Paleo Solution - 329

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Robb Wolf: Hey folks Robb Wolf here, another edition of the Paleo Solution podcast. Super excited for today's guest Dr. Mark Cucuzzella is a professor of medicine at Western Virginia Medical School. He is an avid runner and a running coach and he is doing some really fascinating work in developing new curriculum for bright-eyed, bushy-tailed, new medical students. And Doc, it's a huge honor to have you on the show,

Dr. Cucuzzella: Hello Robb. It's a privilege to be on the show. I've listened to many of your podcasts and learn something new every time I tune in.

Robb Wolf: Well great, I always learn something new too, which is kind of why I enjoyed shifting this to more of an interview format, maybe a year and a half, 2 years ago. I definitely got tired of hearing myself talk. So even though I'm doing a fair amount of talking now but usually it's asking questions that I'm curious about.

You know that may be an interesting point too. At the beginning of this podcast, we focused the bulk of the content around Q and A, and that Q and A was very much health-concern driven, performance driven, and we still get questions around that but I've got to say maybe 50% of the emails that I get these days are career questions. You know, what should I do? Should I go to medical school? Should I become a registered dietician and things like that.

So it's always interesting for me to talk to folks that are in these different fields and kind of check temperature on what drew them to a particular path. What they are enjoying and not enjoying about it, how that seems changing. Can you talk about kind of your background heading in to medicine and how that scene has changed over time?

Dr. Cucuzzella: Yes, I'll give you the short version. I've been a family physician now Robb for over 20 years. I graduated college University Virginia in 1988. I got interested in medicine mostly as an often injured runner. You know we did all those traditional stuff most of it over training and trained till you're hurt and no pain no gain and that was the mantra. I was on the college track and cross-country team and we had a very innovative team physician named Doctor Daniel Colland, who's actually the first physician to put runners into water to do water running.

And he has an office now and is fascinated by, he was kind of like a mad scientist. He would be putting these soft insoles in to a toaster oven to try to do things with your feet, putting runners in pools. You know like they were doing horses and I said this is cool.

He took an hour with every patient. You know so in the trainer's room traditionally if you had an injury they'd put some ice on it, inject you with something, tell you not to run, brace it up. But we were just fortunate to have Dan as our team physician.

So he kind of did the opposite. He would like de construct why you got hurt and that led me into medicine. I had no doctors in my background and my family and that kind of led me into military medicine and family medicine because I really enjoyed kind of that activity side of health.

You know creating health and maintaining health versus treating disease. So it led me to family medicine which seemed the best avenue to try to promote that. At least kind of a name that was the purpose of being a family Doc was to guide a family to health.

And in the military I was a flight doc. So you know your ultimate family was aircrew and they are your family, and trying to keep these people healthy. So musculo-skeletal injuries, exercise science was my initial love in medicine.

And about 5 years ago I got channeled into a project for the air force when they tightened up the screws on the fitness test. And what they did was General Schwartz came on board about 6 or 7 years ago, and the military whatever service branch you're in, if you're a military member listening here, you know that it kind of goes to bike test, the step test, the run test you know? There's always the latest fitness tests and there was a lot of kind of grief about what they were doing in the Air Force at that time with this bicycle test.

So the General came on board and said well I'm just going to make everyone run. And if you fail the run test you're out. So it was pretty simple, but the problem was that about 30% of people failed the test now. And I've been doing a lot of work at that time with running injures, and then the early minimalist movement and that's another whole story, is the foot and minimal shows. But what this really led me to was the discovery of nutrition.

Because as I looked into the data of why people were failing the fitness test, you know my bias at the time was well these people just need to

exercise more, get off their butts, looked at the data. They had high BMI's for the most part of people failing at least traveled with that. And so my bias also looking at that data was well they just must eat too much. So I was kind of wed in to the calorie in, calorie out hypothesis but I had 6 months to create a program.

So I ran across this article just by chance. It was a 2002 New York Time's article by Gary Taubes. It was "Maybe It's All Been A Big Fat Lie," and I read that article and I read it again and then I bought his book and then I looked at my own life and my labs which was wild. So my family has heart disease, type 2 diabetes is in my family. And I was waking up every morning at 3 in the morning every day to have more cereal. I was eating probably at least a hundred grams to 200 grams of carbohydrates every 3-4 hours throughout the day consistently and my fasting glucose at the time was in the 120s.

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Robb Wolf: Holy smokes.

Dr. Cucuzzella: But I was actually winning marathons. So people, you know come in as a patient for your physical and you kind of know you're well right? You know you're fit, you must be healthy. And after I spent about a month reading of every single thing I could, I'm like, "Oh my gosh, I've got pre diabetes." And I'm got insulin resistant and that was my last bowl of cereal.

And I started to look at why people were failing the test, and I'm like well these people aren't lazy. They're like me. They're working their butts off, they're senior master sergeants loading planes. You know these people are not lazy people and they're not gluttonous people. They just have metabolic syndrome. So I started to apply this clinically in my practice, low carbohydrate for remission of metabolic syndrome diabetes, prediabetes and obesity. And that just opened the rabbit hole. I mean my basement now is filled with probably every single book ever published on the topic.

So I did that project for 6 months and then I came back to West Virginia University where I'm a professor. So I teach medical students, teach residents who are both of them are you know? Doctors in training. But we also practice medicine so we're not classroom teachers. We're on the job training teachers. So I started to do this with hospital patients and started to catch momentum where gosh one at a time people started doing this alternate hypothesis. Nurses started doing it, losing weight, and we applied for a grant, an internal grant through West Virginia

University 4 years ago for a program to teach medical students nutrition, which involved them actually going into the kitchen.

