Introduction to Fasting and Longevity

The secret of this fasting nutrition is that it mimics a state of fasting to the body. So every cell of the bodies thinking it is fasting and therefore does whatever it learned through human evolution or through our existence on the planet.

This is the Longevity CEO, where we explore the science of metabolism, cellular renewal, and the future of longevity. Hello, everyone. this is Dr. Joseph Anton, your host.

for the Fasting and Longevity Summit. Today I have a fantastic session for you. I'm honored and it's my pleasure to be talking to Dr. William Hsu. He was the vice president of Harvard's diabetes clinics.

They're called the Joslin Clinics. The number one clinics in the world on diabetes. So, if you know somebody with diabetes, If you personally have diabetes or you're pre-diabetic, This is the session you definitely don't want to miss.

Dr. Xu, I've known you for four years. It has been an unbelievable pleasure. I want everyone to know your journey. You had a fantastic life journey and I wanted everyone be inspired with it.

And then we're going to talk about the current status of treating, you know, diabetes with current sick care system. And then how can we a little bit inspire people to reverse their diabetes or remit their their diabetics with new technologies in the market?

Welcome to the to The Summit Doctor Show. Joseph, thank you. It's been quite a journey full years in my current role, but but this is a When I think about it, what a fascinating time and the world also has changed in these past four years.

So yeah, I look forward to chatting with you. Fantastic. Can you tell us a little bit about your life journey? I mean, You were on the chronologist at Harvard.

Can you tell us a little bit you wrote getting to that? But then what have you done after? And did you have the courage even to move away from that big name and do something else?

Dr. Hsuu2019s Career Journey from Harvard to Innovation

Yeah, we always joke about how it's hard to leave Harvard because there's an umbilical cord, right? That when you want to sever that cord you feel like a bit afraid of the outside world because it is such a protected community.

it's you know you feel like what will what life will be outside of that and and what an amazing institution as well everyone there i mean i had the chance to be also at mass general in boston and then i did my masters at harvard and this is like Just what an inspiring and lovely institution.

So definitely be courage to take a move out of it. Then we want to know why and how. It's really 20 years, right? 20 Years staying over there. I mean, think about like after 20years, there's got to be a strong pull, to get out.

And it's because I saw something pretty amazing and I'll get to that in a second. Maybe just a little bit of journey over the 20 year. As an endocrinologist at one of the top institutions in the world, caring for people with diabetes, I'd always wanted to do something different.

I wanted something new to the medicine world. So I did the classic thing, right? teach and won the teaching awards there and published and and I was curious about specifically about why do people develop diabetes even sometimes when the weight is not very high and so I Was looking at the asian-american diabetes how there was a

unique of physiology right something different about it I always love something that's quite different so so i i did the classic thing i joined the american diabetes association i wrote national guidelines Joseph, I thought that if I write the guidelines, people will follow it, right?

So I felt that was kind of the ultimate contribution. Then after the guides were published in 2015, and I realized not everybody is following it. Guidelines are guidelines.

And so I say, well, if that's the case, then maybe we build centers. If you build center of excellence around the globe, around a country, maybe when you built it they will come, And then we realized that you're only touching very few people out of the 38 million people with diabetes here.

You're still touching lives, very, few lives from these bricks and mortar stores or institutions or clinics or hospitals. And then, so I went and worked with MIT's Media Lab and thinking, maybe we should bring care from hospital to home.

And so we tested a digital care model where people actually didn't have to come to the hospital. that people would just go to the online, and we could titrate insulin, then start insulin and get people to better results than what they could receive at an institution.

And that was exciting because that work was then translated into a commercial entity. That was acquired later on by Fitbit and then FitBit, as many of you know, that it was later acquired by Google.

It was a great journey. that's when it opened my eyes to see the concept of scalability. If you have a good idea, if you keep it just in academia, it always will become a paper and people will debate to no ends.

But patience may not really benefit, right? It takes translation, scalability. And so about four years ago, a girlfriend of mine was looking at this technology called the Fastimimic and Dia.

I'm like, okay, as a very conventional endocrinologist, like I've never heard of it, I am not very interested. My friend challenged me and said, you got to look into this.

And I spent, you know, and I began to read the paper in cells about beta cell regeneration. I begin to look at, in contrasting to my everyday practical knowledge of patients with diabetes.

And the concept is very clear, right? That, yeah, we all preach about nutrition and how we have to take good nutrition every single day. But the reality is most of our patients have trouble keeping up with a live, low commitment to lifestyle change.

That was the thing that led them to developing diabetes in the first place. How is it that the solution to treating diabetes is the same? Like people always say, right, if you do the Same thing and expect different results, that's insanity.

And I felt like I was stuck in that model of doing the The same thing, tell the patients to do The Same Thing and yet expect Different results. We could talk more about it, but that was kind of my journey out of Harvard and joined a fantastic company called Alnutra.

