anticipate. So, now I know you've got to come up with what's the alternative, but you're always giving them different options and key is to let the patient tell you what they're ready to work on and then make a really specific goal around it.

Paul: I was having a hard time articulating is, how do you have this conversation without seeming like you're attributing blame to the patient. The subtext is if you hadn't eaten like this, we wouldn't be in this predicament. So, rather offering food as an intervention, sounds what you're doing, which I think is probably much more appealing and also obviates some of the guilt that patients might be bringing into the visit. I like the idea of having options for them and specific interventions as opposed to prescriptive stuff. That's great.

Deep: We're going to get back to Ivan in just a moment. But I think Watto's point about how initially it seems like Ivan has a healthy diet was the entire point of the case. Because it feels like we don't have a lot to offer him as the internist. And when we hear words like 'organic', 'fresh', it seems like he's doing a pretty good job. And what I'm taking away from you in the first half of this case is that it's not what he is eating. It's the absence of a lot of these greens, the superfoods, the legumes, basically no beans at all in his diet. And those should be substituting some of the other things that he is enjoying on a three-times-a-day basis right now.

Michelle: Exactly. And that also gets back to Paul's point. So, I think the crowding out strategy is much more effective than the stop-eating meat strategy and stop eating this and stop doing that. That's just a really negative downer message that nobody wants to hear. And they're going to leave the office feeling they've messed up and their diet is bad and they're bad. It's more about not to be cheesy, but it's about-- so to speak. It's about abundance, it's about like what can I add to my diet that I actually already happen to like or something I can try? And so, I always try to frame it in that positive messaging.

Deep: So, let's get back to Ivan's. You've done this intake. He's lukewarm about embracing major diet change but says he'll work on it. Do you establish a treatment target for that follow up and what's your typical follow-up interval if this was a new set of diagnoses?

Michelle: Yeah, first of all, I think if he's not particularly motivated to make changes if he's lukewarm, we will set a small goal that's appropriate for him that feels manageable to him. And then I will be very realistic about the expectation that I'll say when you come back in my practice, it's like I'm lucky if I can see a patient back in three months, I think ideally, I would see them back in two weeks or a month that

would be ideal, but in my practice I can't usually, so I've seen them back in three months and I would say, "Your A1c and your cholesterol may not have changed much if you're not making big changes, but that's okay. Because what we're trying to do here is something that's sustainable, that works for you and your family in the long term. This is not a crash diet situation at all. Unless you really are excited about making big changes and feel that that's sustainable. This is more about how we actually start to change the grooves that you run in and over time things that you can sustain. And so, I never want anyone to come back feeling bad. I didn't lose weight, my blood sugars doesn't change, it takes time. And in patients that aren't super ready to make big changes, then there is definitely a role for medication and I just normalize that. It doesn't have to be either/or but if you're making really big changes, a lot of times you can either avoid medication or reduce it.

Deep: And going back to guideline-based care for high cholesterol, new diagnosis of diabetes, it is recommended by the American College of Cardiology, the American Heart Association, and American Diabetes Association, all of these that-- the emphasis really should be initial focus on nutrition as therapy for these patients.

Michelle: 100%.

Deep: We're not being negligent by not pushing metformin at the first visit?

Michelle: 100%. If you look at every single guideline, it's the food pyramid, like the base of every guideline is lifestyle. And just as physicians, we often skip to the next round because we don't have the time, we don't have the training, we don't have the facility, it's hard, behavior change is the hardest possible thing to help people do. It's so much easier just to say here's your medication and see, and come back in three months. So, you're completely within the evidence to start with lifestyle and give people a chance. Now, obviously, if they have symptoms or A1c is 12. that's a very different story. And you're probably not going to just do lifestyle, although I have had patients just do lifestyle out of their own choice in that situation and put their diabetes in remission believe it or not, but that's not everybody.

Matt: Michelle, I saw you included a case of someone, I think their A1c was double digits.