And there was sort of covert metabolic syndrome training, because the textbook at that time we used was Robert Lustig's, "Fat Chance" and his "Fat Chance Cookbook." so that was the bible, so that was the book. So here's your nutrition text book, Lustig's book. You know they watch the videos. At that time he had actually just produced, which I showed a patients all the time. It's called "Skinny On Obesity." It's a one-hour series and maybe you can put a link on the show notes for that. But it's animated. A patient could watch this and explains insulin resistance, metabolic syndrome.

So we started the students at day 1 to understand nutrition, Not just for pleasure, joy, "healthy eating." This is an intervention for probably 80% of the people they see medically. Because if you look at my states, just the people who aren't in the medical clinics. So this is just out on the street, you know we probably have 60% now pre diabetes, 40 – 45% obesity. And that's the average population.

Now if you look at a hospitalized patient, you know they're there for usually a diabetic or metabolic complication. So it shifts to I would guess in hospitalized patients other than an appendicitis, in an 18-year-old, the majority of them have metabolic syndrome pre diabetes.

So that was 4 years ago and we've been teaching this curriculum. It's been presented nationally. We're involved in lifestyle medicine interest groups now. So we're trying to circulate this and there's interest amongst all major medical schools now to add nutrition as part of their early curriculum.

And my goal, Robb is to make sure that this, it's still the alternative hypothesis. So if you go to many lifestyle medicine type of conferences, it's still teaching the same mantra like reduce fat, reduce saturated fat, follow the ADA guide lines, burn more than you eat. So my worry with all of this was with good intention. We're still pushing out things that I don't think foundationally are evidence based and practically don't work for people. So I'm like the fly in the soup at these conferences speaking just from personal experience. And evidence of outcomes of our patients as well as the current literature which supports. If you have metabolic syndrome, obesity type 2 diabetes, you know the default diet the first approach should be low carbohydrate.

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Robb Wolf: Right, right, that has seen…

Dr. Cucuzzella: Not for an 18-year-old football player necessarily but I'm talking about it's a different group of people.

Robb Wolf: Right.

Dr. Cucuzzella: There's 2 plates you know.

Robb Wolf: Right, right, absolutely. You know it seems so crazy to me, you know if one has a sunburn then we are at a state of excessive UV intake or the ability to cope with that or what have you. And usually the recommendation is reduced UV or sunlight exposure and if were in that situation where we are experiencing toxic levels of glucose, it really seems like it would make sense to reduce the glucose load, you know? The glycemic load.

But that has just been such a controversial topic and I think some of it is that we've, I think it's always really good to get in and try to figure out root mechanistic cause. And I think that that maybe is to some degree almost been a distraction because we get wrapped up in these metabolic word studies where it's kind of like well kind of looks like calories in, calories out or really what matters but what people don't live in a metabolic ward. So we have to think about the neuro regulation of appetite, and you know how do we cause people to actually spontaneously reduce caloric intake and typically by extension of carbohydrate load. And so I really think that if we shifted gears and focused on clinical outcomes.

Which I mean every single time that we've kind of compared like a Dean Ornish versus a Zone versus an Atkins type of invention that lower carb intervention ends up winning again and again and again.

Dr. Cucuzzella: Yeah, I agree. I always, I think the beautiful thing is when you can actually have a patient in the hospital because in 24 hours you can show them immediately you know what I call it option A, you know? So just like any condition as a patient you should be given options. And each of us is metabolically unique. So I always go in and present the options you know so here's an option, that might allow you to actually put your diabetes into remission or reversal. This would take some discipline you know? Take or change your lifestyle. I can explain it on a napkin to patients.

So this is, I keep it really simple, really simple at first. And if they say that makes total sense I'll use analogies like you know the backpack analogy where the backpack's the fat and you know you got some sugar in your

pockets. And you know when insulin's up, you can't access the back pack or the Steve and Finny truck analogy. But it depends on who they are. There's so many, you know there's checking account you know you've got the savings account versus the wallet, but they get it, it's pretty simple.

And I've not yet had a patient after you explain it simply say look I really don't wanna try that. Just give me more insulin and let me eat the way I'm doing and feel just as sick as I do today because I'm in the hospital.

So you give them that option A and then you can give them that option A, you can make immediate intervention while they're in the hospital and they'll take… We had a lady like 2 weeks ago take her insulin use from 500 units a day from a sugar. She left the hospital at 48 hours later on 40 units of long acting in the morning, no short acting and sugars bellow 200. And actually feeling energy in 2 days.

You know usually, they're still in that kind of flu- ish stage but she's like wow, I can do this. And you know I've been on the phone with her every few days and she's actually…sugars are in the hundreds now and she's done the 20 Lantus. I'm pretty slow to taper that Lantus off in the morning because these people have such, they have such pancreatic stress.

Robb Wolf: The dawn phenomenon? Okay.

Dr. Cucuzzella: Yeah and just if you've been insulin resistant for 20 years and your pancreas is throwing insulin out in you know massive amounts. You know there literature's kind of sparse on those but you probably need to let that pancreas recover you know?

So even if they could get away with stopping their insulin entirely, I want that pancreas to recover. So giving them just a little bit of a long acting in the morning, will allow that pancreas to not have to overwork while they can reverse the insulin resistance which is what they are trying to do.

