Introduction and Dr. Hsu's Background

Hi, everyone. Welcome to the Reversing Type 2 Diabetes Summit. I'm your host, Dr. Beverly Yates, ND Today on this session, it's my distinct honor and privilege to interview Dr.

William Hsu, medical doctor who has spent all of his career working on the things that affect type 2 diabetes, prediabetes, and blood sugar control. He has a fantastic record and a specific point of view that he's going to share with us.

I can't wait to get into this interview for some of his background. You know, it's just so interesting the journey that life can take us on. Right? He's had over 20 years of a distinguished career as an endocrinologist or hormone specialist at Harvard Joslin Diabetes Center.

He also joined L-Nutra in 2019 as chief medical officer, and in his current role he leads their clinical development efforts at L-Nutra, overseeing the medical and scientific affairs departments, and leading the launch of a disruptive health program for L-Nutra, for diabetes, remission and regression among prior roles.

He served as Vice President Harvest Joslin Diabetes Center, spearheading its global health care advisory programs. He's taken a leading role internationally on making a difference around diabetes care and making it so people can reclaim their health and take charge of glycemic control rather than be at the whims of seemingly of what's going on for blood sugar care and where diabetes care often fails to meet people where they're at and help them get to where they go.

All right, Dr. Will Hsu, welcome to our summit. Thank you so much for inviting me to your summit. I'm glad to have you here. So let's get into it. I would love to know why did you leave Harvard Joslin Diabetes Center to join L-Nutra?

Yeah, that's that's that's what what my family asked me as well. It's a common topic amongst friends and family because I have been at the Joslin for all of my career.

Prior to joining here. at L-Nutra. I have to say that it's really at the right moment in life, but also there's a little bit of this contentment, if you will, looking at the care that's being delivered around.

I had a chance to travel around the globe. In fact, I travel professionally to probably 30 more countries, 30 plus countries helping people. And then try to put together diabetes programs.

Why He Left Joslin for L-Nutra

But the theme is always the same with the advancement of therapeutic technology, we've been able to give people a prescription that put people on a drug to drugs through drugs.

And very quickly, you see that people with diabetes are on five six drugs from aspirin to Lipitor to metformin to ACE inhibitor. I mean, the list goes on and on.

And every time we see a doctor or a doctor in or out of his or her, good intention gives us another medicine. And so there's one day I was sitting in the clinic taking care of the patients, and these people come from many places outside of Boston to seek best care.

The problem was I was offering the same modality, the same treatment that any physician could prescribe anywhere. And I was just beginning to get a little bit dissatisfied with kind of the unique or any disruptive solutions I could give to my patients.

And so it began to really ask, like, what could be better, what what should be really the goal for diabetes treatment and that that may take the whole interview process for it to come out.

But but it's that that initial pull it's not so much of a push but a pull in my heart. I said there's got to be a better way to treat an age related and environmental related disease such as diabetes.

Absolutely. You know, this is an international phenomenon, as you well know, and people attending the summit are well aware. People are watching and viewing this and sharing it with friends and family from all over the world, all walks of life, diabetes, particularly type 2 diabetes, prediabetes has become this rising tide of chronic illness that you and I both know we can do something about and get it into remission and reversal and to help it.

But meanwhile people need the tools that will be effective, right? So what would you share with people? What is missing in the current model of diabetes care?

I have a lot of respect for for all the technology we have. Please don't get me wrong. You know, I love the tools we have on diagnostic and get to know your blood sugar.

I love all the diagnostic criteria. I love all the tools, including medicine. I as a as a conventionally trained and apologist, I don't have anything against drugs, but I think we're too busy as a society.

We're too busy as clinical practitioners. We have very little time really addressing the root cause of a age related condition of a food borne disease.

Let me clarify that. I see diabetes, a food borne disease. I don't mean that there isn't genetic components to this or or epigenetic components to the development of type 2 diabetes. But but we're seeing this upsurge in the diabetes incidence, new cases, diabetes.

It cannot simply be genetics because of our genes kind of have changed in a lifetime. In a in 20 years time span, there is the interaction between the environment and our genetic makeup and our personal decisions in the policymaking and in our society in general.

Right. Really pushed this, you know, this this situation to where there are 38 million people, probably up to 40 million people now that are affected by diabetes in the United States today.

