Sweet Dreams: Your Sleep Definitely Affects Your Diabetes Management Transcript

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Introduction and guest background

Hi everyone. Welcome to this session. This specific interview for Reversing Type 2 Diabetes Summit. I am your host, Dr. Beverly Yates, ND. It's my distinct honorand delight interview today, Dr. Audrey Wells, whose specialty clinically is sleep apnea.

Sleep apnea and Reversing Type 2 Diabetes are a conversation that we need to have. There's so much mythology or just a lack of information. And Dr. Wells is such an expert.

This is her deep well of expertise. I am so glad that she said yes. Welcome, Dr. Audrey Wells. It's a pleasure to be here. I'm very happy to talk about this.

I'm so glad you're here. I feel that people in who have sleep apnea and sleep disorders are really underserved and they need quality info. And so we're going to make this happen.

So I'd love to share a little bit about your bio. Dr. Wells is a seasoned, very experienced sleep medicine physician and a professional mindset Coach, Mindset that we know is so important when it comes to our sleep hygiene, our sleep habits, along with controlling blood sugar rate, how we think about things in our self-care are going to matter here.

She's on a mission to help people with sleep apnea to get fully treated without sacrificing comfort. That's right. You don't have to suffer. She offers a comprehensive library of self-directed courses, a group coaching program, and a private Facebook community.

There are free education resources and more at supersleepmd.com All right. So, Dr. Wells, let's get right into it. You know, our title here for your talk is Sweet Dreams.

Your sleep definitely affects your diabetes. And this is what we're going to really hone in on. So can poor sleep, quality or quantity affect blood sugar control in people who have diabetes, whether it's type 2 diabetes, prediabetes, type 1, 1.5, type 3, whatever it is.

How how are these things related? Beverly there's no doubt about it that if you are under slept or if your sleep is fragmented, you are going to have effects on your metabolism and that includes your blood sugar, your insulin secretion and your responsiveness to insulin.

The data are clear. And so I want to give a resounding yes to your question and, you know, there's a really sort of commonly quoted study just to illustrate this point.

So a group of young male volunteers, these were college aged students were in a lab setting and they had a sleep deprivation of 4 hours for a week. And in these otherwise healthy volunteers, they were able to demonstrate insulin resistance of with 4 hours of sleep over the time period of a week.

So there's no question about it that if you're someone who's diagnosed with diabetes or insulin resistance, your sleep is going to affect that condition.

It makes sense, right? There's so many interactions and feedback systems in the body, and I think that the interaction, what goes on a sleep, whether it's with brain health, cardiovascular reset, blood pressure, our weight, our moods, metabolism.

I just think people don't get good guidance about this. So this is part of what we're going to have for our conversation today, Right. So what are the most common sleep disorders that affect people who have diabetes?

Sleep apnea is right up there. In fact, it's estimated that about two thirds of people who have diabetes also have sleep apnea. The burden of undiagnosed individuals is severe.

So in the United States right now, about 80% of people who have sleep apnea are undergoing those. That's a huge problem. Other conditions in the sleep umbrella that affect diabetes are insomnia.

So people who have to wake up a lot at night either to use the bathroom or because they're having to sugar, also report symptoms consistent with insomnia, trouble getting to sleep, trouble getting back to sleep.

How sleep affects blood sugar and diabetes

And finally, restless leg syndrome. And this is a condition that has a lot of overlap with restless leg syndrome or periodically in movement of sleep.

And here I'm talking about the neuropathy that's oftentimes associated with diabetes. The symptoms can look a lot like restless leg syndrome, and a lot of times we just treat those concomitantly.

That make sense. That absolutely makes sense. You know, when I've heard of people talk about having restless leg syndrome or something that has sounded like it, whether it's been in my personal life or clinically, I've often wondered how much they might be depleted, whether it's their nutrients, like, say, electrolytes, like magnesium.

Maybe it's their cortisol response and the adrenal system that is probably in overdrive, often with people who have sleep apnea, and then eventually they get into the exhausted phase.

I again, if these interactions I just wonder about that totally. I mean, when you look at sleep apnea, diabetes and weight or metabolism, there's so many overlapping mechanisms that are affected.

And so really to treat the whole person, you want to integrate all of that information and say, okay, what are we missing? What is this person at risk forand how can we help them best? That's a great way to look at it.