Robb Wolf: That's fascinating, Doc before we started recording so you described part of this but could you do kind of a compare and contrast between your option A which is recommending a lower carb diet for someone that comes into your hospital with a fasting blood sugar of 500 versus what happens under well-meaning but kind of standard care of guidelines? So you've described a woman who went from 500 to 200 in a matter of 48 hours.

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Cut her insulin usage by 10 times if I remember from 500 units to 48 units I think you said?

Dr. Cucuzzella: Yeah 40 units long acting.

Robb Wolf: So 40 units long acting. So what's the compare and contrast there between the methodology you are using people like Jason Fung, David Perlmutter, some of these docs that are actually implementing some protocols like this versus what's happening in unfortunately 99.9% of other situations?

Dr. Cucuzzella: Yeah. So what traditionally happens in the hospital is someone would come in with hyperglycemia and you know 500, 600, 700 blood sugars and we all no matter what they do to option A which is my method or traditional we want to get that sugar down. So we always give these people short acting insulin whether IV or Novalog or a short acting subcutaneous just to get that hyper glycemic and glucagon over response, the whole catecholamine response. So we just wanna just put that fire out. But the problem is unless you get rid of the carbohydrate, you're just stuffing that sugar in to your body fat. They still feel sluggish and it's going to bounce right back.

So we do that because sugar of 500 is not good, you know it's dehydrated they usually need 3 to 5 liters of fluid. So first goal is to get them down to 250 to 200. Just get them to the land of the living. So then I go in and say here's our options. We can either give you more insulin to bring your sugar down, which is obviously failing because most of the time they come in and they're using more and more insulin and they're getting higher and higher and higher.

So they probably have either high pancreatic fat which means the pancreas isn't even seeing that insulin. So glucagon's going haywire. So they're in full metabolic disaster and you cannot just keep stuffing more insulin into these people. You can make them… you could give them 200 units of insulin and tomorrow they might be 200.

But then 2 days later and the patient has no control, they don't get it, they have no control. They're scared. They have no ideas why their sugars are so high. They're using massive amounts of insulin plus you know how much that stuff cost?

Robb Wolf: Right, right.

Dr. Cucuzzella: You know a hundred units of Lantus it's crazy. It's like 25 cents a unit so they're just tearing up their retirement check and injecting it in to their belly and their sugars keep going up. So I explain to them that okay so what you need to do is either we treat the fire or we treat the smoke.

You know so we got to put the fire out which means we've got to reduce your insulin production and then increase your insulin sensitivity. So immediately is very strict low carbohydrate you know diet and we actually have or took a while to get here kitchen to understand what a 10-gram carb per meal is.

And they're still kind of hit and miss. But God bless them, they're really giving it a good effort. They'll bring the meals up and the person from the kitchen will like Doc how does this look today and I'll look at it and they got some like fruit cocktail on the side. They didn't realize that that was carbohydrate.

Robb Wolf: Right, right.

Dr. Cucuzzella: It's funny the patients, Robb, the patients get it. Like they will come to you and say look I had to take this off me. They gave me mashed potato or something. So you teach the patient so well. I give them the Tim Noakes nooks food list from Real Meal Revolution and I have it all in 1 page like the green light list. And you know I just tell the patient look if they're serving you something and it's not on this list, don't eat it. Or push the button and I'll come look and we'll just take a look at this…

Robb Wolf: And give you a couple of pats of butter to even it out.

Dr. Cucuzzella: Exactly you're educating them and it's a great opportunity to educate them. So it's a combined intervention. You know that dietary services have to produce the right meal, the patient has to understand what they're putting in their mouth.

They can't have their friends bring the stuff in. And then usually within the day we see wow, I just reduced my insulin load by this large amount and their sugars are better, which is actually paradoxic you know if you had looked at traditional medicine, you know diabetes does not have a spontaneous remission.

Robb Wolf: Right, possibly because we're treating incredibly bad.

Dr. Cucuzzella: Exactly. It's like well look, you just put it into spontaneous remission. It's real and I check, I carry a glucometer around with me, and I'll check their

sugars if we can. And sometimes it's difficult to get nursing orders to do sugar checks because traditionally we do this thing called sliding scale which is feed carbohydrates give insulin to match the carbohydrate.

Robb Wolf: Right.

Dr. Cucuzzella: Which I can walk through the protocol that we do for this. But we eliminate that word sliding scale because for a type 2 trying to reverse their disease, there's no such thing as covering your carbs with short acting insulin, because you're not eating sugar or starch.

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So that's off the table. We do use sometimes what's called a corrective. So if you look at types of insulin, we have a basal which would be a long acting insulin. Now I prefer and physiologically a lot of patients come in and they're on like 2 shots of long acting or a night long acting which will trap the patient in to the corner. Because if you have insulin up at night, you can't… Insulin inhibit lipolysis that's non-negotiable. So if we're hoping that this patient can lose weight and mobilize body fat but were giving them long acting insulin at night you know it's insane, it doesn't work.

It works for plan B if you just want your sugar to be low with more insulin, but it doesn't work to reverse them. So I'll immediately get them to put out long acting in the morning as a basal, now if you're coming in of a sugar of 600 or 700 they still may need some corrective doses intermittently through the day, to try to get them to 200. And that's just okay your sugar's 300. Let's give you 10 of Novolog, 20 of Novolog, whatever it takes depending on how insulin resistant they are, just to get them corrected so that counter regulatory response doesn't kick in.