But we finally have time or the means to effectively address the root cause of type 2 diabetes. It really is a gap, isn't it? You know, and there's a lot of people trying to close the gap and there's a lot of misinformation out there, as well as sometimes active discouragement or maybe people are surrounded with others in their life who are helpful and the person themselves may be starting to lose hope.

You know, it becomes more and more complex. You know, 1950s advice of eat less and move more isn't enough in today's busy world. I agree with you 100% on this.

So as we tease this apart for the things that you are now working on and you know why you left one aspect of your career to go to another aspect, it would seem to me that the healing potential that's represented by intermittent fasting is a core part of that work.

Would you share with us what it is you find about that that's hopeful and effective? Yeah.

Whatu2019s Missing in Diabetes Care

As we look into new ways to address diabetes, as we know there's there's a huge emotional component to diabetes. We eat because you're hungry, but we also eat because their emotional needs.

Sometimes we even we're lonely, sometimes we eat out of joy, sometimes we eat out of company, sometimes we eat out of loneliness. Right? So there is a complex area.

Are around our behavior when when we begin to address diabetes as if it's only pathophysiology, when we begin to address disease, states thinking that a prescription could help.

That's when we are practicing sick care. When we are already sick. Of course, you give us a therapeutic to to try to control a horse that's out of the poor.

Right. But I believe that the body is lot smarter than that. In other words, when you get a cut in the skin, what do you do to help the heal you? You put a Band-Aid on literally speaking.

You put something just over a you allow the body to heal. So there are true healing potential. There are internally resonant within the body. I think 21st century medicine has began, has just begun to uncover.

So in animal studies, in rodents, for example, if you expose the rodents, literally road rodents is specific species for sure periodically to a periods of fasting.

You think that they're going to die of starvation or they're going to be too weak to fight infections. But in fact, the opposite is true that as you fast these the litters are rodents in an experimental condition, they actually live longer.

So that's so counterintuitive to a society where we're constantly driving nutrition, Right. We want we want to eat food. We want to eat nutritious food. Those are certainly poor.

But we have begun to notice that there is an interesting intersection between three components. There is everyday nutrition, fasting and then longevity.

And that is something we've begun to uncover through basic science research or clinical research and basic science research. So so over the last couple of years, Beverly, as you know, that many Americans in practice are practicing some sort of intermittent fasting, and that's generally defined as fasting.

That's less than two days of of no food and anything beyond two days. We call that either prolonged fasting or periodic fasting because you're doing it periodically.

It's very important for our audience to know that these two different types of fasting are actually they actually have different impacts on the body. The intermittent fasting are easier to do.

And what are the most common, what is it's called the time restricted eating. That's when people restrict their eating within a certain window, let's say 16 hours of a day, and then you would limit your food consumption to 8 hours of the day.

Those are that those practices belong to a form of fasting called intermittent fasting. That's all the praise right now. In about 10% of Americans are doing some sort of intermittent fasting.

But the 2016 Nobel Prize has in cover actually a different mechanism for a longer fasts. So the longer fasts, I mean, the traditional conventional spiritual fasting, religious fasting that many of the cultures have practiced all around the globe, every culture, every religion has a component of fasting to it.

Why is that? Because the impact goes beyond metabolic. There is a because when you are when you are kind of going through a fasting for four or five days, things like that, you actually go deep into the cellular health.

Fasting, Autophagy, and Cellular Rejuvenation

So there is a cellular health component that intermittent fasting is probably just not stressful to, to cause. Allow me to explain. It's almost like it's almost like a financial stress for a company.

Or if you run your family finance right there is when when the revenue is down 10%, you tell everybody to be careful on the spending. You're not going to do dramatic changes on the way your family functions, your practice

functions.

But think about it, if you're down by 90% of of of find it on your revenue, what are you going to do? You've got to restructure. You've got to move, do layoffs.

You have to fundamentally change the way the company yourself, your finance operates. So by the same token, when the body does not see calories for a couple of days, it sinks.

It's going through this existential crisis and it's going to forced every cell in the body to want to restructure that forces the cellular restructuring is called autophagy, which one in 2016 Nobel Prize in medicine or physiology.

So simply put, so in times of calorie deprivation, when there is no food around, the cell says, hey, look, I don't know when food is coming, but I got to survive.