How can we help them best and what are they at risk for? And do you find that commonly among colleagues that they are teaching their patients, their clients, what it is they are at risk for and help them proactively to address it, because there's obviously commonly overlap here?

Yes. And I think it's tough because in the medical delivery system nowadays, we've got a very short appointment and those appointments tend to be spaced months apart.

So oftentimes I think there's not enough time to go over everything, which is why I advocate for the patient themselves getting educated, applying that knowledge and really being proactive about their health.

It's one of the reasons that I love doing these symposia and summits, especially with DrTalks, because it gives people some exposure to things that they might not otherwise be aware of.

I agree with you 100%. That's why we do this work in this format, because we can reach people in a different way with quality, curated evidence based information, and to just make sure they're aware that they know all of the things that they have options for and what they should be looking out for.

Because the reality is you're right, enough time is not spent in a typical medical encounter. So people just really don't get their eyes and ears and hearts opened to what's out there that could be helpful for them to live for much better quality and perhaps quantity of life.

So true. Okay, so when is it that people with diabetes should get screened specifically for sleep disorders? And

how would you say they should navigate that or advocate for themselves?

Any tips you could give people? Yes. You know, in general, I would have a relatively low threshold for screening for sleep apnea in a person who also has diabetes.

So symptoms are one thing to look at is their snoring, is their gasping present during sleep, is the bed partner reporting a lot of restlessness or nighttime awakenings?

All of these things point to some sort of disruption in sleep. And so a sleep evaluation could be a next step. Medically speaking, it makes a lot of sense to evaluate for sleep apnea if there's any problems with blood glucose control.

So, in other words, if the person is doing all the diet steps and they have physical activity and medications in place, but they still have trouble keeping that A1C down, then you've got to look a little deeper and say, Is there a cause that's not been addressed yet?

Common sleep disorders in diabetes

Sleep apnea is so common in this situation, even in the absence of symptoms, which is very interesting. And I think more and more cardiologists, endocrinologists and other health care providers are getting clued into this.

And so for people who are having sort of a response to medications, that's worse than would be predicted, oftentimes they get referred for a sleep evaluation and that's entirely appropriate.

That makes sense, right? So I think as people go along, just understanding what the pieces of the puzzle are and what's important for their own health and well-being, and then for the colleagues who are listening to the summit, please be thinking about that and being an advocate to make sure that people get the appropriate screening for sleep apnea and have a steep study done.

I've often seen that that for many people can be the biggest obstacle. So this leads me to another question, actually a few questions before we go on to a bigger question.

Let's dive in on this one a little bit more. What suggestions do you have for people who don't have a sleep partner? Like some people have a sleep partner or a lover, someone who's around them or other family members maybe in an adjacent bedroom who can hear some of what's going on, whether they are snoring, gasping for air or other things.

Right. And what if you don't have someone who can report like that? Do you have any options? Yes. And I think we can bring in technology here. There's a couple of great apps out there.

One that I like to recommend is called Snore Lab. So it's something that you can upload on your phone. And this is an app that's meant to listen, if you will, for snoring.

And then it reports that and it's a piece of the puzzle. I want to tell you, snoring is just one symptom of sleep apnea. And sleep apnea is sort of on a continuum, you see.

So, you know, initially a person starts developing that airway obstruction and that leads to snoring because you start getting that air, having turbulence as it moves through a narrowed air passage.

And then it can get worse and worse over time. But I can't tell you how many times I've heard somebody say, listen, my cardiologist sent me here. I used to snore terribly, but then it just went away.

And I think, oh, my goodness, Because what's happened is now the person has complete airway collapse during their sleep. They have more apnea is which are complete airway closures as opposed to hypotenuse, which are narrowed airway.

So they're not making noise because there's no air. Air getting through. And they're under the impression that their sleep apnea can't be there because there is no more snoring.

So I think, you know, technology is a way to help illuminate this and bring that to the surface. But I just want to point out that the absence of snoring doesn't necessarily mean the absence of sleep apnea.

We say that again. Listen, guys, the absence of snoring does not necessarily mean the absence of sleep apnea. All right. I think we made that point. Good, good, good. Okay.

So with that in mind, then, if someone doesn't necessarily have the classic symptoms, the classic signs that we expect, like, you know, really amazing, sonorous, snoring, the kind of snoring where the walls vibrate, no one wants to be in the same room or near them when they're asleep, that kind of thing.

If they've gone completely silent, this might indicate, as you're saying, that their airway is completely closing. That means they're getting no oxygen. Right.

