Insulin Resistance: Key To Understanding Diabetes Transcript

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Introduction and Dr. Maradanau2019s Practice

Welcome to another episode of reversing Type 2 Diabetes Summit 2.0. I'm your co-host, Dr. Will Hsu. And today I had a wonderful opportunity to speak with Dr.

Jhansi Maradana, an endocrinologist. And without further ado, I wanted to jump into this conversation with Dr. Maradana. So you tell us a little bit about your practice and who you are so that our listeners have an appreciation for your background and the experiences that you have.

Thank you for providing me with this opportunity. Definitely. So my name is Jhansi Maradana, I'm a practicing endocrinologist at Wentworth Douglas Hospital.

We have a robust community practice of endocrinology when majority of our population is, of course, Type 2 diabetes. The most challenging and critical condition right now in the United States. And we also take care of other patients with type 1 diabetes and other endocrinology conditions.

But a majority of our population is type 2 diabetes. And can I call you Jhansi with that. Okay. Yeah, call me Will as well. So Jhansi being kind of accelerated chronologies as you we all came into this discipline with a certain degree of passion.

Right. Then maybe you tell us a little bit about what drew you to the practice of endocrinology and specifically to this health condition called diabetes, that now it affects up to 15% of US adults.

That's a good question. And that's a that's always been a passion because my grandfather was was a practicing traditional, practicing traditional medicine before.

And he we all grew up eating healthy food, making sure that we follow good lifestyle.

Why Endocrinology and Diabetes Matter

And I have seen that one size transition to my med school. And then when I started my residency in the States, I noticed that there's a lot of population that is getting affected because mostly because of the lifestyle and that diabetes, the treatment of diabetes lies mostly on the changes of your lifestyle.

So I am somebody who likes to maintain a trust relationship with my patient, just like how we used to have family doctors before. So that trust actually to help heal the diabetes is what I feel.

And I like the statement in ADA which says that type 2 diabetes remission is possible, which is not discussed in majority of cases. And I thought I should bring that movement forward.

And that is my goal with this journey of being an endocrinologist practicing diabetes. Well, thank you. And a lot of people know that. Or in some way there's been a criticism of kind of the the the Western medicine in it, the lack of focus in addressing the root cause of Type 2 diabetes.

Right. So. And do you think that's fair that. I think the the accusation really came from the angle that we as physicians, we just give medicines, we don't talk about it.

How do you reverse how do you treat it? the underlying, the root cause. Is it a clear statement from a practitioner such as yourself? So honestly, when I was doing my fellowship, the first thing that my mentor addressed to any of his patients, even his type one patients, was that he always used to ask that occupation.

And then he went into the personal details and the next thing he said was always, Remember, the foundation of treating diabetes is diet and exercise. Anything comes after that.

So that was how I started my training and I truly believe in that. And honestly, everything comes some side effects like any medicine that we have. Why do we have to take some medication to manage a disease and have the brunt of the side effects and not forgetting the cost of the medications that's involved?

When we can choose something which is more natural to the body, more physiological, and then use that as a tool to cure diabetes. Now, one of the the root cause, as you said, that that arose from maybe inadequate exercise may be poor diet was the occurrence of insulin resistance and that's been the call kind of I don't want to be I think the people say it is the mother of all this of many of the cardio medical conditions.

But we can also call the father of it, if you will, And what is in some resistance and has been talked about so much to help our listeners to understand what it is and why is it so common.

So insulin resistance is basically decrease response of your body to insulin. Okay.

Understanding Insulin Resistance

So usually whenever we eat any carbs, you need insulin for your body to absorb and the major organs in the body to absorb insulin is your liver and your fat, which are mostly dependent on insulin to absorb the blood sugars.

Those are the storage organs. Right. But if we it could be genetic or lifestyle, but if we have visceral fat mass, which is deposition of fat around the liver, what happens is that the sensitivity or the response to insulin decreases so much so to in general terms, fat is the most insulin resistant organ in your body.

Let's say. And you have the same fat wrapping up around your liver. What happens is your liver, which was you before sensitive. Now it is more resistant to the same insulin.

So the way I explain it to my patients is let's say you needed two units of insulin to absorb like one slice of toast before when you were having assistance, you would require 15 units maybe, let's say, to absorb the same same amount of sugar by your liver because of the fat around the liver.