Michelle: Yeah.

Matt: They had a lot of room for improvement. And it was early on, they were caught and they totally reversed their diabetes. I've had about-- I want to say these are for young men in their 30s to 40s and they had family members who died of heart disease or diabetes, they found out they had diabetes, and they totally changed the way they were eating. It was a lot of the red box stuff like the processed refined sugars and processed carbohydrates and they cut that all out, lost weight, reversed their diabetes, and a couple of them know are at two years out, and they're not on medications for diabetes. I mean, people can do it if they want to, it's hard work. And I think some of them tell me that their family thinks they're crazy because of how strict they've become about things, but it is possible. And it's crazy when it happens or it feels great.

Michelle: So great.

Matt: And a lot of these patients are self-educated, I just gave them some of these big broad points. it's not like I was telling them every single thing that they should be eating. I don't have time or expertise to be able to do that.

Deep: So, let's say Ivan was only ready for small steps. He rediscovered his love for chickpeas and has integrated those into his lunch diet and also stopped drinking lattes on Monday, Wednesday, and Friday just substituting them for black coffee. So, he comes back in four months due to a reschedule and his repeat labs show modest improvement, A1c down to 6.7% from 7.1%. His LDL is now 150, initially it was 161. His 10-year ASCVD is 7.4%. He mentioned that his brother has insulin-dependent diabetes and below-the-knee amputation, which he didn't realize was from diabetes until he disclosed his diagnosis. He said that he struggled to make more changes and wants to keep trying, but somewhat reluctant. So, what do we say to Ivan, now at the follow-up?

Michelle: Listen, first of all, I would say congratulations, because his A1c came down, we said from 7.1 to 6.7, that's not nothing, that's something and I will literally harness any nugget of positive change, just because people to feel good about what they've done. So, that's basically, my permission to say to the patient, like, this is great things are going in the right direction. If you want, we can push this more, if you feel ready, we can push this more. And potentially, if your diabetes goes into remission, and your cholesterol gets better, you may not need medication, we're dancing with, this is someone who probably should be on a statin if we say he has diabetes, and such elevated cholesterol, and who knows, and how long he's probably had high cholesterol for many years. And so that's going to be an individual decision. But even if he goes on medication doing the lifestyle, the nutrition piece, is going to synergize with that and dramatically improve his outcomes as we all know. So, I keep trying to give people a chance. So, it really just depends on how much he wants to do. But this is a great chance for positive reinforcement.

Matt: Yeah, we have a show coming up. It's going to air around the same time as this one, an update on lipids. And I know that we're going to be talking about really aggressive lipid management on that one. But when you have a lot of patients in there are 30s, 40s, 50s, they don't want to go on-- if they're barely willing to make any changes, they're not going to want to take a statin every day for the rest of their life, so sometimes I save that fight for another day and I try to get some of this stuff happening first. Paul, I don't know if you have a similar approach. But sometimes starting a statin is a challenging thing. And if they don't have a crazy family history or any known cardiac disease, then I table that and see what they can do with just the lifestyle.

Paul: Yeah, it sounds you're doing a patient-centered approach.

Matt: No, I'm just asking your approach are you just coming in the same--?

Paul: No, same thing. I think [unintelligible [00:42:13] and I think what we'll get into a little bit later in the case is that there are some lifestyle changes, just from an environmental standpoint are easier to make than others and sometimes patients are more ready for statin therapy than they are to make diet changes. It just depends on the individual patient. So, I think I'm just repeating what you're saying and you have to meet them where they are and make the changes that you need to make.

Matt: Well, Deep, let's move on in the case because I know we still have a bunch of other stuff we want to get through.