So the word apnea means without breath flying, without oxygen and hypoxia, meaning less than what you need for breath.

When to screen for sleep apnea

Right. So in this scenario, it sounds like with that spectrum, people might be more likely either to dismiss it themselves, say, oh, it's just little snoring.

You know, my grandparents nor my parents, nor my siblings, nor we just know our snores is snoring. 100% Associate of sleep apnea. Could it be that some people snore and they not necessarily have sleep apnea?

That is true too, and that's why we have a test. Okay. So if the absence of snoring meant no sleep apnea, then we wouldn't need a sleep study. If the presence of snoring equals sleep apnea, then we wouldn't need a sleep study.

So this is why we need testing. So it's not only to determine the presence or the absence of sleep apnea, it's also to say how severe is the condition?

And this helps inform treatment options. Now, I want to mention another another scenario where snoring may not be very prominent and may be downplayed or minimized, and that's for women.

Now, you and I are card carrying members of the female. We are. We are. And this is something I'm really passionate about, too, because a lot of folks feel like, okay, if I'm not a man and I'm not overweight and I don't have a big neck and my snoring isn't that bad, then I can't have sleep apnea.

Ha, False, false. If you're a woman and you have a normal weight and you have light sleep during the night, sort of skating on the surface of sleep, to me that sends up a red flag to check the breathing during sleep.

Women manifest sleep apnea different than men, similar to the heart attack situation. Okay, so with heart attacks, you get the stereotypical chest pain and going down to the floor.

Women are different. Same for sleep apnea. So women may present with more subtle symptoms. They tend to report tired during the day more than sleepiness.

And there is kind of a subtle difference. And they also tend to report more light sleep or insomnia at night. Not the heavy snoring that peels the paint off of the walls.

So I just want everyone to understand that, you know, not not looking at the problem doesn't get you anywhere. The first step is to get some information about what's going on.

The only way we can do that so far is to do a sleep study and find out. Beautiful. I agree with you. The 3,000% test. Don't guess. Having an objective assessment is step number one to determining what makes sense for you after that.

And people shouldn't make assumptions. I still remember one of my sleep apnea patients from about 15 years ago, and when she first came into the clinic, this woman was the picture of fitness.

She had every possible fitness and metabolic marker in an excellent range. Not just good, I mean, excellent. Right? At the time when I saw her, I think she was like 62 and she was going to these fitness boot camps and she just did all these things.

She just was a powerhouse lady. The thing that was so interesting about her was that she absolutely had obstructive sleep apnea by anybody's measure, including a sleep study.

And it bothered her. She was so mad because she thought, how in the world could this happen in her head? She hadn't earned it. You know, people have this blank same thing that goes on in judgments.

And because she didn't fit the stereotype of the profile, she felt like, you know, her body was failing her and attacking her. And I said, okay, your emotional well-being here is important, but I need you to face facts. We don't have to like facts.

We need to accept them. So anyone listening to this, you know, somebody who maybe snores a lot or they don't, maybe they're petite, maybe they're very lean and appear to be or as far as you know, are physically fit.

This does not rule them out for this problem. They still need to be assessed. Is that fair to say? Absolutely. And I want to share something, you know, a little personal with you, but I think it's entirely relevant to this discussion.

In my family, sleep apnea is quite common, and I've always had it in my head that eventually I would develop it. Well, I'm the kind of person that likes to test the things that I recommend.

So I've tried all the sleep masks, I've tried some of the CPAP alternatives, I've tried the auto PAP in the CPAP and the BiPAP and all of that, and I make it a practice to do that so that I can walk a mile in my patient shoes.

Lately, my auto pap machine is starting to pull pressure during my sleep, so right now I am capturing the beginning of my sleep apnea, which is a very funny place to be.

Right. And you know, I have some thoughts about that as a physician and I have some thoughts about that as someone who has the condition. Right. And so I get it. You know, I get it.

Recognizing sleep apnea without a sleep partner

But sticking one's head in the sand gets you nowhere. You really need to be empowered to make a decision about your health with the information in front of you.

So I love the statement that you made to just get the facts. Let's see what we're working with so that we can move forward in a in a way that makes sense for us.

But it's informed. It's not just kind of turning a blind eye. Exactly. Thank you so much for sharing that. That's important. I know it will have reached people's hearts and ears and they'll think about, Hmm, I need to go get checked.

