Uncover How CGMs Reveal Choices To Reverse Type 2 Diabetes Transcript

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Introduction to CGM and the summit

Hi, everyone. Welcome to the Reversing Type 2 Diabetes Summit. I am your host, Dr. Beverly Yates, ND And in this episode, we're going to take a deeper dive into the look of wearable technology.

Specifically, CGM is continuous glucose monitors and how much they are a game changer for people with type 2 diabetes. Prediabetes. We know this started with type 1 diabetes, which is lifesaving, and we're so glad that this technology can expand and support others who have blood sugar problems.

Allow me to introduce my interview. Her in this case is going to be Boris Berjan of Theia Health. Boris is an expert in this technology and has a company that has software that gives these actionable insights.

It's meant for clinicians, for health care professionals. So we're going to look at this particular episode from the point of view of how I actually use this in my practice and the benefits they can provide.

So, Boris, welcome to our summit. Hi, everyone. Amazing to be here. Thank you for the warm intro. Dr. Yates, it's a pleasure always to talk with you and have an interview with you.

And obviously you provide a lot of value to everyone listening. So great. I'm glad we could do this. So in the course of my career, I've always been a fan of the whole concept of test.

Don't guess.

Why continuous glucose data matters clinically

And when it comes to blood sugar results and making it actionable useful to the person who actually has diabetes, it's so critical to know real time what the numbers are doing.

And I've had a chance to work with a number of people recently over the course of the last year, for whom this has been even more, I would say, compelling because it's made a big difference.

So they've gone from a much higher level. They once see a like a 9 to 10, 11 all the way to a six quickly because we've been able to really figure out what's working for them and what's not working for them, whether it's exercise, it stress, it's resistance training, it's meal time and of course nutrition and then sleep.

So now, Boris, let's walk through this about what it is that clinically makes the difference, because I think this is where the future is going, where the data is then available to the doctor, to the nurse, the health care practitioner, the health coach, whomever, right?

Yeah. Awesome. So great leeway. And I think the best place to start would be on probably like a broad spectrum. How has this technology given you insights that you didn't have prior to it?

One of the biggest things is the simple fact that we all know that nutrition is the bull's eye of the target. What we don't always appreciate is all the other factors that affect nutrition or its results.

So if somebody is eating food that they think is healthy for them, this makes it clear whether or not it really is healthy. So this is where I know a lot of people get really aggravated cause they're like, Wait, I have a healthy generic list?

Come on, Doc, It's a one size fits all thing, right? Like that 1950s advice of eat less and little more. And we know when you say eat less, it should all be like as much healthy food.

But what is healthy food, right? What are you what if you're having an unusual reaction to, say, quinoa or blueberries or cauliflower, things that we would expect will not kick off a big blood sugar response.

But maybe you're the one who has an unusual blood spike response, right? Your gut microbiome, whatever it is, could cause that reaction. And without using the CGM and having real time data that the patient can see, the client can see as well as your health care professionals, someone like myself, a naturopathic doctor, a medical doctor, a health coach, whomever is on the other side of that, we don't really know.

We're making an assumption. And what if your supposedly healthy diet is actually not as healthy as you thought? Amazing. You actually said a couple of things there I wanted to dig into.

I think there's this maybe misconception that a blood sugar spike is only related to the amount of carbs or or sugar in the food. And you just hinted at it.

I'd like for you to maybe expand how is this CGM showing you when, like zucchini or cauliflower spikes?

Lifestyle factors beyond food

What are some other indicators that could be underlying problems that you're discovering and then maybe treating after that fact? Absolutely right. So part of what gets uncovered here invariably are all these aspects of the lifestyle.

We'll that makes the difference. So one of the things I appreciate with having a dashboard is being able to dial in quickly on what are their moods? Are they feeling a little brain fog?

You know, they feel anxious. Are they feeling depressed? Because sometimes food has that reaction all by itself. And then you can see, oh, this person was having a rainfall reaction.

Oh, this was a time when their blood sugar was actually crashing, not spiking. Right. They might have experienced a hypoglycemic moment instead of a hyper glycemic moment, you know, being able to untangle that real time with patients and go over carefully what they're doing.

You know, they literally just take a picture of their food, which just takes out all mystery around what are they saying? Because what some people call a salad is not the same as what other people call a salad.

You know? Absolutely. And that's those are great points. You talked quite a bit about getting the data, are getting images and things like that. Could you walk through is this a tedious process for your clients?