Deep: So, at some point during the discussion, it turns out that Ivan's daughter is the one who's really pushing this. And she has been working with the whole family to try to change the family's eating pattern. And she also saw the superfood sheet that you brought, which really explains what are legumes? What proteins can we substitute for the meats that we traditionally eat and the family bought into this. So, another quarter goes by and you discover that your patient Ivan has been eating a plant-based diet on the weekdays. On the weekends, they may indulge in some of the more traditional diet that they enjoyed. And so, you agreed to keep him off medicine. And finally, when you repeat labs

again, his A1c has declined to 6.1% and his LDL is 122. So, let's assume between six to nine months have passed from the initial diagnosis until where we are today. From my perspective, as an internist, what I want to know is what kind of results should we be looking for? How do we establish patient targets? And is there any difference when you're trying to do this through diet versus trying to do it through medication? Because if I put a patient on a medication and in three months the A1c had only dropped less than 1%, I might change what I'm doing. So how do I view this through the lens of medication that I've been taught to practice?

Michelle: Yeah, that's a great question. So, Ivan's A1c now, he's made pretty significant changes if he's eating, a pretty healthy diet Monday through Friday. That's five-seventh of his time. That's great. And I think that if his A1c has come down, a whole point that way, it's come down from 7.1 to 6.1 and he's not on medication, he's technically in remission, now. So, his is A1c is less than 6.5 off medications for more than three months. That's the ADA definition of remission from, the most recent one. I think that's fantastic. The question now is how do you sustain this, I was saying before and I think the best factor that we have is that his family is on board. And we all know that when you get the family on board that makes a huge difference, I will often actually have people-- have my patients bring, if they're not the one that prepares their own food or does their own cooking, I have them bring the person who does if they can to the appointment, so that they can just hear, even if it's a three-minute discussion, they need to hear it themselves. And a lot of times, they have health conditions too. And they're like, oh, wait, so this works for this too and then we end up talking about it, so that can be very effective.

Deep: It's so empowering to hear you use the word remission to describe hyperlipidemia or diabetes, I don't do that and I think it's something I'm going to take away from today, even in the research for today. But I want to go on to another case of a more motivated patient, who initially at least more motivated. So, Theo is a 66-year-old newly retired accountant who's ready to get back in shape. He has diagnoses of hypertension, heart failure with preserved ejection fraction, and type 2 diabetes, all are well controlled on medication. In the clinic, he weighs 235 lbs, measures 6'1”, with a BMI of 31. His blood pressure is 144/90 with a waist circumference of 40 inches. He wants to go on the Bill Clinton diet to lose weight and reduce his medication burden. He looked you up online because he saw your superfood map, Michelle. So how do you approach a patient like Theo?

Michelle: Yeah, this is someone who, unlike Ivan, this patient is coming in, already excited about having a discussion about dietary change. So, we're just going to zoom right into it. This is a patient who I will start by saying, I'm so excited that you want to learn about this, and I'm excited to talk to you about it. But I also want to be realistic about-- he expressed that his goal is to reduce his medication burden. So, from the very beginning, I want to be very upfront about which medications are on the table for reduction in which ones are not because I've had people come to me really excited about dietary change, and say that they want to come off their statin when that's for secondary prevention or something like that where you just wouldn't do it. Or, for example, this patient has heart failure with the preserved EF, maybe he's on SGLT2 inhibitor because he also has diabetes that's something you would probably say you probably would continue.

So, I don't want anyone to feel I don't want any patient to feel they failed in some way. Because I'm not stopping their medications when that's their goal. Now, a lot of patients can reduce like there are medications that we all know, if you dramatically improve your diet and lifestyle, you can come off without any-- they don't have end-organ damage, they're not going to affect the disease process. So that's the first thing I would say. And then I would jump into the usual I would say, okay, tell me what you ate yesterday starting from the morning whatever time you got up, what did you eat after breakfast, snack, lunch, dinner, what are your beverages, and so forth. And then I would start talking to him about weight loss, we're talking about diabetes, and we're talking about blood pressure, really the key things and so the hybrid evidence-based approach to that is adding more fiber to the diet, which is of course,

only found in the less processed plant foods, that's going to help with weight loss and blood pressure and diabetes, having more potassium in your diet.