So that's what we call insulin resistance. And also now we are seeing it in patients who are so young, like, you know, they have this I candle just like begins, which is just lying around your neck that you see in some of our female patients who are slightly overweight or obese, if I would call them.

You know so those so the degrees responds is the driving factors for the burden on your pancreas, which burns out at some point. And then you would end up requiring insulin and the sugars start floating in your blood and you would see all these microvascular complications like heart attack, stroke, amputations.

So the goal for us with the diabetes would be to cut back on insulin resistance and dependence on insulin. And so Jhansi it sounds like a terrible causes for many of the conditions.

Would you say that one may see insulin resistance even before glucose start rising or only occurs after glucose start rising? No, we can see it before.

That is why we have this prediabetes and diabetes. So the first thing to form and to start with is instant assistance and then you progress to prediabetes and then you progress to diabetes where you see the shoulders that are already floating in your blood.

And when we check your blood, we notice that your A1C is higher than 6.4% or your fasting sugars are more than 126 or your 2 hours are greater than 200.

And that's when we call it diabetes. But like you said, you know that it is a progress. Mm hmm. How do our listeners

find out if they have insulin resistance?

Where are the signs or the other symptoms? Are there blood tests? What can they do to determine, to find out if they already have insulin resistance? Like I said, weight gain, obesity, especially the studies that have done that have been done so far, have shown that abdominal obesity is people who have abdominal obesity are much more prone to have diabetes in the future than patients who have their obesity centered in their hips and thighs.

So that's the first sign of accumulating your fat mass. And there's an increase in your waist size. That's the first time that you might be. Yes. So let's go there a little bit.

Is it just a measurement of your waist? Are there some other tools to know that there is fat inside your body? Yeah, The visceral fat mass, which is like body mass analysis, they you know, that is you have visceral fat mass and there's a separate component called lean body mass.

So, yes, definitely we have this going on. And so just to clarify for our audience, many of the middle aged men have what we call a love handle. Are those visceral fat?

Are they related to the resistance or that's a separate compartment. That's a separate compartment to visceral Fat is mostly about the position of something around Your liver, like I said, which increases which decreases your response to insulin leading to high blood sugar as the sugars floating in your blood or sizing.

But it doesn't seem to be routinely talked about or routinely assessed right. That component of that fat. And I know, for example, there are CT scans and ultrasound that can look into that, but it's not a routine clinical test, Correct.

That is never considered to be a screening tool, unlike what we have for like cancers. And yes, true. So we should breathe a sigh of relief that it's not the love handle that's giving instantaneous.

So yes, but we don't want that to either. But yes, Yes. Okay. Fantastic. And so now the relevant part read. The most relevant part our listener is going to have is, is what then can we do if if there is more fat in the trunk rather than in the hips, if they are overweight and their BMI is elevated, they know they probably have insulin resistance.

What can what can we do about that?

How to Spot and Reduce Insulin Resistance

Again, we're going back to the foundation of trying to help them with their diet and exercise before they progress to diabetes. But unfortunately, we our health care is not designed in a way that we deal with these issues in the beginning, but we rather make them flow towards the end of diabetes.

And that's when we start worrying about like bringing the sugar is under control rather than preventing them from progression or diabetes. And so as a clinician that are working the trenches every day, the what do you tell your patients when we know notice that they have central obesity or what are some of the what are some of the the this treatment you will recommend to your patients?

So that's a good question. So first of all, we need to understand the social barriers as well, because some of the patients, the when I bring up about diet, let's say, and we want to talk about diet in detail, we would get some sort of a resistance because of the socioeconomic status sometimes.

But then I always offer them a visit with our nutritionist because I feel like nutrition is a big part of playing a major role because I feel like you could always have the option of choosing good versus bad.

Right? So my first counseling with them would be a little explanation of what in some resistances and how they insulin resistance would affect them in the future because they might not have the knowledge of how that would affect them in the future.

And then what are the ways with decreases the resistance in the first place before it progresses, or diabetes and the foundation, diet and exercise and how they can calculate that into their daily lives without having to pay more or like without having to, you know, sometimes they don't understand that it is possible.

So we need to give them that hope and the options that they could include in their lifestyle. So let's go exercise. Right. Let's talk about that. What kind of exercise are helpful?