Is it easy to understand or use or how is the software and the hardware playing together? And to make this easy or maybe a little bit cumbersome for the end user or the client?

Yeah. So I've been really pleasantly surprised at how easy this is for the end user. For the client, they literally take a picture of their food if they want to apply words to it and type in what it is they took using an app on their phone or access via a laptop, they can they don't have to.

They just snap that picture and then select a few things that are relevant for them and then we're done. They can put in things about their sleep, whether or not they're exercising.

All of those things matter, right? Do they feel stressed because this is important. It really hammers home how important it is to understand the lifestyle side of type 2 diabetes and pre-diabetes without it, it's just too it's too it's too vague.

You can't really nail it down. And this makes it clear to the person and then they can course correct. Everyone has these actionable insights. They go, Oh, I don't care how healthy they are going into this.

Even people who don't have the problem when they use this, they can quickly figure out this works well For me. I

did not know this was as good of a response for my body.

I need to do more of it. And they always find two or three things that are absolutely no no good. They need to stop or adjust or make it really rare. It's really wonderful to see how your own body is working.

Amazing.

Easy setup and patient engagement

Do you feel like because you now have this relationship that's almost immediate response mechanisms coming back to you as a provider To that, it's allowing you more comfort in knowing what they're doing or you're sleeping later at night because of it and or do the clients also feel like because this data is coming back to you and the way that it is from their own body, that they feel like they're under a better standard of care?

What's that relationship been like because of the technology between you and clients? Yeah. So for myself and the people that I serve, this has been a game changer.

They relax. It's a lot less stressful to get me the data because they don't need to do anything active once they are connected to the software via the app and have their CGM connected to it, which is straightforward and simple enough.

Anyone who's used a CGM and has made use of the app FreestyleLibre app, for instance, is one example. Dexcom Whatever they're using, once they've got it connected, then we're good to go and they don't have to keep fooling with it.

So I'll give people a very tangible example. I have a patient who just gets an A-plus for this. He would regularly before our meetings, he would always send me his latest CGM data so I'd get two weeks worth right in there.

Separately, he create a spreadsheet that had populated the data. He would also take pictures of his food on his own, and he would send that along with the spreadsheet and the day and the time.

I mean, his attention to this detail, he was doing all of this manually and it was something that was kind of like a mindful meditation for him. I think for most people that would have been really stressful and difficult.

I know how hard it is just to get people to write it down there. I do this and now he doesn't have to do that. It's automate it. It's gotten so much easier.

So it's one less thing that's a source of stress for him or others who are trying to be so diligent to track what they're doing that drives their numbers for me as the clinician, it takes the mystery out of this.

And now I can see, Oh, you had a pizza slice that was this big or, oh, you know, you had a baked chicken and you had chicken broth and you had a salad that I would consider a salad that was full of leafy greens with some nuts on it and some resistant starts like chickpeas.

Right now we all understand what you mean versus someone else who thinks a salad is like three leaves of iceberg lettuce. Not the same. Not that we're not in the same park in terms of nutrient density or fiber or benefit for blood sugars.

Amazing. And there was a really cool call out there. You said that there's native apps from hardware, so like the Libre and the Dexcom. And then you said that that goes into a data stream that you're seeing.

Could you talk about the difference between what you see versus what somebody who just has a Libre or Dexcom is seeing? Yeah, So the person who has the Libre.

CGM or Dexcom? CGM Right. Continuous glucose monitor, they on their app can see their data. There's a little bit

of time lag there. Their clinician can't necessarily see the data unless they've used like, for instance, Libre has the Libre link up so your clinician can see your data to what your clinician can't see is how your moods are reacting.

Clinician visibility and real-world examples

They cannot necessarily know whether or not you've exercised, and maybe that's why there was a small or maybe a larger spike in your blood sugar. It wasn't necessarily a donut.

They also can't tell what your moods are. They can't tell whether you're not you're sleeping well, things like that. You know, there's just a lot of information that's missing.

It's just more efficient. So instead of it taking years and years and years to support someone who has type two diabetes or pre-diabetes, now we can get things moving in a period of months in the right direction because we focus on the the levers that are most important for managing blood sugar and returning and improving health.

Amazing. And something you mentioned there caught my attention was, you know, we can move faster or at lightning speeds to get these efficiencies and to get the health in a place where it's at least better.