So I'm going to begin to chew down some of the cellular components, too, for energy. And so it's certainly not going to kill itself by chewing up the nucleus, which is really the brain of the cell.

But what is going to start is going to be those cellular debris, misfolded proteins, dysfunctional mitochondria or some of the parts that are more dispensable.

So the cells during times of prolonged fasting chews up those ingredients for as a source of fuel. And guess what happens when food becomes available again, It's going to grow them back.

But you've got to grow new parts back. So in fact, when nature deals with, as Odell does with a hand of of of starvation or of periods of prolonged fasting, the living organism have have to adapt to a new mechanism to counter that through the cell.

They're shrinking cellular glands and regrowing back. And that's really the miracle of life. Now we term cellular autophagy. So those longer phase are really leveraging these mechanism of cellular rejuvenation and it has many clinical implications, applications which we could talk about later.

All right, great. So that's exciting to get the background on this. You know, it's been so interesting and I'm glad you brought this point forward that every spiritual tradition around the world known to human kind includes an element of this aspect of fasting.

I think there is that inherent wisdom that we've known for thousands of years. And now in today's busy, harried, cortisol, nation overtaxed world, we need those reminders to go back and, you know, just keep it simple.

And in an environment where people are inundated with adds to the stuff, their face and the food is all shiny and bright and full of all these bizarre chemicals, I mean, it's just an unusual moment in time.

And I just I really hope we can survive it because I feel like there's a kind of pressure on people now that wasn't necessarily true before it. It makes it hard to really do a proper fast.

Yeah, You know, fasting a lot of times a lot of people see that as something that is difficult to do. But but actually, you and I practice fasting every single day, believe it or not, when we when we sleep.

Right. So it's really extending that period a little longer. And there are so many ways to help us today, especially with with new technologies and so on, so forth.

So we're at a good time and the science has begun to show that benefits of that. But I always talk about fasting not as a singular sort of intervention.

It's really the alteration between fasting followed by good feeding. With that that completes the cycle is the yin and yang of health. You can talk about nutrition, you can talk about exercise without talking about the rest. It follows

that.

Correct? Restorative. Right? Yeah. Yeah. Absolutely. So so what I'm hearing you say then is that our guts, along with the rest of the metabolism and our spirit, our soul, our psyche, all of it means a chance to reset and rest and restore in addition to, you know, the obvious things, like if we have intense exercise, we want our muscles to have a chance to have restored restorative time, right?

Professional athletes, Olympians. We've seen that. We see that with regular folks. And so you're implying, I think, that the gut needs that time to to have that restoration.

Not only the gut or liver, our muscle, our brain, everything needs a touch. It's amazing what a little bit of a break from food can do for us. Right. So, you know, Doctor, you know, in our society, we we strive after performance.

Everything is like high protein. Everything is is high, you know, quality foods. We need that. Absolutely, we need that. But think about your favorite racecar is going.

It's performing. But at what expense? The tread on the tires. That's why when you are performing at the highest level, that is in the race, what do they have?

They have pit stops. Why you change the wheels you take out, you replace those, you give it a little break, right? You need the replenishment. You need the pit stop.

Starting in a high paced world, in a high nutrition society like ours, it's like a pissed off for your body. The cells need to go into rejuvenation or that stress resistance state.

That's often a hallmark when you go through a fasting phase, and it's something that we don't emphasize enough in today's in today's world. I agree with you.

I agree with you. Okay. So here we are on reversing type 2 diabetes, and we're talking about practical ways for people to get a hold of their blood sugar and glycemic control, get some balance and be able to heal.

Right. So when we talk about remittance reversal, things of that nature, remission rather reversal, things of that nature, what is the role of a fasting mimicking diet and that food?

And why is that an important part of this toolbox?

How Fasting Mimicking Diet Works

Yeah, you know, all all this discovery really came out of the wonderful lab or university of Southern California. This is really the lab of Professor Walter Longo, who is the director of the Longevity Institute, and also the Longo lab over there in 2017.

They did a fabulous study. They took rodent models of mice, essentially put them on this fasting mimicking diet, which I explain a little bit more about what that is later.

But in the model, the rodents with with type 2 diabetes were able to actually normalize their glucose blood glucose after a few cycles of the fasting mimicking diet and so and meanwhile preserving their lean body mass, their muscle mass, while shedding their visceral fat.