And fantastic. So you decided to, so it was your frustration with not having enough within the current system, current healthcare system to help people go out of diabetes.

And you were looking at a solution to kind of delve into the reasons why people have diabetes and something when I hear frustration about people not being able to be compliant, whether to their drugs or to the long-term lifestyle change, it seems you found a social that could work at the essence of the diabetes and at the same time could be feasible by by patients or induce a change.

So we'd love to talk a little bit more about. Well, first, I am always curious to ask you this question. I'm going to

asked it live. How many of your patients you've had 20 years of experience in diabetes at that number one institution in the world?

how many patients with the drugs that are available that you had to prescribe, how may patients get out of diabetes and what's the percentage that stay and live with diabetes for a long period?

Even that question is so insightful because as clinicians we don't even think about getting out diabetes. It's just a disease you live We've been taught to believe that diabetes is here to stay, right?

It's a chronic incurable condition. And we, as healthcare professionals, and even as patients, even a community of people with diabetes, we settle. We settle for just glucose.

You just want to manage glucose control, but you remain diabetic for the rest of your life. I feel like, you know, I've thinking a lot about this. Why is it that we, you know, the healthcare community do not talk about getting rid of diabetes.

We talk about just, oh, let's just be okay with sugar under a certain level. And we should call that that's the end goal for 38 million people with diabetes to me.

That's travesty, right? To me, there's a potential to bring patients to a better state. Why do we as a community, as healthcare providers, ask for better something?

Probably it is like a side effect of policy focusing not on treating the disease, like the current drugs to treat diabetes.

Why Current Diabetes Care Falls Short

Actually, they don't treat diabetics. They just control blood sugar, right? And if you have a better blood-sugar control, we're settling. We're happy.

Rather than saying, well, I've been able to support you with decreasing the essence of the diseases, whether it's insulin resistance or pancreatic fatigue and failure.

Yeah, I think, you know, at the risk of sounding like an anti-movement person. I'm not an Anti-Movements person, okay? I prescribed meds all my life. But the reality is, who's going to advocate for not using drugs?

Who profits from this? No one. The drug companies want our patients to be on their drugs indefinitely. There is this silence. This culture of silence around diabetes care.

Now we know, we have enough data to show, for example, if you truly are able to change your lifestyle and lose enough weight, diabetes remission is possible.

We know for the data from bariatric surgery, that if certain intervention is introduced, the potential to get off drugs is possibly. I'm not saying that those are the most pragmatic way, nor am I saying they are most effective or safe way.

But it is possibility. So when there is possibility, I'm just surprised at how silent the entire medical community is, or even patient community, is about wanting to get diabetes out of the way.

I remember when I was doing my rotations in psychiatry as well or our medical studies, there was this concept of learned helplessness. We all learned that this is the way it is and then every five years there's a new drug and we jump on it.

Not from drugs to lifestyle or from drug to solving the essence, but we jump on a new drug. It's a way of doing something. And everyone now is like, oh, there's wagovi.

There's Ozempig. Then we jumped on them and it's another daily addiction or weekly addiction. This can help you

lose the weight. Yes, for the first time, thank God there is a positive effect.

But at the same time you're losing muscle and getting into this vicious circle of being addicted for rest of your life to these injections. So tell me now, with big anticipation, what made you leave and what is this technology you mentioned called the fasting-mimicking diet and does it do for diabetes, regression and remission?

Yeah, I have to say that it had to be the science, right? So when I was reading this cell paper in 2017, where we saw in animal models, you know, these factories that makes insulin, called the beta cells in the body, how through a prolonged fasting technology done several times it's able to perk up and regenerate.

And for your audience who may not know the biology, to be able cause these factories of cells that make insulin to regrow back is a tremendous, tremendous achievement.

To me, while it was only an animal model, it is promising enough for me to say, you know, If you look at the risk and the benefit ratio just by using a nutrition intervention for a few days a month and repeat a couple of times is able to cause amazing changes in the factory of the body that makes insulin, it piqued my interest at that time, right?

It pique my aspiration because What if we can somehow bring that to humans? What If we could somehow introduce, even introduce the concept of remission?

The concept not settling with glucose control only. And what does it mean remission? You're using the word remition and regression. Can you define those words a little bit for us?

So, you know, we know a chronic illness apart from, changing the organs altogether. I mean, the conditions, well, many of these conditions will relapse, for example, obesity, right?

We could lose the way, but if we don't control well it's going to go back up. So there is no technically cure because you can't cure obesity. If you eat poorly for the next six months, you're going to gain weight back.

So the concept applies to the condition of diabetes. It's a chronic illness. So many organizations, like the American Diabetes Association, the Endocrine Society, and Diabetic UK and European group, they all come together in about two years ago.

They define what remission diabetes should be as the new end goal. And what that means is you simply get your diabetes under a certain glucose level. By that definition is hemoglobin A1C is six and a half, right?