So, eating more fruits and vegetables, that's going to help with blood pressure, reducing sodium in the diet, of course, for blood pressure, reducing saturated fats. So that's going to be your meats, your high fat dairy or cheese, all of that helps with cholesterol and it helps with improving diabetes and then reducing the added sugars. So, I'm going to start to understand what's his dietary pattern and just with Ivan, only this patient's more motivated, we're going to start setting some goals around what he wants to work on and he might be able to set more intense goals, maybe he's ready to do like, I going to makeover one meal a day, instead of just making having a serving of broccoli three times a week, I'm going to work on having a healthier breakfast every single day or healthier lunch every single day and then go from there.

Matt: Michelle, you mentioned decreasing saturated fat so the 90s fat was bad. We pumped all the food filled with sugar to make it palatable without the fat, now everyone's going keto, paleo, saturated fat or any fat all the sudden is good. So, I know this is a bit controversial, but how do you answer that? I'm sure patients ask you about this. So, how can we answer when patients are telling us tat's what they want to try?

Michelle: Yeah, this is so important. I'm glad you asked it, because I think that people get confused around fat and just you like said it's not about eating low fat. We tried that, we tried, well we didn't really do it. But the messaging came out to eat low fat.

Deep: We talked a lot about it.

Michelle: We talked a lot about it. But just like you said, when fat was taken out of commercial products, refined grains, white flours and more sugars were added. So, it was even if not worse. When it comes to any macronutrient especially with fat, it's not about how much is in your diet. It's about where you're getting that fat from. Are you getting it from healthier sources? Are you filling up on nuts and seeds and avocados, olive oil? Are you filling up on bacon, butter, foods that are very, very rich in saturated fat? And if you look at any guideline by any major medical society, they will, and there is so much evidence to support a causal relationship between saturated fat intake and LDL increase that right there should stop you in your tracks. If nothing else, you can literally watch yourself if you start consuming say a lot of coconut oil, you can just watch your LDL go up linearly. Coconut oil is really high in saturated fat. Same thing with butter. So that part's really not very controversial if you're truly looking at the nutrition science and it also has a huge role in diabetes as well.

Deep: So, as I'm working on my script and I'm thinking or how am I going to approach this patient, so we're going to do our usual stuff, we're going to say, walk me through your day, what do you eat in the last 24 hours. And in this case, Theo's a little bit more motivated, so we may go ahead and break it down for him, you would talk about, "Hey, these are better plant proteins, these are plant fats." Sounds like he may have some familiarity with whole grains. And you're going through this, but as Watto said earlier, I don't have that much time. So, if I don't have—well, walk me through if I do and I don't have a dietician on staff.

Michelle: Sure.

Deep: How often do you see this patient back? And let's say on the West Campus of Kashlak, we have infinite time and there are always openings in my schedule. So, what's the ideal scenario here?

Michelle: Yeah, I mean, I think if you're able to see the patient back yourself and follow up on the goals that you've set, it would be ideal to see the patient once every two to four weeks at the beginning, when they're getting started, and then you can space things out more. We haven't brought up dieticians yet. And that's really critical because I think if you can refer to a dietician, this is an amazing partnership, you tell the patient, how much it matters, how much changing their diet matters, and maybe give them some tips. And then your dietitian is the actual trained individual who can help them carry that out and make really practical recommendations.

For many years, I did not have access to a dietitian on my team at all. It's very recent that we had a dietitian. So, I've been doing this all myself. And I will say up until recently and I will say that the more you start doing it yourself, the more efficient you get at it, and it does become easier. The other point I wanted to make with what you said is I don't talk about macros with patients at all. I don't even use the word fat, protein, or carbs, because it's too confusing. If we have trouble understanding it and we're not counting it, I'm not going to expect a patient to do it. I just talk about the foods that I want them to eat more of or less of.