And so that early study inspire a whole lot of clinical development work that led to today's diabetes remission and regression program by all neutral health.

Okay, so now this is an important distinction because being able to preserve muscle mass in the midst of a fast because for some people they are losing muscle, Right.

Depending on how they're going about things or whatever their preexisting conditions may have been. And some people, as they get older, they're very much at risk of losing muscle mass, also called sarcopenia.

So in the midst of all this, you're trying to balance these things and keep people healthy. We all know that blood sugar control depends to some degree on muscle mass, right.

Like active working muscles are blood sugar sponges. Then why is it with fasting that the mimicking diet can preserve that muscle mass and help them to get rid of that visceral fat, the belly fat, that trouble maker, inflammatory fat that causes so many problems?

Yeah, that's a really good question. And when the body fat is very different in a chronically restricted caloric restrict diet, if you're on a 500 calorie less diet every day, let's say you consume 2500 calories, you're 500 calories less every day.

What happened is almost like a slow drip on the faucet. You know, it doesn't this is drip, drip, drip, drip. Your calorie drips. Right. You lose weight very, very slow.

It's not enough to eat. It doesn't cost response because you're just dripping very slowly. Are the faucets dripping? Right. So so what happened is that when you lose that way, the body doesn't trigger the defensive mechanism.

It's just says I need more calories or I'm losing calories. So I'm going to basically burn fat as well as I'm going to take the muscles is indiscriminately using calorie sources when you're losing weight electronically.

So it happens with some of the most common drugs that we use for weight loss today. It also happened with calorie restriction, but fasting on a happens on a very different level because is often there's no food.

The body senses that as a as a stress. Right. Because you're dropping 90%. Right. You're dropping that stress. The stress is going to cause stress response.

And that insurance gives that growth hormone a boost. The growth hormone that supports the muscle, very different. That is slow, you know, dropping calories every day.

It's not enough stress to cause the growth hormones to to to support muscle mass. The fasting mimicking diet is formulated to simulate a just like water fast, but gives you some nutrients so you can support the body further.

So common people like me, I don't know about for years you look at the you look like you're very special person. But for me, the average Joe, I can never fast for five days okay on water that little bit of nutrients through the fasting that they can dial helps to support the nutrition needs of the body while you reap many of the benefits without without triggering these nutrient sensors.

And so so through that, you lose the fat because the body thinks you're fasting. So it's going to burn fat. But spears the muscle because the stress maintaining the muscle mass, they give you one example.

You think about the big cats like tiger lions in the wild. They'll eat 24 hours a day. They they go for a big hunt and guess what? They then go through a fasting period until the next hunt.

Think about in between the fast if the muscle gets depleted because because the lions are tigers are hungry, they're species, but they're very existent now or continue to thrive because of fast.

They cause their stress and cause this surge of growth hormones that maintains muscle mass. The low is in the tiger is they are able now to plant the next meal and it's all part of it's all get gets played out very invisibly in nature and we just have to pay closer attention to it.

Yes. The examples, the clues are around us, if we'll just look. But meanwhile, we need to make today's lifestyle as busy as it is. Work for people. And we know that people have a wide variety of circumstances that they're in.

And some of the misinformation that goes on, like people will say, Oh, if I have bone broth and my fasting, you know, it's just there's just so much confusion out there.

Not understanding the bone broth has its own nutrients, has electrolytes, it's got protein. You know, it's like fasting and fasting. So if you have a fantastic mimicking diet, it sounds like you're getting the benefits of the fast without having to necessarily completely go to zero on what you take in.

Yeah, and this is really the pattern that as a discovery. All right USC, you see every cell has got these sensors that senses amino acids and glucose, right?

We call the nutrient sensing pathways or nutrient sensors. These they have names like mTOR, like protein kinase, A, and, you know, IGF one, insulin receptors.

So when these receptors see nutrients flowing around in the blood, it tells the cells to grow. Now, if you're adults like you and me, more growth signal may not be the best thing for us right? This is where we gain weight.

This is where cells get these tremendous pressure to grow and replicate. That can also mean mutations and also can be can be more chances for for some cancers to occur and and so on, so forth.