Right. Let me not be in the way of my own progress. Yes. Okay. So let's take a peek at what are the treatment options, Right? How does sleep apnea affect people who have diabetes and what are the treatment options that they can look forward to?

So a lot of people think that if they go for a sleep evaluation, at the end of the evaluation, they'll get diagnosed with sleep apnea and then there will be a machine on their bedside table.

And it's just a given. It's not a given. But I want to say a few words about what treating sleep apnea means. So at this point in time, CPAP therapy, which stands for continuous positive airway pressure, is the gold standard for sleep apnea care.

Now that positive airway pressure or PAP is what holds the throat open during sleep, so there's no extra oxygen in it. It's simply an air stent that keeps the throat nice and open so you're breathing in and out.

Normally during sleep, that means that your blood oxygen levels stay normal and stable, and it means that your lovely brain can stay in the sleep cycle that it's meant to. And when you consider CPAP as a treatment, what you need to understand is that it will effectively eliminate sleep apnea for 95% plus of individuals.

Okay, So that's such a high treatment response that it makes it the gold standard treatment. The major caveat is it only works when you're using it. So this requires a commitment on the part of the person diagnosed to use the CPAP nightly and throughout the night.

Now, for some people that doesn't fit into their lifestyle, it doesn't fit into their identity. And I get it, which is why I made a whole list of CPAP alternatives to share with people, because oftentimes there's not enough time with your sleep doctor to go through all of these.

So I have an online course that goes through alternatives to CPAP, both surgical and nonsurgical with an unbiased opinion and drawn from my clinical experience.

So we're talking things like the Inspire treatment, which is a surgical treatment, hypoglycemia, nerve stimulation, and there's a couple of others in the pipeline to come out.

We're talking oral appliance therapy, which is a dental device custom made to fit over the upper and lower teeth, and that brings the job forward and is opening up the airway caliber that way.

There's other things like position therapy. I talk about weight loss, I talk about other surgical treatments because there are things in the CPAP landscape that are alternatives. Now, I think when somebody approaches treatment, they can understand like CPAP works 95% of the time.

But I don't really care about what other people are doing. I only want something that works for me. Right? Maybe alternative treatments. Sometimes that's harder to predict in advance.

The sleep apnea severity can help with that a bit, But one of the things that I do is help people navigate that landscape and choose something that they feel comfortable with if they've decided that CPAP is not for them.

Okay. Okay. So lots of nuance there. Do you think it's worthwhile that people who travel a lot take a, let's say, mini CPAP or something like that with them, or should they take their full unit?

Is that a better idea than just traveling without any CPAP support? I think no CPAP support, especially if you have moderate sleep apnea or severe sleep apnea.

It is not a good idea. So consider if you're on a road trip, then you may be not as safe of a driver as you normally would be if you are traveling and spending the night in a hotel room or in a room with someone else or near someone else, your snoring may be disruptive to their sleep.

You won't enjoy your trip as more as as much if you are not sleeping well.

Sleep apnea symptoms in women and the need for testing

So I always think that making the effort to bring your CPAP along is a good idea. The travel machines at this point are not insurance covered, so they're a bit spendy, you know, hundreds of dollars and sometimes even going over $1,000 a bit.

But for people who travel, often they can be a real time saver and a convenience giver. So the travel caps tend to be about this big, the size of two Post-it notes, I like to say, and they're meant for occasional use.

The motor is not as robust as the home machine. If the travel CPAP is not an option, then yes, bring your your home machine. Don't forget the power cord.

It comes in a carrying bag. And when I go to the airport, I'm looking around. You're doing good. You're you're getting your day. I see all those CPAP bags and I love it.

Yeah. I think it's been a real transformation because so many more people are being diagnosed in our aware. But there's still a big gap, just like the awareness that people have type two diabetes or pre-diabetes, there's a lot of people who are still not diagnosed. I'm yeah, I agree.

And I think more and more if people talk about their good experiences with sleep apnea treatment and the benefits that they enjoyed as a result of getting a good night's sleep, hopefully those barriers can be reduced.

That's our goal, right? This is why we're doing this work. Okay, cool, cool. So are there any specific lifestyle changes that can improve the sleep quality and blood sugar control, you know, glycemic control in people who have diabetes?

Yeah, this is a great question because this gives people some actionable steps. What is in your control? Let's work on that. So I'm a big fan of exercise.