Is it one type? It said, What do you recommend in terms of the intensity or the types of exercise for your patients with the resistance? Moderate intensity for 45 minutes, at least five days a week.

And is that what does that look like where moderate intensity, does it involve running? Does it involve weightlifting or and there's been a lot of discussion around that, right?

Is it more aerobic that's more important or is it the the stress resistance exercise? I would feel stress Resistance is much more important with the time that they have to help with visual fatness than aerobics.

But honestly, whatever they could have, let's say they have only some time for them. Then I would say if walking is the only thing they could do, then I would just say, just start with that and then progress.

Yeah. But strength training, I feel like it's much, much more important to reduces. That's a very pragmatic approach, right? Yeah, we could debate about like what's most and what's the optimal, but the reality is just get started, right?

So that's, that's a very important point there. And you do mention 45 minutes. Is it in one sitting or is it in multiple sitting or what they could do what is pragmatic.

Yeah. It whenever they can do I see that some of my patients while they're at work sometimes when they have like you know, some time for some time at work where they're working on the lamp, they use it just bands for the legs so that they could just do the resistance exercises.

So somehow they can incorporate to combine to 45 minutes. But if they could do at least like 20 minutes at a stretch, that's good. And just just a quick poll here of your patients, how many percentage of patients actually you think are actually following these advice, these exercise advice?

To be honest, in general, maybe 20%? I would say yes. And why is this so difficult, you think? Because everybody knows these knowledge, right? So are there are you actually motivate your patients to to do this?

Because everybody knows diet and exercise is just the everyday implementation that's challenging. Are there you know, with with your experience, what are some of the tips and what are some of the insight you can you have to motivate your patients to do this?

Unfortunately, we have a health coach program in our in our in our practice where the patients at school for themselves and the health coach makes them drive those.

So let's say the patient says, okay, from now on I'll invest 15 minutes of my time into exercise. Health coach follows them in a week and ask them like, How did you do with your goals?

Some patients like it because they feel they're more accountable and will schedule frequent visits with the patients, which sometimes is not possible always.

But we try to stay in touch with them frequently. And number three would be, I don't know if this is a good thing, but sometimes we discuss about the bad complications that they would see at the end of the day.

So sort of the negative motivation, I would say, seeing that, hey, we are not doing this for ourselves at this point. This is what we are looking at. The future.

Do you want to be dependent on someone because you have amputations and all of that? So, um, so is both a push and a pull, right? So you want to draw them to good things, but at the same time you want to push them, nudge them a little bit towards that, those lifestyle modifications.

Exercise, Diet, and Patient Motivation

Okay. Now let's move on to even a bigger topic of diet edges. So, so many controversy, so many different types and so difficult to do it on a on a daily basis.

And what are some of your general like big takeaways after seeing so many patients, what do you advise your patients? So honestly, most of patients do well when it's more regimented than me discussing, saying, Hey, you have to swap these things with this, you have to stop doing this.

Instead, they feel like having a regimented routine or following something actually helps them lose their weight more or follow follow something like, for example, Weight Watchers.

Some patients do it because they feel like they're more accountable. And some of my patients, they want to meet the nutritionist because some patients like skipping things like let's say they have soda in their diet for the next three months before I see them.

That's their goal, skipping things. And some patients come with some fad diets that sometimes I don't even have a clue. So we basically discuss options.

What would you like to do? Some patients like intermittent fasting and then eat whatever they want to eat during the break, fast break. Some patients like it.

Also, some patients don't like ketosis, so it's a myriad of options right in front of them. But I think I feel like it has to be tailored, supervised and sustainable in the longer term. So.

So you think that medical supervision is especially important and why is that? Because, you know, when you follow a diet and then you lose your electrolytes sometimes, right?

Sometimes you might have low blood sugars. So somebody supervising you to assess because all of this is medical, right? You do something and then you have low blood sugars or.

Her. Condition requiring you to have VR visits or admissions to the hospital is dangerous sometimes like low sodium, let's say. So those so you take away is that you should always discuss with your health care provider before jumping on a certain type of diet.

You know, I was really caught up by by you mentioning intermittent fasting that that is actually the latest survey that talked about this is one of the most common eating habits of Americans right now.