Right. And that's why if you are able to devise something or a set of nutrients that you just provide just enough below the thermostat of these of these nutrients as you're meeting the need, the threshold detection threshold of these nutrient sensors, it's almost like a thermostat in your house.

If the temperature doesn't hit a certain level, it doesn't trigger. If we provide just enough below the detection thresholds, then you in fact, you can mimic fast.

And yet at the same time provide nutrients. That's 21st century science. That's the best of both worlds. That way people don't get into a depleted state that, let's say, is destroying their muscle mass, etc.

They still get the opportunity to burn excess visceral fat or belly fat. And I want to make one point of distinction here, and please tell me if you agree that we can't just diagnose people by looking at them.

So if someone is lean, it doesn't mean that they have too much visceral fat. They may have more visceral fat than someone who appears to be overweight and obese.

You can't just look at it. So don't make assumptions, folks. That's exactly right. That is, you know, when I was back at Joslin Harvest Diabetes Center, that was actually area of my research.

I actually studied people that didn't look very overweight but actually have high rates of diabetes. And one of the one ethnic group was especially prominent in terms of displaying this feature.

We call it the we call them phenotypically lean but metabolically obese. Right. And that's that's actually the Asian-American population. If you look at them generally, it's they're not characterized by having a high body weight, but the rates of diabetes is very high in that population.

And so, yes, look, could be deceiving metabolism can be displayed in so many different ways. And and you're absolutely right. I want to echo what you just said.

All right, cool. I just wanted to make that distinction because I know some of our colleagues don't always do a good job of explaining this or have their own preconceived notions and biases.

I know for where I've practiced, in the places I've been, I've been very observant about who has what. And as I see this alarming rise in diabetes incidence, I can't help but notice that like about 40% of so people who have type 2 diabetes are actually mean.

They are not overweight or obese. So, I mean, if, you know, you just have to like scratch your head and go, okay, we need to think a little more deeply here. Yeah, for sure.

Common Misconceptions and Mistakes

I think it's a function of two things. One is that the percentage body fat could be very deceiving, you know, and that's why the preserving muscle mass is actually really important because because the muscle is responsible for about 80% of glucose disposal.

In other words, that's where the sponge where the blood glucose gets soaked up. And so the muscle, more muscle you have, the more functional your muscle is, the more places these glucose can go to rise.

So number two, the location of the fat is also critically important by Dr. Yates. You mentioned a little bit earlier about the visceral fat. Visceral fat is one of the most metabolically active fats is also one of the worst fats in the body whereas secretes all kinds of inflammatory markers is associated with all kinds of cardiovascular negative outcomes.

So you're absolutely right. So so look, it could be deceiving because of the percentage body fat could be hidden under the skin. Number two, the location of that fat could be could be detrimental.

All right. So now as we uncover this right, we're unpacking this as we go, will share with us what is amiss, understanding that people commonly have around the idea of fasting, fasting, mimicking diets.

Are there any common mistakes that people make? Yeah. So so you alluded to a little bit earlier, like bone broth and others, and I chuckled because it's so common.

A lot of people feel like, Oh, there are two common mistakes. One is how can you eat? Is still killing, fasting. So I wanted to go there a little bit later explaining the fasting, living and die.

And the other one is, is I just had a little bit of something. It should not break my fast, but just think about it, you know, a protein, for example, is one of the most potent stimulator for cellular growth.

We all know that. And that's why our society loves protein, right? So if even though your calorie consumption could be very low, but if it's high protein, it's it's the wrong type of protein, it could trigger the nutrient sensors.

Right. So each amino acid has a different rate for triggering nutrient sensors. And that's why I think the DIY way of like try to mimic fasting is a difficult one because it just so much science is so complex in there a little bit.

For example, a little bit of juice should not break my fast that that's totally wrong because the juice can have fruit in there and those glucose are going to trigger these nutrients as there.

So that is a common mistake people. Okay. Okay. So with this in mind, I'm going to ask you the question because I know it's on people's minds. How can you eat and still call it fasting?

Yeah, yeah. I think that's really, really important. And this is where I will try to explain a little bit earlier about the thermostat. It's really all about how much you're giving in a scientifically measured way.

And we've done the work $36 million of the National Institutes of Health funding to develop this technology called the fasting mimicking technology. There are specific nutrients.