Exercise is not so great for weight loss, but if you exercise your sleep quality will likely be improved. Yes, and I think your glycemic control is also improved.

Stopping eating 3 hours before you go to sleep goes a long way to helping with reducing acid reflux at night and helping your body change from the daytime behaviors, eating, socializing, working, etc.

to nighttime behaviors, which is, you know, giving your gut a rest, keeping a regular sleep schedule is also important. This helps your brain and your body anticipate biological rhythms and sort of slide into the functions that they're meant to perform in that time of day.

Now, our bodies are very entrained to the clock time. In fact, we have genes in every one of our cells that help us know what time of day it is. And so if I were to give like one golden tip, it would be make sure your sleep timing is held consistent.

This is a rather unsexy tip and I get it. But if you want to fight with your biology, you're going to lose 100% of the time. Absolutely, I agree 100%.

You know, those those parts of ourselves that know the circadian rhythm, the time of day, it is right. Those chronometers, those are a real thing. So some of us are the morning larks, some of us are the night owls, some of us are more late morning types, you know, early evening.

But whatever our clock is, we really do have to get that figured out and honor it. And if we don't, we risk all the rest of our health. Again, I don't think that's typically known.

And sleep is a large determinant of our ability to reset, to be healthy, to do all those restorative processes while we're asleep because we're not actively out.

And if they're compromised, oh boy, we are under real threat.

CPAP treatment and alternatives

Real threat. That's true. And the damage is being done way before it comes up as abnormalities on a lab. So, you know, this is a proactive approach to health.

It's not a reactive approach to sickness. Exactly right. It's health management, not disease care. They are. Yes, very different. Okay. So with that in mind, I'm curious to get your thoughts about this.

Sometimes when people travel across time zones, they really get out of sorts and maybe don't get settled back in when they return home. Many tips or thoughts about how to handle that because with CPAP, I feel like that gives that a whole nother wrinkle.

It could it could. If you can anticipate your travel, it's helpful to start getting on the schedule at the place you're going to even three or four days in advance.

So, for example, if you're traveling across two time zones, you may start to adapt the time zone of your destination three or four days before your trip.

And this is a way to kind of ease that transition. Now, it's always going to be easier to stay up later than it is to go to sleep earlier. So that's something to keep in mind.

Another thing that's really effective is managing your light exposure. So if you are going to a place and your body thinks it's afternoon, but it's actually morning in the place that you're going to, then you want to get bright light in your eyes, which will help to move your circadian clock, which is in the very sort of center of your brain.

And you can also pair that with adapting to the meal schedule of your destination, adapting to the social life and rhythms of there. So, you know, basically just kind of expecting that you're going to do in Rome when in Rome, do as the Romans kind of thing.

Now realize the body has a certain pace when it comes to shifting time zones. So you can only do it maybe an hour every few days. So give yourself a little grace.

I would try to avoid napping unless you're a danger with driving or something, but just adapting to your destination is the very best thing to do. All right, great. Thank you for those tips.

You know, you've mentioned driving a few times and I want to share with people, one of the reality is if you have sleep habits, I'm just thinking of a patient who was really stubborn about CPAP.

I finally got her to grasp that this was critical to save her life and her brain health. Right. Her big thing was she would drive and fall asleep at the wheel and it's like, this is like being essentially drunk.

So would you share with us what is the truth behind when people are driving and they are they have sleep, sleep apnea. They are not effectively treated with a CPAP, They don't have one and they refuse to wear it or it's not comfortable or they have been diagnosed like how can people start to recognize, hey, I'm in my own way of being well.

This is a serious topic, so I want to kind of give it the gravity. It deserves because when you're driving, you are behind the wheel of a weapon. Okay?

And not only is your life at stake, but anyone you have in the car with you and every other car you see out on the road is vulnerable to what you've got going on when you're sleep sleepy or sleep deprived, no matter what the reason, it is like being drunk.

Except for one thing. When you're drunk, you have a delayed reaction time. If you have a micro sleep at the wheel, you have no reaction. So with drunk drivers, you see the skid marks on the road as they are trying to break to avoid

a collision with someone who falls asleep behind the wheel.

There are no skid marks because they're asleep with their foot on the gas. If you're sleepy, don't drive. And some people, they do different coping mechanisms, right?

So rolling down the window, turning up the radio, chewing on some sunflower seeds, getting, yeah, drinking a soda, getting cold air in their face. None of it is effective.