As you know, that's a three months average for sugar. But for three months without a drug, then you are in a state of remission. Now, that's very exciting because now we have a new angle to look for.

And by setting a definition, it tells the world it's possible. So remissions means I am without medication for a period of three as a diabetic and therefore I'm considered in remission.

That's right. And it's really a concept borrowed from other disease states like oncology, right? Like there's no cure for cancer, you're in cancer remision.

So the experts love that term because they know that that it is a lifestyle disease. But now we are given a new hope, a New Promise. Lifetime of medicine is not the only way.

Yeah. And what does it mean regression? So there's the word remission. We said no more medication for at least three months. What does the world regression mean?

Regression is simply means that you're not totally off medicine, but you are on a path to less medication burn, which to me, Joseph, is gospel. people with diabetes and around in the US right now takes average six different medicines six medications including injectables including oral pills can you imagine like many patients are sick every day taking these and that would be fine if there's a day where you know you would stop them right i

remember when i did my rotations at measure all at harvard i used to ask with the attendings is we're prescribing this drug, when is the day of cure?

When is day off? They say, no, that's a monthly refill and it was okay for everyone to do that. And probably it is okay, for certain conditions that we cannot help with remission, right?

I mean, Alzheimer's today doesn't have a remition yet, but in diabetes, especially that 80% of diabetes is a lifestyle in used health condition. Maybe there are chances of remissions, which you're going to talk probably about now on the fasting, mimicking nutrition, what you mentioned.

Can you talk a little bit about why fasting you started saying that you sought science and sell that fasting could help you lose the weight but also rejuvenate the pancreas.

Can you talk about what is the fasting mimicking nutrition or diet? It's so low to talk it but I think it's really you know one doctor has put it this way she said that this is a miracle of life this process of fasting how the cells responded to So let me explain.

Throughout history, every living organism encountered times when food is not available to us. So when nature was giving us the stress, the body had to survive, and the cells had survived.

The cells have adapted to that stress by coming with a mechanism of saying, well, there's no food coming around, I need to survival, so I have to burn something within the cell itself.

So you're not going to go to the nucleus, where is the brain of the Celtic, because there'll be suicide. It's going look for things that are more dispensable.

For example, things a little older, a things little broken. Right. In the winter, when you run out to burn, what are you going throw into the furnace?

It has got to be the chairs a bit more broken, you are not gonna give your most precious table or the pillars in your house to burned. You go with something that's more despensible.

Now it turns out in the cell during that time, they're looking for more dysfunctional cell structure. We call that organelles. It's going to be misfolded proteins, it's gonna be older mitochondria, things that are more dispensable.

And so during times of fasting, the cells shrink by digesting these more disposable, older, more worn out parts of the Now that sounds like, wow, that's a sacrifice.

But no starvation lasts forever. Rain will come, food will become available again. So when those food becomes available, again, the cells now have the nutrients to regrow back.

Now, when they regrow back, those parts become new. So you're, in fact, replacing more older, worn out parts of the cells with new ones. That's amazing.

Think about it. Without that mechanism, none of us will be here. No life forms can survive on Earth. And that's why that fasting, although it created an existential crisis to our body, but nature was smart enough to respond with this miracle of life.

This process is so important, Joseph, that the description of this process called autophagy was awarded Nobel Prize in 2016. And so now with modern-day science, we can actually leverage that knowledge to improve our health.

So you're saying the secret of this fasting nutrition is that it makes a state of fasting to the body. So every cell of the bodies thinking it is fasting and therefore does whatever it learned through human evolution or through our existence on the planet.

and it shrinks, it eats the inside, whatever is disposable, wherever is broken, that rejuvenates and once you feed it again, is growing back as a re-juvinated, better functioning cell.

Is that the summary? So is the concept that this body coming out of rejuvination is a better functional, is like a younger, better functioning body and therefore fights diabetes.

I'm having a difficult time linking the rejuvenation of the cell to diabetes, if you can elaborate to that. Yeah, and that's a really good comment and a question here.

You think about type 2 diabetes it really happens in young people, right? It's it's condition that is associated with aging, typically people develop.

In older people you mean, yeah. Yeah, 50 years old, 60 years, you hardly see it. I mean, we're seeing more childhood obesity right now that leads to type 2 diabetes, but it's still relatively rare, right?

And so it tells us the body must have some trouble processing, renewing, rejuvenating the cells and therefore the diabetes clock is ticking, as our society gets heavier and heavier.

But this process of cellular rejuvenation, this processes of autopsy that we talked about, right? Replace the more worn out parts of the cells with new ones.

What it's essentially doing is making cells younger. And it's not only making the cells in the pancreas younger, but it actually affects every cells of the body, right?

Because when there's no food to the the brain has to respond, the heart has respond. The muscle has respawned, fat has responded, pancreates have respawed.