Deep: So, let's say we have the dietician, and we're doing pretty well. I've read about some physicians monitoring more labs and I'm used to ordering typically for a patient like Theo I would check a lipid panel and A1c. But a lot of patients have enthusiasm for checking inflammatory markers, hormone levels, vitamin levels, liver enzymes, at the beginning we talked about your credentialing and lifestyle medicine, versus what I think some of these other labs may be more commonly drawn in which are integrative medicine and lifestyle doctors. So, can you help us distinguish what we have evidence for versus what can be motivational? And finally, if somebody truly goes vegan, what we should be checking in addition to routine labs?

Michelle: Sure, I think there is definitely a distinction I think between lifestyle medicine practice and say for example, functional medicine, and really the point of lifestyle medicine or using lifestyle to help patients get healthier is really just that, it's to focus on the lifestyle changes and it really should not be a lot of ordering of tests. Your emphasis should really be on the behavior changes and how can I spend my effort helping you make these changes and understanding your life. So, personally I'm a minimalist, it sounds like you are too. And I will just send literally what is very obviously needed, repeating in an A1c when needed, lipid panel, basic metabolic if I need to monitor their potassium for medication reasons or what have you, and every now and then a TSH. But beyond that and I'm not checking much, and I really try my practice is to dissuade people from extra labs that I don't think are evidence based or needed, or worst of all, are going to be abnormal, and then we have to deal with them, but they're not actually consequential.

Matt: And I think just monitoring for the metabolic syndrome, do they have sleep apnea or symptoms of it, like a fatty liver, blood pressure, waist circumference, those sorts of things, you have a lot of data and then just how the patient's actually feeling is just so much good information that I don't know how to interpret those, so I don't order them. I do have a couple of patients that talk me into ordering them. And I just say just for disclosure when we get these backups, I'm not sure what we're going to do with it. But we'll work through it together, that's my approach.

Michelle: It's great.

Matt: Deep, what was the second part of your question for Michelle?

Deep: If somebody really does adhere to a very strict no-animal component to their diet, is there really any risk of vitamin or mineral deficiency? And, what is that true risk? And if there is one, how do we monitor it?

Michelle: Yeah, I think a fully plant-based diet needs to be well planned just like any diet. So, I think because-- if you're just eating a standard American diet, you're probably not thinking about vitamins and so forth. But you could easily have, we know for sure that most Americans are deficient in intake of certain nutrients. Similarly, when you're eating a fully plant-based diet, for sure you're going to need to take a B12 supplement, there is no question that we don't get B12 from plant foods and we get B12 from fortified plant foods, and that's an option but I just recommend a supplement. So, you're getting enough because no one should ever get too low in B12 for a long period of time as we know. The other nutrients to be thinking about, calcium is a big one. And I think in a plant-based diet, there is many great sources of calcium, you just have to know how to structure you're eating pattern around that. So, a lot of the low oxalate leafy greens so the kales, the bok choy that broccoli, collard greens we absorb calcium from those foods at a much higher rate than we do say from dairy.

And then all of the plant, the non-dairy milks, the plant-based milks that are on the market, the vast majority are fortified in calcium and we absorb it the same as we would from dairy. And I think protein is the other one that people wonder about a lot on a vegan diet. The key here is really you get enough calories and you're making sure you're actually eating enough food, and that you make sure that the food that you're eating is coming from more whole foods. Or if you're using say some of the meat alternatives or plant-based meats, those are very rich in protein. So, you're probably getting enough. I'm a big fan of recommending tofu and tempeh some of the less processed soy foods because these foods are very, very high in protein. They're very well tolerated by people in terms of, if they're just starting out, they don't have a huge amount of fiber where if you're eating a huge amount of beans, you're not going to feel well, you got to ramp it up slowly. And they're very, very good for us in terms of, they're linked to lower risk of breast cancer, prostate cancer, lower cholesterol, and they also have high calcium if they're calcium-set tofu, for example.