You know so each person's a little bit different but it's very predictable. It's almost like when you manage a DKA, it's one of the most predictable things because it's physiology, you know? When you put someone on an insulin drip and they're in true type 1 DKA you know? And we have flow sheets that work magically every time, if you follow them.

Robb Wolf: It isn't like decompression tables and stuff like that, like it's been pretty well vetted out, yeah.

Dr. Cucuzzella: They don't eat carbs, you know that they're going to get better, it's crazy.

Robb Wolf: Right?

Dr. Cucuzzella: And then, the patient sees it. So I don't have this fear like you have someone come in in sepsis for example, you know full-blown bacterial sepsis. You give them and antibiotic and you pray, you know half those patients would be dead tomorrow. You have no control, right? That's all you could do, it's do your best and hope that the grace of whatever higher being you believe in is on your side. But this is predictable so this is actually very enjoyable to deal with because as you know where the car is going.

Robb Wolf: It's a bit of an engineering problem instead of a hope and a pray that's awesome.

Dr. Cucuzzella: And then the patient's in charge which is cool.

Robb Wolf: Right, Doc I don't want this other series of questions I'm thinking like 80 different things here. But I don't want this other series of questions be too leading. I'm trying to figure out how to couch it without goading a particular response but so much of medicine has come down to this kind of formulaic process.

Standard of care, ICD10, insurance reimbursement, all these stuff is very centrally governed. And my senses you know in observing you know I'm of the board of directors of a clinic here in Reno. And so we've seen kind of this ratcheting process that has occurred since the affordable cataract has come online. Well you really have to work within these very tight parameters in order to get reimbursement you know? Things need to fit certain guidelines and whatnot.

Dr. Cucuzzella: Yes.

Robb Wolf: And what you're doing is completely antithetical and outside of standard of care. But I would argue and I think you would argue and I think science would argue that this is really you know the direction that we need to go with this. How the heck?

I feel like we've stuck our neck in to a noose. That noose is tightening in this regard. You know there's, it's fascinating that a number of years ago I was like one of…I think only person crazy just saying you know farm subsidies are driving junk food and here's the way the mechanism goes and this junk food gets fed back into our food system and somehow it gets you know? American Diet Association endorsed for like Snackwell's and stuff like that. How the hell do we extract ourselves out of this problem?

Dr. Cucuzzella: Yeah that's the million or billion-dollar question, Robb…

Robb Wolf: Right, I mean so you generally agree with all these stuff. So I'm not totally a freak?

Dr. Cucuzzella: Yeah. I think it is what it is you know? You can't fight that gorilla but patients can heal and within the system.

Robb Wolf: Right.

Dr. Cucuzzella: Because they come in and they have a diagnosis. So I mean they're in the hospital or if they're in a clinic, they don't have to be in a hospital. They have diabetes. They have obesity. They have hypertension. You know this is an intervention, so you can code for time spent counselling so yeah it is all backwards Robb. I mean were paid and reimbursed by what we do. By the "care" we give and what intervention we give not by the outcome. And there's other discussions in Washington about quality based care and outcomes based care and reimbursement. It's not on my radar because I just show up for work every day and I want to help people.

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Robb Wolf: Right.

Dr. Cucuzzella: So that's how we're working within the system but we're using counselling and nutritionist as a therapy. And you just document specifically what you did because you're reducing their medications not adding medications. That's what's called like if you're a health care biller medical management which is what we reimburse on when we fill out our little forms. It doesn't mean add medicine. So if I'm stopping insulin or reducing insulin on a patient that's medical management so I like that.

Robb Wolf: And that's way in for everybody.

Dr. Cucuzzella: So the drug companies don't like it but it fits and it's no kidding, we have to go there. I mean we can't… You know you've got a young 1 now and I've got 2 kids, you know the next generation will not be able to afford to live in this country with the cost of diabetes care. I mean it is the elephant in the room.

Robb Wolf: I mean like the congressional office had a projection that by 2030 something like 300% GDP would be allocated to diabesity related issues alone and that's not filling a single population of firing a sing bullet you know?

Dr. Cucuzzella: Yeah I'm still in the military. You know people we're spending too much there. I mean that's a sniff compared to what we're spending on diabetes. And that you know all of the metabolic syndrome. So if you go back to Ravens papers, we're not just talking about diabetes. Insulin resistance drives pulmonary disease, sleep apnea, hypertension, stroke, Alzheimer's, that's the most expensive illness right now. You know it's associated with type 2 diabetes. So we don't know what causation association but it travels together.

Robb Wolf: Right.

Dr. Cucuzzella: You know I'm not sure if it meets all the Bradford Hill criteria but it's a pretty strong association. So look at all of these chronic noncommunicable diseases, and they all travel with the western diet. Yeah but we're doing a great program here. One of the programs I'm just most proud that we've done here and I've gotten the community really behind it, is we double at farmer markets we double snap. We got a grant for the USDA and through our local hospital to double snap which are food stamps. So people in my community can go to the farmer markets and if they have 20 bucks on their EBT card it becomes 40 bucks. And they can go and they can get vegetables, they can get eggs, they can get meat, they can get cheese, they can get all those farm products. And you always get an education too when you go to a farm market because the farmer there tells you what to do.

Robb Wolf: Right.