So every cell in body from that stress of fasting actually rejuvenates itself. And diabetes being a condition that's affected by many organ systems, including the Pancreas, Fat, Muscle and others, through the process of rejuvenation, they all get better.

They all function better and that's how potentially it has this effect on diabetes.

How Fasting-Mimicking Nutrition Works

So you're saying that diabetes gets more established with age because the body is processing maybe, right? The muscles used to burn the carbs fast when even if you ate high calories when you were younger, you weren't able to process those.

Now with the age, we get slower and the cells are less you know, rejuvenated and less young and therefore less efficient and, therefore, the body is establishing diabetes and maybe this is how the buddy also gets into Alzheimer's or gets in to cardiovascular rate.

All these chronic conditions that 90% of us are going to die from cardiovascular, cancer, diabetes and Alzheimer's, they're all age related. And this is so important today for everyone listening to us is age is probably the mother of all these four health conditions.

Of course, there's environment, of course the genetic predisposition, or of courses lifestyle. But even when you have all those, you're not going to get Alzheimer's at age 20. You're you not getting your first heart attack at 18. you still getting them at 60 and 50 and 70. So the essence of you describing fasting as the playing with the assets of the youth of this cell and having better rejuvenated cells to re-juvinate the entire body, getting rid a little bit of diabetes.

But you saying also could be a good intervention for the entirely longevity of body or the entirety healthy aging of a body. And this is where the innovation really grabbed me four years ago.

And that is the intersection of nutrition, fasting, and longevity. Think about that triangle there, right? For a long time, if you listen to podcasts out there there are endless debates about what nutrition you should eat, but that's only one vertical.

is not only about what we should be eating, but also the timing of our food, right? Or by the converse of that is when we do not eat. Has that tremendous implication to our health.

So, yeah, go ahead. You know, Dr. Walter Longo, who's the father of this entire concept of fasting and feeding cycles, he's top 50 most influential people in health and his longevity diet book, which I think describes what you're talking about, the cyclicity of eating and not eating, which carried, as you mentioned, every organism in the world from historically and from small to human.

We lost that the last four years, we're eating all the time and therefore we are getting spoiled, aging faster and getting health conditions sooner than later in our life.

What you are saying is bringing back fasting to our lifecycle. is going to help us to alternate with feeding and fasting, rejuvenate the cells, decrease maybe the weight, protecting the muscle and keep us a little bit more efficient engine to fight the onset of these chronic conditions.

That's exactly right. It is a union of our life, right? You cannot just exercise every day without rest. You can not just eat without fasting. And fasting seems like such a Novel concept, but it's not we all fast everybody fast.

Well, you say well, I don't fast Well you do when you sleep you fast, right? It is really the extension of that giving the body a little bit of a break in a 24-hour cycle That's helpful But every culture every religion also has this fasting components for spirit so for spiritual spirituality But also for health for mental clarity clarity But I mean, that's kind of posse.

That's a past knowledge. Fasting and nutrition. After all, every religion and every culture has practiced it. What is really new to me, at least for me maybe your audience has heard about this, is the link to healthy aging.

How these nutrition and fasting is linked to a healthy longevity lifestyle to me is where 21st century science has really begun to reveal the impact of this.

Yeah. And so Dr. Xu, you explained very well the teller effect of fasting and are you saying it's even more relevant and important diabetes because by the way you're fasting so you are losing a lot of fat and can you talk about what from a metabolic standpoint not cellular standpoint from metabolic stand point what happens to the body and how many days of fasting you need to achieve what you describe or how Because I hear a lot about intermittent fasting, I heard about prolonged fasting.

Can you talk a little bit about the metabolic impact and how many days ideally people should? Such an interesting question. You know, we know what happens to the body when the bodies fast and I'll just take you through a quick journey here.

We know when we fast, the mind changes. By the way, on day six of my fasting-mimicking diet, today is my refining day. So I just experienced five days of that fasting.

I can tell you, there is a clarity of mindset. And that's not new. Every culture, religion practices that, so we know that. There's changes in relationship to your food, number one.

there are changes, for example, to you liver, right? Because you're not feeding the liver with everyday food. You can just imagine, you know, how do we make frangois?

We take these geese, poor gees, and we feed them, right, incessantly so that the liver becomes fat. I mean, so what is the way back? The way it back is…

And foie gras is fatty liver, yeah. And so the way back, how do we reduce that problem? Not feeding, right? So clearly, there is benefits on the liver.

There's benefits of the beta cells I share with you, the 2017 cell paper on beta cell regeneration, that's the factory that makes insulin. And there's impact on muscle.

Muscle is the most important organ where the glucose flow in the blood goes to. When you have less muscle, and that often happens with low calorie weight loss.

If you lose weight for six months, you're definitely going to lose some weight, but you definitely also going lose muscle. That is terrible. It's the wrong way of losing weight.