Lifestyle habits, travel, and driving safety

And by the time you really realize that you're starting to have the head bobbing, you are are not safe. It's like maybe 30 miles back where you needed to pull off.

So pull off, get a little nap and then get back on the road. There is simply nothing that important that you need to take that risk. So, so good. Thank you for sharing that with such clarity.

That was one of the things that as my children were learning how to drive that I really emphasized for them, if you are impaired for any reason or if your friend somebody you're with is impaired for any reason, do not get behind the wheel.

Absolutely. Deal with whatever it is later, but stay safe. Yeah, yeah. People of any age need this, this, this, this information. The person I'm thinking of, she's now, what, 73?

But when she first was struggling with this concept, she was 61. I mean, this was a fully grown woman, so who definitely was not an impulsive teenager.

Oh, dear. Yeah. I mean, it only takes one time, really. I mean, I think by the time somebody is reporting. Oh, yeah, I fell asleep behind the wheel a few times.

I just. My heart goes out to them because I know it's very seductive to keep going. But the truth is, you're just not safe. Okay, Good to know. Getting out. All right.

Please share with us what your experience is. Your thoughts are about orofacial myofascial kinds of exercises, things to try to train, who tell, telling the muscles of the neck and throat, in particular the throat and the airway.

Many of us as kids weren't breastfed. And one theory I have is that if we weren't breastfed, we didn't spend a few years developing this airway. So it's no surprise in our 20 studies forties, we start to show up with sleep apnea because this musculature and the actual connections and ligaments everything, they never got the workout they should have got when they should have gotten it.

That's one theory. And the other is, is that if somebody was bottle fed as an infant because it is so easy to get milk from the bottle, the relationship to that nourishment is just a different thing.

Right. So now here we are many years later, can we claim this airway if we do appropriate exercises or no? Is it's too late? One of the effects of having a narrow palate palate as a result of bottle feeding or even allergies, chronic allergies as a kid give you that long, narrow face with a high arched palate or the roof of your mouth.

And that is that's a cranial facial condition. As children, you can manipulate that because there's still there's still that fusion of the bony sutures in the roof of the mouth.

But as adults, unfortunately, it's quite permanent for some people. Anyway. There are surgical procedures that address that. So instead of a high arched palate, it sort of allows the palate to be more dome shaped, which allows for better tongue posture.

Right. The tongue is up in the roof of your mouth and kind of sucked forward and there are some treatments to help

strengthen the tongue and even change the muscle fibers in the tongue.

Or at least that's the theory. Do those work for sleep apnea? Possibly, except for one thing, which is that in REM sleep or dream sleep, one of the features is that all of the muscles in your body relax, and that includes the tongue.

So the tongue being the big player when it comes to airway obstruction and it relaxes during dreams sleep, you're still going to have those airway blockages. Most likely.

There's other places where you can obstruct the airway, too. But, you know, the tongue tends to be the big player. I think there's no downside to improving tongue posture.

I certainly am an advocate for nasal breathing. Nasal breathing is worth pursuing.

Myofunctional exercises and closing advice

But will it cure sleep apnea? Probably not. If you're moderate or severe, I think some mild cases could see definite improvement. Okay, that makes sense. Right?

He really does. All right. Just to put out there some of the information people have access to and you know, what's what what's really working and what's maybe not is not as much of a help as we would hope.

Okay. Okay. Looking at root causes all the time. All righty. So this has been a wonderful interview. As we wrap up this session. I would love to know if you have any parting words of wisdom or encouragement, insights that you like to provide for people who we're looking to reverse or at least get control of Type 2 Diabetes and pre-diabetes.

I would just like to say that sleep is for your brain and your body. It's a biological need and it needs to be honored if your sleep could stand some improvement, that's a very good way to help your health.

And I certainly encourage people to to do that. All right. Great, great. So, Audrey, if people want to connect with you, where should they do that? You can find me at supersleepmd.com There's a contact form there that goes right to my email.

I'm happy to answer questions, and there's tons of information on the website, including my courses and group coaching experiences. All right, great. Thank you so much for being a wonderful colleague and partner hereon reversing Type 2 Diabetes Summit.

We appreciate you and your great information and your on that, that silent, unknown world of sleep. It's the one time, I think, when people really aren't aware of what's going on.

But boy, does it set up the rest of their life in their day. I totally agree. Very good to be here. Thank you so much. You're welcome.