Dr. Cucuzzella: Like I don't know, I'll look at something green and I'll be like well what do I do with this? They'll tell me put olive oil, salt rub it up a little bit and it's good. It's like yeah it's really good.

Robb Wolf: Yeah, that's so incredible. That just dovetails into this other thought that I've had. So I'm frequently assailed by people particularly when we do public speaking events. They're like you know we need to take this to congress, why aren't we talking to our politicians?

I'm just kind of like I don't really think that that's the angle that we really need to take this. It needs to be decentralized, it needs to be grass roots. We will have solved the problem in the day, after we've solved the problem then all the guidelines will change. And that's really been my gut sense. And I'm kind of one of these wacky libertarian leaning, markets centric, kind of people and man, the pushback I get from that, people wants this to be this centralized, top-down approach and if the government gets it right then it's okay. But I'm so horrified that they're

going to get it wrong because it seems that they get it wrong all the time you know?

All these incentives are horribly misaligned and then here you folks are instead of beating your head against the wall and trying to change the system at a macro level You're just affecting change in your community ranging from educating the folks that come in to the hospital.

Helping the folks that want help. Doing the best that you can with the folks that just wanna continue what you're doing and even to the kind of social welfare side of this thing of people who are living on the margins who are usually make an educated economic decision to eat highly processed food because you get more food relative to their dollar and making it economically viable for them to go get fresh, locally produced produce and make a better nutritional choice that's amazing.

Dr. Cucuzzella: Yeah. We are working top down too. So I'm part of a group called Nutrition Coalition and that's a Nina Tai Shultz is the ring leader of that. And we actually got a petition circulated before the final pass of the 2015 dietary guidelines for America. You probably discussed those on the show. So they actually came out and said fat and cholesterol are not nutrients of concern in the 2015 guidelines. But when you went into the practical applications side of that document it still told people to eat low fat milk or I'm sorry drink low fat milk, and have a low fat diet. So it's happening.

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So what are group did through that petition is that it sparked an independent scientific review which is now going to happen before the 2020. So again, this is an independence scientific review. So they're opening up. They used to just look at this one kind of pot of this one library. They called it the evidence library which they went into to try to formulate what the best science was for the US dietary guidelines for America. But the problem is that that's missing you know like 80% of the relevant papers.

So now in this independen0t review and Nina can give you more about that, they're going to open up to full evidence and independent reviews, no conflicts of interest. So someone like myself can't be on that committee because I might have a bias you know? But we'll see what happens, I believe if they, five years from now that food pyramid you know like that south park episode where they turn upside down.

Robb Wolf: Right.

Dr. Cucuzzella: Many of your readers and watchers have probably watched that episode, it's south park food pyramid upside down, that's probably all you need to know.

Robb Wolf: Right, right.

Dr. Cucuzzella: I show it to my medical students and they love it, after they've seen little of the science and say now and I actually have it on my phone in the favorites part in my iPhone.

Robb Wolf: Great.

Dr. Cucuzzella: So I'll show that little video you know, because you start laughing with people. And if you can't laugh at yourself and laugh about all this and show that video on my phone, and then that kind of nails it, it's like 2 minutes of South Park. And even grand ma gets it when she's never heard of South Park.

Robb Wolf: Right, right and you know it's funny if you really pay attention to your biochemistry class, all of that stuff makes a ton of sense, you know? It's really interesting how far afield we've gotten from all that. I'm curious on the dietary intervention side, are you monitoring ketones at all? Like do you want people in a ketogenic state? What's the kind of carbohydrate threshold?

Dr. Cucuzzella: Not for my hospital patients Robb. For one, they don't have access to the money for the strips. You know so I'll put them on one of the variety of types of diets depending on what they wanna do and you know how adherent they can be you know? So there's probably a small group that right away without real good support and education could go on a true ketogenic diet. You know because I leave every patient my cellphone and my email just to bill because we don't have systems or a place that allow coaching. This is real deal.

So to go on that really low carb diet you know there's some risk in coming off these meds. So that group I keep really close contact with them and they probably… anyone that's losing you know 50, 60, a hundred pounds you know which patients are. We've had patients leave the hospital and have lost that amount of weight and we've got hospital staff lost that amount of weight. They probably are on a ketogenic diet without knowing it because they wake up they have energy.

You know? They write you back and then I'm cleaning the house at 4 in the morning. You know I don't know what's up with that you know? But we're not checking ketones.

And then there's a group kind of on the fence? That I probably, I know that I try to get them that low that they'd probably won't to hear to. So I'll just get them on probably 50 to a hundred grams of carbs a day. And that will start giving them greatly reduced on their insulin use. Feeling better, losing weight and that's really simple. If you just get rid of soda, all sugar sweetened beverages and junkfood, which is basically anything whiter than cauliflower. I mean you make it really, really simple for them.

And okay we can go through the list like a Q and A and quiz. They'll ask me a food and I'll say is on the list? Yes, no, and they get it really quick because they'll list will every single thing they're eating, like no it's not on the list, it's not on the list.

But what you do with them which I think really has power is that this isn't restrictive. Because if you just tell them what they can eat, but then we go to the green list do you like eggs and like Oh my gosh I love eggs.

Robb Wolf: Do you like bacon?

Dr. Cucuzzella: Yeah do you like bacon? I live in West Virginia I mean these are not vegetarians so.

Robb Wolf: Right, right.

Dr. Cucuzzella: So I tell them to go on an Ornish Vegan you know? 10% fat, that macro biotic diet or something, I mean they can't even find that food here.