Fasting up is the opposite. You lose central fat. Right? Your visceral fat, your belly tire, you know, the entire belly, I should say, right? The beard belly.

That is the worst part of the body. When you're fast, that's the first part to go. But you preserve lean body mass. You preserve muscle. This is critical because I've never ever heard of a weight loss regimen unless you exercise and you take proteins that only selectively melts fat and does not impact muscle, including, by the way, the injections now and maybe soon to be oral on Ozempic and Wigovia.

I think even those drugs are inducing a fat-and-muscle loss. You're saying that with the fasting-mimicking nutrition, You're preserving lean body mass and the body only focuses on burning the fat?

Yeah, your audience may not know this, but a lot of the low calorie weight loss plus the GLP-1 drug like Ozanpick and others, they lead to up to 30% to 35% of muscle loss as part of weight-loss.

So as we lose muscle, we also lower our metabolism, which makes weight maintenance even harder. So it is a difficult weight, but the fasting is different.

Think about this, like a tiger in the wild. Between the hunts, the tiger gets hungry. If the tiger's muscle gets down because there's no food, the muscle is going to get weaker, that tiger will never hunt again.

That species would probably be gone a long time ago. But it's the opposite during a short-term fast. The minus shark, the tiger's minus sharp is focused on hunting.

The muscle is maintained because there is a stress to the body and the, body causes growth hormones and all the hormones to maintain the muscle mass. Now, obviously if you fast for a long time, like a month, that's starvation and starvations never good for the.

But a short-term fast turns out to be a positive in terms of keeping muscle. So you're saying because fasting works more, not as a calorie, but as it's stress on the body, the growth hormone and other hormones that the muscle loves to rejuvenate, plus the fasting stimulating re-juvination of the muscles together are leading to preserving muscle, which in a short period, maybe that's natural selection, human evolution, or the way it is genetically, if God created us, has been built into us to, as the first reaction, there's no food.

be sharp be a better machine be rejuvenated and keep your muscle because you need to go and hunt and that's what you're trying to simulate with the fasting mimicking diet so to reawaken the cells and the body and re-juvinate the muscle and help the buddy get rid of diabetes yeah i mean we're try to with nature's design don't go against nature right i love that it's a natural intervention you just you are just mimicing what our ancestors were doing in a natural way.

And you're tapping into these ancient survival genes. You can't fight against that. But we also are not leveraging that in modern medicine. This is where I sought an opportunity.

One of the biggest challenge, Joseph, is our patients, many of them are your listeners here. I always remember

they struggle. It's not that they don't know they need to eat well, but being a saint, Eating well every single day is impractical.

It cannot be done. Yes, we do encourage people to live a good lifestyle, and we're all about that. But I've always, as a mind of a clinician, always think about, are there pragmatic ways?

How can we give an intervention rather than a lifelong recipe of commitment that can still drive results? And that's when my eyes turn to this technology called the fasting-mimicking diet.

So how many days? You're saying it's practical and feasible because it is shorter than changing everyday's lifestyle. What is the number of days that you're recommending this fasting goes for?

So there are about 70 publications that look into this fascination between fasting, nutrition and longevity and disease conditions. But specifically, there's been about 14 clinical trials They have that published actually 18 clinical trials they have published looking at this five day Five day meal kit called the fasting mimicking diet It's a lot of people say is oxymoron.

How can you fast and how can your food? We should go into that in a second, but just five days It repeated a couple of times right in the course of a few months can simulate and activate these ancient genes of survival and it's a powerful lifestyle medicine tool and is truly an innovation.

So you're saying it is five days only a month, so you fast for five day, you eat normal in 25 days and you repeat it every month. That's the period that allows the weight loss and the fat loss, and then the rejuvenation of the cells.

Can you help us? You're mentioning the word fasting, mimicking diet and nutrition. We're confused a little bit with that oxymoron. Is it fasting or you're missing nutrition?

The original studies have always been done with fasting alone, right? And so we know fasting does a lot of good. The problem is, again, pragmatism. I'm a clinician.

But the idea of how feasible it is to implement matters a great deal to me, right? You can have great theories, but fasting for five days, you ask average Americans who can fast five day.

I can tell you, as doctors, we go to medical conferences, if they don't feed us lunch, and we say, that's terrible. That's terrible conference, right?

I mean, even doctors will have all these knowledge, but it speaks to how the solution needs to be pragmatic. So fasting for five days, yes, theoretically is great.

It cannot be done. This is also why a very bright mind by the name of Professor Walter Longo at USC, University of Southern California, director of a longevity clinic or longevity institute, 20 years ago, began to think about, well, is there a way to hack this?

Meaning, can I somehow come up with the innovation that gives you the benefits of fasting without the burden of fast? Can I provide the body with a little bit of nutrients?