More than 10% of Americans are doing some sort of assessing for their health. So what's been your experience with this? I, like I said, it is very good people follow that for a certain amount of time, but they feel that it's not sustainable long term.

So but otherwise, intermittent fasting is great. It has been shown that the results are good, they lose weight on that and then some resistance comes down.

But at the end of the day, how sustainable it is for you to follow for a lifelong routine. Now, prior to this interview, you were mentioning one of your patient is on a specific type of fasting mimicking diet.

And can you tell us a little bit about about that experience? So this fast mimicking diet? Honestly, I came to know about it from a patient of mine work, wanted to do that and he wanted my help because it is a medically supervised diet, right? So I got to learn more about it.

After meeting some of the experts in the field and learning more about it. And I felt that maybe this is the one that might help my patients. So one of my patients was a 51 year old female.

She also has fatty liver disease. Right. And she was poorly motivated at that time to maintain her blood sugars. Her A1C was around 8.

Intermittent Fasting and a Case Study in Remission

3% when I saw her and she's already on metformin and GLP 1 agonist, which are the the treatment right now that GLP 1 But she's not motivated and she doesn't want to be on the medications because of the side effects like she has bad nausea and vomiting, but she's tolerating them because of the hope that that might help her blood sugars.

So I thought she might be the candidate. And we discussed about this fast mimicking diet, how your body, when you were fasting for five days, would push it would push it into a shock that would help reduce insulin resistance and the benefits of reducing your rate, your blood sugars and coming off of medications.

And the goal of diabetes remission. Right. So she was very interested and she started the diet. It's a five day diet. So five days for a month, for six months.

And then the maintenance fees was five days for every three months for the next six months. And she can choose to do it for the rest of her life. The catch for her is, oh, it's just five days in a month.

That's what's out of it. And also she gets help from a dietician whenever she has any questions. So she started it and thankfully I just saw her yesterday.

So she finished four cycles of it. She's off of all her diabetes medications. All of the diabetes medicine. Wow. 4 cycles. That's five days for four bottles.

So that's 20 days of effort there. Yes. And she lost 26 pounds. And her A1C is 6.2% now So with four cycles, it came down 8.3% or 6.2%. And we are still waiting on her liver numbers.

She's following with that hepatologist next month. But I'm hopeful that that's going to get better as more and more than this. What I liked about this is her husband, who does not have diabetes and is not following this diet, also lost 15 pounds because of the way she changed her lifestyle.

I see it that's amazing. That's amazing the way she got motivated. And even her husband, who was with her, also got motivated and lost 15 pounds. As collateral benefits. Right.

And the family has metastatic. Yeah. So so this this fasting mimicking diet group and I think you mentioned earlier it's one of these innovative approach to diabetes remission. But maybe the concept of diabetes remission is still a new one for our audience.

Can you speak to that a little bit? So the ADA guidelines mentioned that if your A1C is less than 6.4% for more than three months and you're off of any diabetes medications, then we can safely call you could be in diabetes remission.

Honestly, I never knew about it Throughout my fellow throughout my first year of fellowship and I got to know about it when I was working on this project where the pediatric surgeon was who does the sleeve gastrectomy is looking into diabetes remission.

And then what is diabetes, remission and the like. Oh, it in the ADA first page of ADA if you go into that. So it is possible and you don't have to have surgery and having options like this way, you don't have to go through surgery and being free of medications and not having diabetes is it's a miracle.

Yeah, that that that is a really news that many of our listeners have not heard before. I think the program, but it's

called L-Nutra Health or L-Nutra Health is the name and you could go to l-nutrahealth.com again.

L-NUTRA That's L – N U T R A health.com (l-nutrahealth.com) Dr.

Diabetes Remission and Final Takeaways

Maradana Thank you so much for for just giving us a really a in-depth look at insulin resistance, what it is and how to treat it. And you ended up discussing this case, the patient case that you have anything else maybe maybe your conclusion for our patients or our audience looking to combat insulin resistance, is there a story last minute kind of summary that you can give it to them?

What would you say to that? Start working now. Do not delay. So don't wait. Don't. It is now or never. Do it. Do it, Do it. Dr. Maradana, thank you so much for this wonderful interview.

Hope to see you again. Thank you. Dr. Hsu. It was a pleasure.