Robb Wolf: Right.

Dr. Cucuzzella: If I tell them that this is the stuff that they were raised on and if you go back into… probably every single Robb in their family history, it has that last well person that they can remember. Like who was it in your family or my family, who was the 80-year-old or 90-year-old farmer that was robust up until the today they just lived long and droppped dead, and they weren't obese, weren't on medicines. So you kind of get each patient to kind of think back to that person in their genetic lineage and how did that person live.

[00:35:07]

And usually its someone who lived pretty basic. You know they weren't living off of just fish or plants. They just ate a good healthy farm diet. They just didn't have any processed foods.

Robb Wolf: Right, right and even the you know the flower was relatively unmilled. They got up when the sun got up. They had sun on their skin. They exercised. They had community. We understand the microbiome interactions so you know there's just a lot of pieces that just were working quite well. And then through all kinds of great innovation and also good intention we've really messed that picture up pretty epically,

Dr. Cucuzzella: Yeah and I don't complicate it so I'm not going the micro biome with my West Virginian… [audio cut out]

Robb Wolf: Right, right, right.

Dr. Cucuzzella: In the end of the day napkin drying, is it on the list yes or no, and give them my contact. And I think as physicians you know the students in residents, they're doing this because they're like wow you gave them your cellphone and I'm like of course. If you're going to try to help someone out of the corner, I mean these are really easy exchanges. We all carry our phones, you know?

So I had a guy he emails me almost every day his sugar was 700, 3 weeks ago in the hospital. Just had a liver transplant, type 2 diabetic, sugar 700, using probably a hundred units of insulin. Now how long do you think that guy's liver transplants going to last in that' hyper glycemic state?

Robb Wolf: Right.

Dr. Cucuzzella: It's like he's going to die. So this guy's all in because he knows oh my gosh I had a liver transplant. I'm just going to try this it makes sense. And he just wrote me yesterday, I had him down to 10 of Lantus tend Atlantis in the morning because he was really adherent to the diet and he's like man I'm getting low.

So I was thinking he probably needed to be on at least 10 of Lantus Atlantis for extended period of time. So he is off insulin as of today with sugars no higher than 140 post granule. And he's exercising again and he lost 20 pounds 2 inches off his waist.

And what's cool is you know his blood pressure's good but he believes he can be a well person again which he didn't believe when he came in to the hospital with a sugar of 700. He felt like he had no control, he didn't

get it. But now he believes he can be well again and I think if you believe you can get well, you can get well. When we don't tell patients option A, that they can get well, there's stuck and they're just you know a pawn of medicine really. We need to tell them they can get well.

Robb Wolf: Wow, Doc can we...

Dr. Cucuzzella: What does health mean in health, what's the first 4 letters of health? I mean I'll write that on a napkin. What are the first four letters? I want you to heal, not manage or treat. You know foundationally the body is designed to heal itself, for these chronic metabolic conditions you know?

Robb Wolf: Right, right.

Dr. Cucuzzella: It's different military trauma.

Robb Wolf: Right, right, right, gosh it's so incredible. So you've clearly just struck on this chord of keeping this incredibly simple. And you know meeting the person where they are, trying to make it fun. And empowering them and just saying, "Hey, step with me down this path a little bit, when you see the results then you can see if I'm a coop or if I'm really on to something here."

Dr. Cucuzzella: Just try it, 2 weeks, we tell them to do it for no more than 2 weeks, because they're going to see results usually in 2 days but…

Robb Wolf: Right.

Dr. Cucuzzella: You give them a limited time. The other important thing Robb is I always make sure that who's cooking for you. So if I take an hour with grandpa and he doesn't cook a thing, you know he just says honey can you just bring me my lunch or something. So you got to find out who's cooking for that person, who's shopping for that person? Because if they're not engaged and not understand it then it's doomed to failure.

Robb Wolf: Right.

Dr. Cucuzzella: So it is a whole team thing you know? Our nutritionist dietician in the hospital is starting to use this therapy too. That was you know a journey to track because there taught and they're kind of held to the ADA guidelines. And for them to come out…

One of my handouts actually has 2 plates. It has the ADA plate and it has my plate. So the ADA plate you know it has a quarter of starch and it says

each 3 starches per meal, and then in my plate I have these big red X's over it, and I give that handout to the patients. So we are telling the patients, "Look what you're doing here is against the guidelines of the ADA but you're the patient you decide right?"

Robb Wolf: Wow.

Dr. Cucuzzella: Or the experts disagree. The ignorant are free to choose so they say I'm a family doc right? So all the cardiologist, endocrinologist, they all have their opinions. So my opinion and the patient's opinion is just as good so let them just try something and see the effect.

[00:40:10]

Robb Wolf: And see what the outcomes are, absolutely.

Dr. Cucuzzella: Yeah, if that isn't good they don't like it, they're just too addicted to bread then they tried it. Like how many times does it take someone to come off cigarettes you know? Maybe they need their 3rd heart attack or another hospital admission.

I mean the brain is if we ignore the brain the brain is the captain of the ship. So you know I really tried to pound into them in an empathetic way that this is comfort and addiction. This is not like your flaw. From day one of our lives we are fed sugar for comfort. I'll share this with you because I was just thinking about this the other day. So what do you think do we do during circumcisions to calm the baby?

Robb Wolf: I have no idea, but I'm going to find out.