Not enough to cause these sensors in the bodies to say, oh, there's food. Actually, go fall below the radar of these detections. So the cell says, OK, There's no food, but in fact, we're sneaking, smuggling some nutrients into that.

Now, that's not a DIY project. It's 20 years of research, 36 million dollars of National Institutes of Health funding and with dozens of publications to support that, so.

Professor Longo and the University of Southern California, they invented or they figured out a formulation of plant-based healthy nutrition that goes for five days.

The body is consuming the food. Is that like a box you ship to people with this formulation? They eat the foods for 5 days and their cells are not Figuring out that they're being fed.

So you're fasting while you are eating. You're getting the benefits of fasting.

Metabolic Effects and Muscle Preservation

While you were eating Yeah, this is what I call the really it's we take the inspiration from nature Right, which is fasting, Which is actually not voluntary as a force upon us by nature forces fasting upon upon all life forms But we, using the knowledge of biochemistries and molecular medicine, come up with a five-day plan-based nutrition kit.

So when you consume this, you get some basic nutrients to support you. So you could actually withstand the five days and yet at the same time get almost all the benefits of a five day fast.

To me is the best of both worlds, right? And it's pragmatic because it is five-days. Now, what do you do for the rest 25 days? Obviously, we say you got to eat well, exercise.

But the reality is in all of the clinical trials, people just go back to do what that you used to do without keep thinking about what to eat, what do just give us five days.

Give your body five of this intervention. You will see the results in a couple of months. So when you call this fasting, mimicking nutrition or fasting mimicing diet, five, days I receive my box at home.

I eat every day. Whatever you send me, it's a special nutrition formula. Is it, is it plant based? Is. It is plant-based. And it's a limited calories, especially formulated with regular products.

Is it like lactose free? Is for people with reactions, is it gluten-free? It's gluten free, it is plant-based and especially formulated. So it has micronutrients in there and it tastes great.

It has bars, soups, so it isn't like you take a pill. Joy, the soup, chewing, and this is all designed with the mindset that, hey, we don't want to treat sickness as if you're totally sick, right?

We actually want you to live life through experiencing this five days. So even going through fasting, there is enjoyment, food, nutrients. What is a typical day?

What would I get for breakfast, for example? Yeah. So, so there's a bar, especially formulated with same thing with that fasting, maybe in technology, the bar use, there is taste, There is, texture, but it doesn't spike your glucose, doesn' spike or insulin.

Right. And you're saying I'm eating the breakfast bar and my buddy still stays in fasting. In fact, we have a publication looking into that that was published to show it's the same glucose level for a number of hours after you consume it, as if you're drinking water and your ketone level just keeps going up.

So that's exactly the physiological state when the body is in a fasting state. What would I have like, for example, a typical day for lunch? You'll have soups.

You have vitamins. There is snacks. They're crackers. Look, it's not going to be a three-star Michelin gourmet, right? And you should not be thinking about that either.

It is an investment, just like when you go to the gym, you've got this coach yelling over you and you're pumping the iron. But we can make that as tolerable as acceptable and enjoyable.

And is dinner same soup and some snacks that goes with it? That's right. And so you're saying it's a box of food. You would send it to me. I'll consume it over five days.

My body stays in a fasting mode. On one side, I'm rejuvenating my cells, getting a little bit younger to fight better, fight diabetes. The other side I am losing fat.

And you're saying, how many times do I need to repeat it every month? It's five days only per month, but how may times I have to do it? Yeah, it depends on sort of your background health.

So studies have shown, publications have revealed, that if you are healthy individuals without health conditions, you only need do three times a year.

You're talking about 15 days of engagement. Now, is it a little bit of hard work? Yes, there is a bit investment. But think about the cellular rejuvenation effect you can get.

We're taking about three cycles of a five-day fasting-mimicking diet. And if I have diabetes, like say after six months, I do it every month for six month, what do I expect?

Because we started talking regression and remission and And I want to know, because that was my frustration, I left medicine for mainly telling patients you have to take the same drugs for the rest of your life.

What is the science showing if you do that fasting nutrition? How many times you need to do it if your have diabetes, let's say? And if don't have a diabetes you should have three times per year.

But if I have Diabetes, what to expect, you know around that let say six months? This is the most amazing result I've ever seen from a nutrition intervention.

We published a paper in JCE and there's a journal of clinical endocrinology and metabolism about a year ago. where we take two groups of people right one is just standard care the other one we give them this fmd this fast moving diet five days a month repeated for six times six months training so six month sounds like a lot but you're talking about 30 days of effort in six All what the patient needs to do is the 30 days within six months of eating that special.

And for the rest 25 days, they go back to live their normal regular life. You're not telling them to in the trial, you didn't tell them, to take other medication or exercise or eat healthy in between cycles.

It was just. These are actually people with type 2 diabetes. They have about 14 years and they're on all kinds of medicine. What we told them to do was not to take more, right?