Many factor in the string in a way that in its totality is not going to trigger the sensing of the nutrients is still going to cause cellular autophagy.

It's 20 years of work. It's hard to summarize, but that's what the NIH funding was all about. This is where it why we had 18 clinical trials published and we'll have 14 clinical trials ongoing at the moment.

Great, great. So I know you're busy with this. You're hard at work with it, trying to give people a I'm not trying succeeding in giving people a viable tool that they can use practically in their everyday life, as well as putting the clinical science and focus on it to understand where the levers of opportunity are.

And so people's lived experience is that they're getting healthier, they're preserving their muscle mass, they're able to burn that troublesome, visceral fat and also feel like this is something they can do that is healthy choice for them, that is sustainable.

Are there any other myths or preconceptions that people have that simply aren't accurate when it comes to a fasting mimicking diet? Well, I think the contrast because intermittent fasting so common a lot of people feel like I'm doing intermittent fasting already, you know, why should I do a fasting living diet?

I would like to say that those have a place in a healthy lifestyle, intermittent fasting. It's great for metabolism. You're giving the body number of hours where you're not exposed to food.

So the liver gets a fast, it gets a rest, your gut gets a rest, your cells get a rest. That that's fantastic. But as I mentioned a little earlier, to get the kind of a solar impact, a healthy aging impact, you've actually got to cause stress.

Now, we know in today's American society we hate the word stress, like why? Why would you want to stress right. But think about stress is what actually knock us out of our inertia.

Yeah, exercise is a stress. You're tearing apart these muscle fibers. If that's not stress, what is it? Right. In fact, immediately after exercise, you have higher inflammation because you've got these two pairings of this right, these muscle fibers.

Exercise, Sleep, and Fasting as Core Health Tools

You're causing disruption, micro tears in the muscles. But it's not about that temporary stress. That's right. It's everything. It's the temporary stress.

And what happens afterwards? The body uses to leverage those stress for rejuvenation, sending with prolonged fasting, fasting, mimicking diet. It's very different than intermittent fasting.

The mechanism action is different because the stress of no food, it causes restructuring of the cells and it's got to hit enough hours of fasting to trigger that.

And oftentimes I use the analogy of of cleaning the house, you know, on the weekends we might like dust things off and like, I don't know, that is the reason, you know, that's my job on the weekends that.

Are good for you. And I can't. Right. But on the weekends I don't take down the curtains. I don't shampoo the carpet. That's for spring. That's for a change of season.

Yeah, it's spring cleaning, right? Literally. There we go. So, so, so a prolonged fasting like fasting, mimicking diet has that deep, clean, clean. A cleansing function for the cells is something that intermittent fasting simply cannot get to the times too.

Sure, the stress is too low, so that's a common misconceptions. Intermittent fasting. While it's great for health, for metabolic health, before healthy aging, for cellular rejuvenation, for cellular autophagy, you got to go deeper.

That's when restructuring happens. Great. Thank you. Those are important distinctions. Fans rewatch this, take notes, share with everyone, you know, who cares about health and wants healthy aging and looking to optimize whatever genetic card you may have been dealt.

Because these are really the things that we know. It's a data science as well as ancient traditions. This is what

actually works so that we can live long and live well, not suffer as we get older.

Okay. What's the role that exercise got to ask? What's the role that exercise plays in all this? Yeah, well, I think it is. I believe there are multiple systemic lifestyle things that we do that have so far reaching impact.

Exercise is one of them, right? So you think about which drug can actually rival the benefits of exercise. None. None and none that I know of. Because how is it possible that one intervention exercise is good for your muscle, good for your fats, it's good for your heart, it's good for your bones, it's good for your brain, It's good for your mental health, it's good for your everything.

How is it possible? Because its impact is Well, it's it's upstream, it's systemic. The there is another equivalent, a chlorophyl a to think about sleep.

How is it possible when you don't sleep, every function of the body deteriorates? I know that Dr. Yates, when we went through schools, right, residencies and trainings and others, those long hours are staying up.

Sleep deprivation destroys everything you get upstream and systemic so it's important. I'd like to propose to you below with exercise alone with sleep, there's another intervention that is equally powerful upstream systemic fasting.