Dr. Cucuzzella: You're going to find out, yes so we get this pacifier and we dip it in sugar,

Robb Wolf: Oh.

Dr. Cucuzzella: And the kid just like, the kid just like calms down and there's just like gave him fentanyl. It's crazy, but there's the kid's brain and in that early age is most potently affected by the sugar.

Robb Wolf: Wow.

Dr. Cucuzzella: Lustig's done the work with kids you know?

Robb Wolf: Right.

Dr. Cucuzzella: And the immediate effects of getting rid of fructose and I mean we're not talking 2 years. He just published an article on atherosclerosis just 3 days

ago, 9 days and they were eating the good diet, was actually pizza and bagels. That was the good diet.

Robb Wolf: Wow.

Dr. Cucuzzella: And they improved like all of these metabolic markers substituting pizza and bagels for straight up sugar.

Robb Wolf: Right, right.

Dr. Cucuzzella: So wow that's like pizza and bagels that's all sugar. But that's fructose you know just that really power driver in the brain of that sugar sweetened beverage, they put high fructose, corn syrup in Enfamil. Go to your grocery store and just pick up you know one of the first foods for babies? They all have corn syrup.

Robb Wolf: Right, right, right.

Dr. Cucuzzella: This is not by accident.

Robb Wolf: I did a piece of feeding your kids paleo and it was pretty darn well received and you know I would say having kids at this point versus 10 maybe 15 years ago I'm a little bit more relaxed. Like we do some ice cream once and a while, we do some 90% dark chocolate pretty frequently because I'm really hard pressed to figure out you know the down side of that. Like I could give those kids a whole bar of that and they would eat a square and they'll be like I'm done, you know?

Dr. Cucuzzella: That's great.

Robb Wolf: Yeah, yeah, particularly that 85 or 95% level but it's really interesting. Both of my kids eat kimchi, they both eat spicy food and when we go out to eat Mexican food they do some corn tortillas and I tell them to steer them towards whole wheat beans versus refried beans and stuff like that and I really keep an eye on them for, you know, how is their kind of emotional state after these meals and they seem to do pretty well.

Like once or twice they hit a birthday party or something where neither of the items were gluten free, like the stack of frosting on the cupcake was bigger than the cupcake itself. And you saw an absolute disaster after that. So I mean we've had a pretty good you know sense of tracking all that but people are often stunned by what my kids do to eat and it's just we've always fed them what we eat and they've developed a taste for that.

And we do kick our heels up and have some stuff that I don't think anyone could argue is health food. But we meter out those doses. We don't use food as a reward for the girls and we really don't call it treats either. You know it's not something that we do for like a special event. And so we try not to get that emotional connection in to it. And she's like well we're going to go have some fun and we'll do this and really try to remove that emotional piece to it but kids are fascinating laboratory with all that.

Dr. Cucuzzella: Yeah and you're cooking you know like having them just watch you cook. So to them that's normal, like you know you just don't bring in food from bags. And my kids laugh at me because I'll fail probably 30% of the time, but they're honest with me they're like dad this wasn't very good tonight. But that's alright, they'll eat it and they'll humor me.

Robb Wolf: Right.

Dr. Cucuzzella: They'll call it things. You know my breakfast, my daughter calls it the stinky omelet, and then they won't touch it because it's probably like a lot of peoples breakfast you know I've got my eggs and I'll open the fridge and whatever was left from last night's dinner I'll just throw it and it's so good. Right you know? But I mean that's like a little more evolved just crazy taste buds you know of all these vegetables and meats. But my kids would eat eggs, they'll eat eggs with American cheese so that's a start.

Robb Wolf: Right, right that's a pretty good win, that's a decent win.

Dr. Cucuzzella: They're starting to put some bacon in it now.

[00:45:00]

My son is he'll like mix it up a little, he'll put the bacon and the eggs and get all excited about that.

Robb Wolf: My girls will have a peasant uprising like if there's not bacon in the house. If I miscalculate like girls I'm sorry there's no bacon It's just scrambled eggs and fruit today and they're like coming at me with a shiv so it gets dodgy in our house pretty quick.

Dr. Cucuzzella: And then your dog if you don't have bacon in the morning your dog's not happy.

Robb Wolf: Right, right.

Dr. Cucuzzella: They're just sitting there. they're entertained just by smelling it for half an hour or so.

Robb Wolf: Right, right. So Doc how do we all work to move this needle forward? What do folks listeners need to do, healthcare providers like how do we support you, how do we support this Nutrition Coalition Project? Like what do we do to help move this thing forward? And trying to avoid bankrupting of our country from our health care food system? Like what do you recommend we do to support all this?

Dr. Cucuzzella: You know I think all this it's social media and social media is changing everything, and connectivity. So we've done these low carbo hydrate support groups in our community and the last one Doctor Erick Westmont came up to and we had 400 people show up in a town of 3000, and this was driven by a friend of mine Melanie Miller who I met at a health council meeting.

And everyone was talking about interventions for obesity, you know Weight Watchers, and things like that, that don't work. Because they tell you to eat 0 points of a lot of fruits and even bread, and you know I made this comment and I'm like well what are we going to? And everyone was talking about moral exercise.

I made a comment like what if you had a rod in your ankle what are we going to do? Take me out back and shoot you? We can't help you? And after this meeting Melanie comes up to me and is like that's me I have a rod in my ankle and I gained a hundred pounds help me out.