We let their doctor decide on their medicine, and see what happened after six months. Because I see a lot of lifestyle medicine intervention and I saw the little bit sheet in the paper.

Like they change your lifestyle, they ask you to exercise and then they do 20 things and you see it's a great result. I just want to know in this clinical trials, Did you ask the patient to change their lifestyle in the 25 days or you just give them the fasting-mimicking nutrition?

The rest returned in about 25-days. We asked them not to changed anything. OK, so it's the only impact of the five-day fasting mimicking diet by six times.

And what were the results like? How much weight they lost, insulin resistance, HbA1c. Can we talk a bit about the result? So it was after six months. It was very clear at the end of this study.

Now, The group that actually used the FMD had 1.4 A1C drop, right? 1.4, that's actually very meaningful, for those of your listeners. For every percentage drop in A 1C, one point in a 1 C, it's equal to about 30% reductions in complication in the long term.

1 point 4 is equal. I remember from my medical studies, if you drop HPNC by 0.5, You're it's meaningful thinking meaningful. It's almost a drugable, you know level and so now you're doing triple you saying 1.4 decrease in hb1c

and you said every point of decrease is equivalent to 30% decrease in the complications for complications in a long term.

So that's why the FDA will allow a drug claim to approve a drugs. It has to have at least a 0.5 per 1C. Here we're talking about triple. But what's more amazing is not just the drop in A1C, a lot of the drugs could get you A 1 C 1.4, right?

A lot the expensive drugs But at the same time, two-thirds of the people in this study were able to stop or reduce their medicine. And that's the remission and regression you were defining when we started.

That's amazing, because to get 1.4 A1c drop, what do doctors typically do? They tell you to increase your drug, increase insulin, and increase eczema.

Increase your pills. But here is one intervention where you're seeing better glucose with less medicine. And this is something I hardly saw in my practice, right?

And it's a nutrition and it doesn't require every single day, and just to give you, to round out the results here, there's 59% drop in insulin resistance.

Many patients struggle with insulin. And by the way, the beneficial side effect, 22-pound weight loss in the study. The muscles were preserved. There was no loss in muscle mass.

That's the right way to lose weight. And by the way, a 50% drop in this protein leakage in the kidney called diabetic nephropathy, right? Microalbuminuria, these are protein leaks.

These are diabetes complications. How do you see all these five days of nutrition, all natural, less drugs, and less payment? They don't have to pay for these drugs.

I want to take a moment here because This is exactly why you left Harvard. This exactly, why I left the clinical practice of medicine to come to nutrition and longevity.

this is the exactly way this summit exists on fasting and Longevity. And now we're talking about medical fasting, right? Is all the drugs combined in trillions of dollars that governments are spending on diabetes throughout years are actually have not solved diabetes.

When the science of nutrition was able to figure out the value of fasting. and have put more technology into develop a diet and nutrition that helps you to fast for five days suddenly we see these amazing results you're talking about you mentioned two thirds drop in in medication i mean in six months we've never seen this in the practice of medicine i did start the call by or in the interview by asking how many of your patients so you're able to reverse and you said it's a lifetime disease.

You're saying 22 pounds of weight loss, you are saying 1.4 decrease in HbA1c, preserving muscle, which is key. I cannot stress enough for everyone how much muscle is important in aging and diabetes because you can drop 22 lbs by eating healthier and being on a diet or you drop them actually even more with Ozempic and Wagovi and the others.

But you're losing muscle, and the day you stop, that has been the failure, the secret that no doctor or others want to tell you is you lose muscle. You're a weaker engine.

you metabolize glucose in a slower way. And then the days you stopped dieting, you gain back what? Muscle first? No, fat first. It's a vicious circle.

Every time you go on a diet or on the cycles of injection, you end up losing a little bit of weight. And I see a lot of my patients, a today consumers, they tell me the same thing.

Clinical Trial Results and Diabetes Remission

It's like, I dieted all my life and I cannot just get it right. Every time you're dieting, you are going through that vicious circle of losing muscle and fat.

Then when you eat back again, get the fat first, and you go back even worse. This is why this learned helplessness that exists today in weight loss and in diabetes, the key is muscle.

it seems the company is called Alnutria and we're going to talk about that, has uncovered a secret to lose the fat but protect the muscles, the stress of fasting, and you put a nutrition on it in order to make it compliant and feasible.

Even as you're talking, images of the faces of patients came back to me. In my 20 years of practice, how many times when the glucose level goes up, I had to talked to the patients and my only options were to, well, Mr.

Smith, I'm sorry, but we need to increase your medicine. We need add another drug, another injectable, and another pill. I see you're getting emotional about it as well.

No, because I remember the reaction, the emotions of the patient. It was not more, it's not just, oh, have to take another medicine, there is a sense of personal failure on the parts of a patient, they feel like, Oh my goodness, that failed again.