Are you finding that after those winds, are there, it's still a useful tool? And if so, in what way? Yeah, absolutely. So it's so funny you ask that. I was thinking about two emails I looked at yesterday for people that I've worked with earlier this year, both of them reaching back out because they were so confident they could continue on their wonderful, excellent work all on their own.

And now they're like, Hey, Dr. Yates, you remember that group program you were telling me about? I'm ready. I need to get back on track. You know, it just makes people more accountable.

And now, if using this support of this software in the background is going to make that just much more relevant in a group format in particular as well as for an individual.

So whether it's one on one care or if it's in a group format, that's a win for everyone. And that way for the person who's the end user, they can continue to see their data.

You know, their membership is there. Access is for an entire year. It's easy to actually get to systems. Anybody who's struggling with getting CGM because maybe your doctor or other licensed providers will not provide you a prescription for reasons I'll never understand.

I don't think anyone should struggle like we don't withhold thermometers. Why do we withhold CGM So for diabetics, this is a no brainer. But anyway, get back on topic and anybody who for whom it's just been prohibitively expensive to access.

CGM This is another way to get it where it's far more cost effective. So it's a win in all directions. And you know, the people that I have right now who are making use of this are really happy campers because it is solving the very problems that we were running into myself as clinicians, seeing their data, knowing real time how they're doing.

And so when we get to our consultation time, we're much more efficient because I'm not wondering, well, what happened? And now they've got to explain it for the next 4 to 10 minutes of, let's say, a 30 minute consultation. Right?

So that pain point is gone. The other thing is they can feel encouraged because as they start to course correct and make changes, they'll find out they'll get positive kinds of feedback instead of just wondering or feeling beaten up about it or discouraged, perhaps they'll go, Oh, I made that change yesterday and look at it. Wow.

Or whoopsie, I made a mistake yesterday, or I thought that was good for me and it wasn't. And maybe if they're traveling or if they're feeling stressed, they'll get to find out what the role is there.

I've used it and I've had times where I've traveled across time zones where I'm losing time. Therefore, in my sleep, I know it's going to be not right.

And I've been very pleasantly surprised in my own case to find out my blood sugar did not blow up the way I was concerned. It probably was in my head like I had it as a watch worse situation.

And thankfully in real life it wasn't as bad as I would have thought. So now I know I don't need to worry about that like I used to.

What clinicians see versus native CGM apps

Instead, I can keep my energy more on making sure when I get to the new time zone that I exercise. That's I'm a little more sensitive to sleep. And weight training specifically for me are the winners.

So now I know. Gotcha. Is that ever issue the you're worrying about the data too much. How does the app counteract that or is that even an issue? Do you have any any insight on on that aspect?

That's a great question. Thank you for asking. I know so many people with type 2 diabetes or pre-diabetes worry about their numbers and some of them take action and for some people it freezes them.

They don't do anything. They feel paralyzed by it because they just assume it's going to be bad news. This lets people be proactive and find out, Hey, what's working for me?

And what I've seen so far is that people have really encouraged because they can quickly dial in on this was a good idea or that's not helpful. I need to find something else.

So some people will find that just regular walking, you know, like just before we got on this call, I had taken a walk over to our local park and back for me.

That's 12 minutes and I could already feel and see like, Yep, that was the right thing. Get out in the fresh air and sunshine, get the blood moving and, you know, be ready for our session, our recording here and on the CGM, I can always see that my blood sugar will drop 20 to 30 points with this simple activity.

I don't need to go run a marathon. It's just, you know, it's not necessary. You don't need to be a superhuman. You just need to be consistent. And I think that really reinforces consistent good choices and finding out where mistakes might be lurking like you weren't even aware of.

It's actually a really cool point because I think most people always think that the action item that they need to take is so much larger than it actually is versus even a small change here or there.

From what you're saying. I me, if I'm wrong, can have a huge impact. And then that kind of compounds because you do it, you're in your URL and your health really benefits.

Is that an accurate kind of statement from what you were saying to make? Yeah, it is accurate. It is accurate. In fact, that's echoed by other speakers across Summit where a number of people have said small changes over time add up and make the difference.

And often it's one or two really key things that you are going to need to focus in on. I think sometimes when it comes to being healthy and when we look at what the impacts are that affect blood sugar, we make it just complicated and kind of scary and we terrify people in a way that's not empowering and that's not accurate scientifically.