You know that there are just the pose as really key components of a healthy lifestyle. Absolutely. You know, I think that these are the kinds of things that if if I had my way, we could teach this in middle school and high school and on everyone would have access and would understand the care and maintenance of self and how to optimize whatever their health situation could be, I think we would just avert so much human suffering and we just want to bring clarity to these moments.

So when people are gathered together in this format, you know, here on assignment or wherever they get information from, it's from experts, it's science backed, it's credible, and it actually works for real people in today's world now.

Diabetes Outcomes and Program Results

So if I'm if I may bring the connection, this is this is the diabetes reversing diabetes, suddenly maybe I can bring the connection back. Fasting with diabetes.

You know, it may seem that, you know, why would you want a fasting in diabetes is kind of dangerous, isn't it? Right. So so I wanted to address that head on.

We're actually, I would say something very controversial, Dr. Yates, I'm actually against fasting now. Okay. Allow me to explain. You're doing because fasting is difficult to do.

I don't think 5% of Americans are going to fast, Right? I mean, I'm talking about fast enough to to to allow the cellular rejuvenation to occur. This is why I'm for the benefits of fasting.

I'm actually not for fasting. And it is why this is why fasting, mimicking die has a role because we actually advocate advocate eating to get the benefits of fasting.

Not so much fasting. All right. Okay. That's important. So basically. What's the connection here to diabetes? We publish a paper about a year ago in Journal of Clinical and Knowledge and Metabolism that showed five days of fasting mimicking diet.

The five day meal that I was telling you about that mimics the fasting without without triggering the nutrients in pathways, but at the same time provide some nutrients just five days a month straight for six months.

So we talk about 5×6, 30 days are intervention in half a year was able to lead to a drop of 1.4% A1C Right. So a

glucose average drop of 1.4, right. Can rival any medicine, number one.

Number two, it led to about on average four 22 pounds weight loss and visceral fat while preserving lean body mass in reduce homa ire, which is a marker of instant resistance by by about 50% and it also reduced micro albuminuria, which is really a sign of of protein leakage in the kidneys of diabetes, complicated marker of diabetes complication by 60%.

Wow that's a big deal. The blood sugar, they hate it. Yeah, but but think about it. I mean, you think that. Wow, okay, those are pretty impressive. But the most important thing is we are able to achieve that.

While two thirds of the people in the study were able to reduce their reliance on medications. So So you're talking about getting all these benefits with less medicine.

And this is why Dr. Yates, I'm so excited about the all natural health program for diabetes. This diabetes is no longer just about getting your sugar and sugar control, but it's about fundamentally addressing the cellular rejuvenation aspect.

So the cells become younger. They're able to be more resilient, and we are restoring metabolic functions through repeated simulated fast. That's why I said I'm against fasting.

I want you to eat, I want you to eat the right nutrients that don't trigger these nutrient sensors. So we will allow the body to actually rejuvenate itself.

And we got the studies to show that in June we are about to launch this program. It's called L-Nutra Health for Diabetes, where we're setting a higher bar to aim for diabetes remission and regression is not simply getting to you to be more medicine to in order to control diabetes.

That's exciting. You know, a wonderful moment and great progress because this is available to the general public and it's called the evidence base behind it and the results.

And to help make that difference in this tsunami of disease that's unfolding from around the world. All right, Dr. Hsu, thank you so much. I really appreciate you as a colleague.

Where to Learn More About L-Nutra Health

Well, this has been a delightful conversation. Where can we get more information if we would like to connect with you and with L-Nutra? So we have a website set up called the L-Nutrahealth.com.

So that's where you can get lots of the information, but you can also drop drop us an email at So info@l-nutrahealth.com. Let me, let me do this again.

You can drop us a line by email and the email address is info@l-nutrahealth.com. All right, great. And that is info@l-nutrahealth.com So that's l-nutrahealth.com right?

Perfect. Okay. Make sure people are really clear. Thank you so much. This has been great. Really informative. You've made all of distinction, a point that are important for people to understand about the different things that they hear about.

And we can just, you know, bust through the noise that we get on the Internet and social media channels, because sometimes people put stuff out that just it's just ridiculous.

But if you are a professional, how would you know that? And if you are professionally not up to date, how would you know that? Right? So here we are together in one place to make things clear.

Thank you so much for the work that you do and I wish you continued success. Thank you. Dr. Yates.