Paul: Just a practical question about access to these types of foods. So, the specific branch of Kashlak where I practice that, I think in general in metropolitan areas, the less money you make, the further away you are from access to produce. Not an insignificant proportion of my patients do their grocery shopping at the Dollar Store or at the bodegas where you have lower cost access to more calorie-dense foods. So, that being the case and whole foods being maybe cost prohibitive for some patients or even finding tofu might be a challenge, I'm just wondering, how do you adjust your script or are there any recommendations you make to patients who might have a little bit harder time accessing some of the foods that we're preaching tonight?

Michelle: Yeah, in my practice, and I'm working in the public healthcare system here in New York and I've had many of my patients are living at the poverty level and below and have very difficult access to food on top of that. So, first of all it goes without saying that we should, if we're going to be counseling on nutrition, we have to ask about food insecurity, like that's the first thing you have to ask about. And you can't assume anything and you have to find out if someone actually needs food. And then I think, once you establish that they have enough actual food, it's about obtaining nutrition security in getting healthy foods. So, some of the tricks that I often use are frozen vegetables are great. A lot of people don't realize that they are nutritionally just as good as fresh, and they are relatively inexpensive, and they don't go bad. So those are a great thing for people to have in their freezer. Beans, lentils, chickpeas those are some of the least expensive foods you could possibly buy and they're available almost everywhere. And they're also among the healthiest foods you could possibly eat. So, those are great.

Definitely with fruit, if you're eating in season and depending where you live, some of the less expensive fruits like the bananas or in some places, apples, those are great and berries can be very expensive. So, I'm very sensitive about recommending those if the patient doesn't have access. And

grains can also be very inexpensive, oatmeal, old-fashioned oats are not expensive. So, there is a lot that people can do. And again, maybe they're not going to get to the point where they're eating a fully plant-based diet if they don't have access to the diversity of foods that you would want in your diet that way, but at least they can start making some really healthy shifts.

Deep: And on the point about some whole grains being very affordable for diabetics, specifically, I know you have made this point in other talks and some of your writing that some of the more inexpensive whole grains including brown rice, quinoa, oats, whole wheat, and others can be both affordable and actually counter intuitively improve glycemic control. So, we're running out of time here, but I think this should be a great area for those of us who are interested to read more on our own. Can you just describe that a little bit?

Michelle: Yeah, I think that a lot of people think about carbs as being the primary problem in type 2 diabetes and insulin resistance. When in reality, first of all, carbs can mean very different things. It can mean, lentils or lollipops as I always say, or fruit or fruit loops. First of all, we're talking about, if we're talking about healthy carbs, those are not the cause of type 2 diabetes, and they're actually part of the solution. The evidence is very clear that when you're consuming a diet that has healthy carbohydrate foods in it, you can actually help improve insulin resistance. And that's in part because of all the fiber in these foods. It's in part because they're antioxidant rich, and they reduce inflammation, they help people lose weight, which we know is really the primary driver of insulin sensitivity. So, what I see in my practice over and over is the more people consume these healthy carbohydrates, and more, of course, more vegetables and more plant sources of protein, their diabetes improves. And then when they eat the carbohydrates, their sugar isn't going as high because they've addressed the underlying issue of insulin resistance.

Matt: Yeah, as in continuous glucose monitors become more, easier to get a lot of my patients are wearing them. And they're just figuring out what foods are spiking their sugar, but I do just tell patients, if you're not sure about a food, you can always run the experiment, you can eat it and check your sugar an hour or two later and see what happened. So, I usually ask them to check a postprandial and see what it is.

Michelle: The problem is that that rewards bacon, which is might be somebody might want that reward.

Matt: Oh, in my hypothetical you were talking about they're like, can I eat cherries, and I'm like I don't know, eat some cherries, check your sugar, bacon-wrapped cherries, Paul.