We know that there are a handful of things that are going to make that difference, right? It comprises the protocol. It's nutrition, of course, as our bullseye.

It's going to be stress because stress is a bully that grabs you by the collar and slams you right up against your epigenetic expression or whatever is lurking in your genes.

Right? So sleeps. Our third one, sleep is underappreciated for blood sugar and weight management from metabolism. Number four is exercise and strength training.

Together, you need to keep your precious muscle mass preserved. That way you will maintain your metabolism or boost it and control your blood sugar because those active working muscles are blood sugar sponges.

Faster progress and accountability over time

The number five is meal timing. This is where the opportunities that arise with intermittent fasting that can come up with making sure when you have breakfast that you actually have lunch a reasonable amount of time after breakfast and then have dinner a reasonable amount of time after lunch.

Skipping lunch is the number one mistake that I see most type 2 diabetics make. It makes them entirely too hungry by the time they hit dinner and they're much more likely to show anything in their mouth of the hungry.

That's how most of us will respond when we get really hungry. You want to avoid that situation. So those are the things that are so helpful and you can see it in the data and you can see it in the positive feedback that it gives people, because number one, it gives them confidence that their bodies aren't broken.

Number two, they can take control. And in three, their actions actually are making a difference because they can see it. When you just spoke about this guy that came up in my head, which was people hear all these pieces of advice, you should do intermittent fasting.

It should be 6 hours. No, it should be 20 and four should be three day water fast. So you should do dry fast or you should eat in the morning or you should eat at night.

Does this tool show objectively now? What's better for you as an individual? Because, you know, maybe 16 hours for me doesn't work or there's other variables at play like you're traveling.

Do you feel like this tool is now giving that temperature check to people and saying, actually the data is not backing up, This is great for you even though you wrote a blog post on it.

Yes, absolutely. This approach of one size fits all. Again, it's just it's convenient, but it isn't accurate. It's not helpful. And I totally understand People are wanting to crowdsource ideas and find out, you know, what's going to work and they're trying to find answers.

And without that guidance, without having a health professional, understands the numbers and the data, and we'll put that together and use that clinical dashboards to really help you.

And you use your own dashboard, your own access to the information from your CGM combined with your lifestyle things, you know, you mark down your exercise, your sleep, you mark down what you're eating really easily, just take a picture of it.

It just it just makes this so much simpler. And your moods, you know, I think the mental health aspects get completely ignored when it comes to really any kind of blood sugar regulation, whether it's type 2, diabetes, prediabetes, type 1, whatever it might be.

So being able to know with confidence what the numbers are and then how that person is responding is just really, really makes a difference. This brings to life that whole saying of test, don't guess Amazing.

I did want to go back a little bit because I realized we didn't actually define a CGM. Could you maybe give us a brief overview of what CGM stands for and what what it does at the core?

Sure. A CGM is a biosensor. It's a wearable device typically applied on the back of the arm, but it can be other parts of the body as is as make sense.

And what it does is it has a little a tiny needle very short that sits down from the sensor through your skin into your bloodstream. And it's sensing how much blood sugar glucose is there going by.

Avoiding overthinking and using data constructively

And it allows the device then to communicate that information. Typically, it's now via Bluetooth technology and if it's a Libre 3, the Freestyle Abbott FreestyleLibre 3 is going to be real time.

So you can actually see what's going on. You know, you can see if you have a delayed blood sugar spike, no blood sugar spike, like whatever's happening now, you got a window into your own body's reaction to what you've eaten or had to drink.

And it just takes the mystery out of what's going on with you right now. Amazing. Obvious question. Does it hurt? Yeah. So I would say my experience was, no, it's a little it feels like a little stick that just like a little boop.

So you press the device, in fact, wait for I have one here. Occurred to me a picture is worth a thousand words. So it comes here like this, right? This is what it looks like, folks.

For those of you for whom this is new, and I know some people love their glucometer and the test strips. And who counters the test strips? They're fine.

However, we don't get the same real time data, obviously, because nobody's going to stick their finger and get a drop of blood and then test it, you know, multiple, several times throughout the day.

That gets old quickly. So then you just open it here on this side is that sensor. So if you can see it, let's show the camera resolution. Yeah, okay. Yeah. You can see that little needle.

It's on the inside. And then when you apply it where that white circle is smaller white circle, it has the gray around it in yellow. That's the small sensor.

And it will apply it with the adhesive so it stays firmly and securely attached to your skin. That way you can still take a shower or a bath, etc. and it's easy.