So she's a motivated. She's a healthy care person so I gave her a food list. She read New Atkins for a New You. and had proceeded to loose. I think she just lost 85 of those pounds now. But she's like we've got to start sharing this to the people. So she started and she's really good with social media so she made a Facebook page called Melanie's low carb journey, which led to people talking about this online. We had groups, our first group was like a hundred and then the other was like a hundred 50 and then it was 250 and then it was 400, because people are like losing weight with their friends are like what are you doing and they come to these meetings.

But we keep them evidence based, I don't have a single product to sell. So you know I mean just keep clean, you know of all those conflicts of interest. So I'm just here to help you. My food list doesn't have any products, it's all real food that you could get, even at your local food line here. I'm in a town of 3000, we don't have Whole Foods or Wegman's or

any facny grocery store. We have Food Line but you could eat healthy low carbohydrate meals with fresh fruits and vegetables, you know decent quality meats. Sure go to your farmer market we have that. But it's really simple. Just teach people about the basics.

But the online support is huge you know because they just post a question and you know some of them responds to that question. It's usually another question so I don't even need to be responding to all these questions. You see that someone else's questions 6 months in, you know someone say you got a recipe for cabbage, you know? And then 6 recipes show up. So that's where it's happening.

Don't be afraid to get here, you know, I think Aseem Malhotra with the Action on Sugar in the UK so, In west Virginia you know we're pretty close to creating a white paper, you know? Where actually you're kind of top down now, saying okay we have enough evidence, enough experience. We're going to come out boldly and say we need to foundationally change everything,

I mean we're talking policies. So to be able to allow a six year old kid to go and buy 32 ounces of Gatorade in a grocery store shouldn't be allowed to happen. You know those kids that's comfort food, you know the mom the parent doesn't know. So there's so many layers to it, but you're either all in or get out of the game.

So the bottom up revolution is going to drive ultimately what will happen top down. You know having tobacco got regulated. I mean that was 30 years after the first paper showing direct causation of tobacco to lung cancer, direct causation. I think he's last name was Dom published in 1950s. He was a British researcher and published that first paper. You know it was like 30 times odds of lung cancer if you smoke. So that was an association. There were enough criteria method that was directly causative but it still took 30 years.

I think, this is my opinion I mean we have to look at ourselves, you know? All the people in this country we are all carbohydrate addicted, you know? So if all the health care providers, hospital administrators, I mean were all like meat or soda.

[00:50:04]

It's very hard for us to say let's ban soda in hospitals. I mean we still serve soda in our cafeteria. I'm trying to get rid of that, but that shouldn't happen right? I mean we shouldn't allow, you know a patient once said to me they're in the hospital and their feeding them the meal, and I'm to them about this and there's some ginger ale there and looks at me and

says well if this food is causing my problem why is it on my plate? I didn't have a good answer to that. I'm like well you're right I'm glad you recognized that now.

You know maybe before you would just swig that down thinking it was good. So, you're in charge of your you know? But yeah it's a…I don't know, I mean really the trajectory I mean obesity and diabetes are undefeated.

Robb Wolf: Accepting these little boarded skirmishes where we get the story right and it's profoundly defeated.

Dr. Cucuzzella: Yes, undefeated I mean JAMA three 3 weeks ago came out and showed the average obesity rate in females now, 40% and this was age 20 – 50 I believe was that kind of that middle age range. It's not going down, it's going up, despite. I mean no one is unaware of it so it's not lack of awareness at this point. I mean anyone can walk down the street and be aware of it. So I'm open to ideas Robb.

Robb Wolf: No I mean, no, no, you reiterated most of the stuff the drums that I beat. You know the social media scene is so fascinating and clearly it has nightmareish element to it sometimes, but it's interesting particularly with diet. You can try it out. I kind of equate it to putting on a pair of jeans or a sweater and just try it for a week, 2 weeks, 30 days, and see if you like it. And maybe you dramatically transform your life and you feel great and you're like but I so love bread and soda. It's just not worth it, then you go back to the other way.

And there's going to be that element but there's a lot of people out there that they do want to see their kids graduate high school. They want to meet their grandchildren, they have you know reasons. That changing their diet and lifestyle you know those reasons are significant enough that they'll often enough make the change necessary to affect much better health. And so I think that social media and that n=1 experimentation is so powerful. And then having folks like you and then even you know some of the best educated most advocating people for all this are the folks that just fixed their own health.

And like you said you know the person who comes out with 6 different cabbage recipes for the newbie on the Facebook thread or what have you. Like those folks are really affecting incredible change in the whole scene.

Hey everybody so it looks like Doctor Cucuzzella's computer crashed on him pretty epically and we were right at the end of the podcast. So I just want to say a huge thank you to Doctor Cucuzzella for being on. I also wanted to encourage you folks, I honestly think that this is one of the most important podcast that I've recorded.

You know it's rare that we get someone who is a clinician with the incredible background that Dr. Cucuzzella has. He's doing an amazing work, and so if you have anybody, a family member who has maybe been dragging their feet on eating low carb or paleo. If you have a health care provider, who's kind of thumb their collective noses at this idea, I really encourage you to pass this particular episode along. Dr. Cucuzzella's bona fides are pretty legit given his position as a professor of medicine at West Virginia Medical School, I just can't think of a better example of how incredibly effective this approach is relative to the standard of care.

So again thank you for having Dr. Cucuzzella on the show. Sorry that we had a little implosion there at the end on the recording but please do pass this one along and talk to you soon.

[0:54:15] **End of Audio**