[laughter]

Michelle: And you can also lower your blood sugar response to any food by adding some healthy protein or fat. So that's a trick that I like to tell patients if you're having a really sweet fruit, you're having mangoes and you know your sugar is going to go up, eat it with some-- eat a few peanuts with your mango and your sugar won't go as high.

Matt: So, the last question similar to what we're getting here with the carbohydrate thing. Every culture has their carbohydrate that they love, my mom's family Italian, the white bread like the crusty white bread, the pasta, and some people like rice, tortillas, how do you work with the cultural traditions of people and get them to start eating some of these, we call them Green Box foods the ones that we've been talking about and trying to push as a majority of what people should be eating.

Michelle: Yeah, I think it's really important to honor what people's cultural traditions are and I'm not in the business of telling people you got to throw your culture out the window so that you can eat this diet.

Most cultures have healthy foods, a lot of healthy foods within their cultural tradition. So, it's just a matter of finding those. Often, I mentioned before I'm on the interpreter phone a lot, I have patients from all over the world and a lot of times I'm not that familiar with their cultural background. So, I'll literally pull up, I'll be on, I'll do a Google search around, what are the basically beans or grains? And I'll see what comes up and I'll have them tell me which of these foods do they recognize and like and tell me what's the dish that they like with those, and we start from there. So, we're finding healthy foods within their cultural tradition? A word on tortillas. So, tortillas get like the worst rap? I mean probably second only to potatoes.

Paul: I'm sorry, did you say the worst rap? Sorry, I can't hear you.

[laughter]

Paul: That is shameful. Sorry, carry on.

Michelle: But tortillas are actually if they're made from corn and they don't have a lot of additives, they're absolutely, they're fine. It's just the quantity. I'm never going to tell someone who's, many of my patients are from Mexico, for example, I'm never going to say stop eating tortillas, that's terrible. I will just say, let's balance your plate, your plate has to have more vegetables, let's add some beans to your plate and have some healthy fat like avocado and have two or three tortillas. And that's absolutely fine. And people get healthier eating that way.

Deep: Michelle, this has been terrific. And I think all of us have some new scripts we can use with our patients and hopefully some new additions to the treatment plans that we're offering our patients. Is there anything you'd to say in closing or any take-home points, you want to make sure you emphasize that you feel you haven't gotten a chance to yet?

Michelle: I mean, I think I would just say I hope that everyone listening has a sense of how important it is that how important our eating patterns are for our health and feels a little bit more interested in perhaps trying talking about this with their patients. And I can guarantee I started from not knowing anything, and I just winged it and then learned more as I went along and it's been one of the most rewarding things I've ever done in my practice. So, I hope that people feel inspired to give it a try.

Paul: This has been another episode of the Curbsiders bringing you a little knowledge food for your brain hole. Great, get your show notes at the Curbsiders, this is a whole food episode, guys, this was your time to shine get your show notes at *thecurbsiders.com*. And while you're there, sign up for our mailing list to get our weekly show notes in your inbox plus twice each month you'll get our Curbside errs digest recapping the latest practice-changing articles, guidelines and news, and internal medicine.

Matt: We're committed to high-value practice changing knowledge and to do that we need your feedback so please subscribe rate and review the show on Apple Podcasts or on Spotify. You can also email us at *askcurbsiders@gmail.com* Yes, Paul that's a new email address, *askcurbsiders@gmail.com* And a reminder that this and most episodes are available for free CME through VCU Health at *curbsiders.vcuhealth.org*. I wanted to give a special thanks to our writer and producer for this episode Dr. Deep Shah and to our whole team. The Curbsiders is produced and edited by the team at Pod Paste. Elizabeth Proto runs our social media, Stuart Brigham composed our theme music. And with all that, Paul. Until next time, I've been Dr. Matthew Frank Watto.

Deep: Thank you for joining us, signing off Dr. Deep Shaw.

Paul: And as always, I remain Dr. Paul Nelson Williams. Thank you and goodbye.

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