So I did not find that it hurt. That is a great question. I thought it was okay if you wear it for 14 days, that's how long that center is going to last.

And that's easy again, even if it hurt a little bit when you first put it on, that's it. You're done for 14 days. It's so simple. Awesome. And then can people do anything they want with it, like running, swimming?

Is there a water aspect of that to avoid that? Like, what's the what's the mechanics behind it? Yeah. So for CGM, I always tell people, look at the manufacturer's suggested use and wear it because there is some variation depending on where we are in the world and what manufacturer we're talking about.

Generally speaking, yes, you can run, you can swim, you can ride bikes, you can sweat. In other words, that totally okay. Because we want people who with diabetes to be physically active.

So it would have been crazy on the manufacturer's part not to make a device that couldn't handle some level of exercise. You're probably not going to want to do boxing because I think direct hit to the sensor would not be a good thing.

That'd be bad. The same way, you know, if you're sleeping, you don't want to roll over onto it because it might give you artificially low readings and then the alarms go off and that will wake you up.

What a CGM is and how it works

Other than that, though, what I've seen certainly from my patients that reported in the Times when I've used in one, it's been fine. There's been no no drama, no issues.

Awesome. Very cool. I didn't want to cover that briefly just in case somebody wasn't aware of those terms. Yeah. And also, while we're here, one of the downloads, one of the bonuses I have for the summit has a whole PDF, a handout.

It's part of the summit. It's free, folks. Go grab it. Talking about the fake news and tips and insights for CGM. So make sure that you take advantage of that.

Perfect last couple of things to cover. Is this only for diabetics? And if yes, why is that not for other people and is also for other people who are not diabetic?

Why is still applicable? That's a great question. So let's unpack that one. Originally, this was for people who had type 1 diabetes because, you know, the problems for type 1 diabetic, their bodies don't make any insulin.

There's been an autoimmune attack on the pancreas. No insulin is produced. They have to take insulin for the rest of their lives as a medication. And we don't have other options for them to replace that insulin.

Right. So at this time. So with that in mind, CGM were originally developed for that particular population of folks. Okay. Now we have, as far as I know, no supply line issues whatsoever for continuous glucose monitoring.

CGM So at this time we can easily expand to include people who have type 2 diabetes and pre-diabetes. I know for a fact when people get this, it really changes behavior.

It encourages people because now they can see what's working, not working. And it also makes it so that they can stop worrying about things unnecessarily.

I do think it's okay for people who are looking to prevent this illness or who have a family history of it to use games as well, because anyone who really cares about their health, the metabolic insights you gain from using a continuous glucose monitor are priceless.

You're not going to get this information any other way. You know, it's very much in that whole ball of wax of the test. Don't guess this way. You know what you should focus on and what things are, you know, not worth worrying about. It's very freeing is what I found.

Gotcha. And it sounds like given the whole conversation we had, the software piece or people log their food and activities and are getting scores around that basically showing that how it's performing for them specifically makes it even more powerful.

Correct me if I'm wrong, because now it's there's no guess on that input.

Wearability, comfort, and activity

It's more just make an input and then the you know, the software analyzes it for you and then you don't you know, it's just now modifying our care plan a little bit a lot completely.

Just depending on the data. Is that, is that like a good synopsis that I, that I circle around? Yeah, absolutely. That synopsis is spot on. Having the scoring of your meals, your snacks, the things you're drinking, you know, whether or not you even need to be snacking.

Most people with type 2 diabetes and pre-diabetes do not need snacks. So then you can find out, Hey, is snacking a good idea for me or not? You know, because that sometimes can be a controversial point of view and that

scoring is done for you.

And so that algorithm is doing the analysis objectively. So then it doesn't rely on people's opinions about what they think is working or not working because, you know, sometimes opinions may people, they can really interfere with like just facts, right?

People will have their facts, but they will override their facts with opinions. This takes all of it out of there. And now you just have the info. You literally have a green light on a good meal, yellow on something that was kind of questionable and a read on that needs to go.

Amazing. You mentioned something interesting that I want to do a little bit deeper dive on, which was the algorithm does it for you objectively. So if if it's true that everybody's different, then how does the algorithm know to give scoring for different individuals?

So if someone's a type 1 diabetic or is is a type 2 or pre diabetic versus somebody who is none of those things but has health optimizations like how is it working to make sure it's an accurate representation and scoring them in an inappropriate way?

Well, if I understand this right, it's going to be based on where your blood sugar numbers currently are and the difference or the change, the rate of change, the delta, so to speak, not to make this too much of an engineering discussion because, you know, with me being an electrical engineer from M. I. T., I love numbers and I'm going to resist and to pull myself back and not dive in on that piece.

But yeah, that's my understanding. Is that accurate? Yeah, 100%. Yeah, exactly. Yeah. Because it's it's just reading the raw data and then contextualizing it.

It doesn't matter. It doesn't matter who you are as a person and what you're doing. It's just reading your body, this data. So you know, there's no way to really fudge those numbers one way or the other.

Yeah, Yeah.

Who CGMs are for and why they help

So my data, the data, the data of a professional, let's say body builder, the data of someone who never, ever is physically active, the data of someone who's much younger than I am or someone who's much older than I am.

It's just data. Yeah. Yeah. I think that's the that's really kind of been the underlying beauty of the whole thing is I guess you've never really had access to this before until recently, is that correct?

Not, not this way. Not all of it put together in one place. I've had those amazing dedicated patients who will send me their CGM data in advance. They might send me some screenshots of food.

I usually I have people do it for a day or two. I used to try to have people do a diet diary, but I found, A, they don't report everything. And B, to some people it's just tedious.

And then some folks want to be the A student. They only want to show you the things they think are best. Now, you know, I'm helping people to take it for real.

And I say I'm not judgmental about this. You know, no shaming, no blaming. You know, I'm not trying to demonize, feed food groups. I'm not trying to demonize people either.

I just want the information so I can help them. And this lets me do that. Yeah, that's incredible. Last couple things. Where do you see the future of technology in practice and for clients in Europe? Oh.

This is a great question. You know, if I could do some trend forecasting right, I think this will become the standard

because I think that clinicians are going to want it.

People will actually help other people with their health, particularly those of us who have more blood sugar and diabetes focused practices are going to demand it because we get tired of flying in the blind, you know, and the people that we serve, our patients and clients, they too get tired of riding along with us, you know, being flown in the blind.

Right. Like, it's really hard to get to a destination with no map. This is the map. Awesome. Last thing, then who would you recommend? Try a CGM or the software?

And what would be your last reason for them to do it? I think being encompassing better is a better question. So it encompasses the people who care about their health.

Certainly people who have prediabetes, type two diabetes, obviously type 1 diabetes, like any kind of the diabetes world. Sure, this is 100% going to be helpful.

Type 1.5, that hybrid between type 1 and type 2 people who are worried about or who are in the earlier to middle stages of Alzheimer's and dementia because those cognitive decline effects are so sensitive for blood sugar and maybe it's not too late for them, this could be really helpful to have CGM.

I also think people who have a family history would be well, well-served to know what's going on with their blood sugar. It's always shocking to me to know how many people are going around undiagnosed right now who have free diabetes and type 2 diabetes, and this is around the world.

This is not just a U. S. centric problem. It's the entire planet is under threat with this.

Future of metabolic health technology

The other thing to consider is, I think for metabolic health, people who care about it or who want to know more about it, I just think it would be phenomenal for all to join in and do this, because we know that if the pandemic there's ever more people with metabolic problems.

Before the pandemic, it was thought to be in the high sixties, low seventies in terms of people who had metabolic problems. And since the pandemic got started, it's more like 88% of people in the U. S..

That is a stunning number. That means 12% maybe aren't metabolically unhealthy. And diabetes is very much a metabolic disease. Cancer is a metabolic disease.

Heart disease is a metabolic disease. There's a number of things under that umbrella. They're all linked together by inflammation. And if we want to have any hope of making progress and keeping human kind safe, we have got to work on this now.

We're going to just end it there because that was absolutely epic and amazing and your willingness to want to solve this problem and your compassion and your care for wanting people to be healthier, obviously, I think your last statement really solidified that, at least in me.

And I hope everybody else watching. So I appreciate you taking the time to relay this information. I hope everybody here got a lot out of it. I know. I know we've talked a lot, but every time we talk, I get something out of our conversations and you're extremely motivating and want me to always contribute in a positive way.

So thank you. You're very welcome. I'm delighted that we were able to connect for this interview and we can share some more about this, you know, giving people a peek behind the curtain and some upcoming things that we're going to do after the summit.

All right. Thank you so much.