And you know what often would come next is a series of negotiations. Doctor give me three more months. I will eat better, I'll lose weight. And sometimes I knew they can, but I got to give them a chance, right?

I give to them, okay, let's not increase this. Let's wait for three months, they come back three month. Guess what? Same story. But there is a deep sense of personal failure and struggle and putting more chemicals in the body.

That's not the natural way. But the challenge was that we as doctors did not have a better tool. We only have drugs. Now, I could send them to the dietician, which I do.

I can send into exercise physiologist, At least you tried. Most doctors don't even have a nutritionist next to them or look at diabetes as a genetic predisposition and get the pills and then once your pancreas fail, I'll give you an injection of insulin.

I mean, at least there was a trial with nutrition but that frustration that you're mentioning, we see it everywhere. people progressing is always has been a progression.

The budgets that the insurance and the governments are paying is a Progression. Medicare is getting into close to bankruptcy. All governments around the world are going like diabetes is just is is the heavy weight on everyone.

And guess what? It's a foodborne disease. I remember one time I had a post talking about diabetes being a foot board disease and somebody say, watch out, you know, this is how you're defining that.

It is 80% of diabetes type two is a fruitborne. And what a magic. You're saying fasting, stopping food is the best way to reverse or to induce remission.

Where it took medicine decades and decades, and it's taking doctors and debates, et cetera, too. If you go to the essentials of it. You overate, you stock a little bit more fat, it became insulin resistance, and you became diabetic.

Guess what? If I fast you, the opposite of what you were doing, You're going to very fast, be hopefully free of your medications. What a simple story, but how long did it take us to reverse that brainwash, to You know status quo that we were all kind of you know, learn to to practice and have accepted to To show that the difference is now we have clinical results.

We have science to show this right that this can be done And it's not just the old-fashioned just you don't let the

hunger bother you. No, no, there's actually an innovation This is why four years ago I joined L-Nutra because I saw this technology and how we can take into the clinic, how can we take it into healthcare to give our patients with diabetes new hope.

And I see it behind you on the screen, L dash Nutra Health for Diabetes. What is the L? Yeah, L means longevity. You know, we talked a little bit about this trifecta of fasting, it's a longevity and it is the longevity, We're driving the Longevity through nutrition and health.

It's just, It is a new effort at Alnutra to focus on health care, to bring gospel and good news to people with different conditions. So it longevity through the nutrition for your health and the focus is for diabetes.

And is that the website? Like if people want to go If I have diabetes today, what should I do? I just listened to this and or if I'm a doctor, actually 10% of the summit attendees are physicians.

And this is a big call for doctors to take action. But if if i'm the patient or my dad or mom or cousin, I know somebody with diabetes, What should i do going out of this summit?

So because of science that we've talked about, we have put together a medically supervised Diabetes Remission Regression Program, and that's under the flag of L-Neutral Health.

So if you want to find more information, go to that website, l-neutralhealth.com. Okay. You can, you can find out to call us, how to reach out. The program is a 12 months diabetes remission program.

Again, to tap into those ancient mechanism of survival, the powerful, what mother nature has designed to allow your body to rejuvenate through a twelve cycles of 12 month program, it has the MD.

So the fasting-mimicking diet is, as we talk about six months, what happens between this 12-month program between month six and month 12? So on average, we believe that people will need about 6 monthly cycles of FMD and then go into a maintenance phase where we will continue every three- month cycle.

OK. So I'm doing basically eight cycles within a total year. Eight times five is 40. The entire 365 days. You're telling me you're going to give me just 40 days of food out of 365. And there's a dietitian, you said supervised, there is a doctor and a dietician.

There's nothing supervised. Your doctors may be interested in being part of this program. They can certainly talk to us and they could be the ones to supervise you.

If you don't have your own doctors, we'll provide a health care provider to support you through this journey. Remember, this technology works. So that means that you're going to need less medicine and we don't want you to be just managing those medications on your own.

So, that's why it's a medically supervised program. And I'm glad you do it this way rather than than just, you know, going straight to to, just like many lifestyle programs where they just want to you with less science and then more commercial arts trying to just get into people and change their lifestyle.

No, patients are first in our heart. I have a heart of a clinician. It has to be patient safety first, a lot of hand holding, right? A lot support throughout this 12 months journey.

And so to describe it, theoretically, if I go to my doctor or if contact you at Alitra Health, you have your doctors and I'm expecting to put on a program, monthly program.

five days of food on month one, two, three, four, five, six, then once every three months, I'm getting eight months in total. I have a dietitian with your program that will help me, you know, if I need to do more between the cycles of, or checking with me and maybe checking on my blood metrics and helping my physician to what to reduce my medication.

Program Overview and Closing Remarks

So we said in six months the data is showing two thirds of people would reduce their medication, that's fantastic. I mean, hopefully, within the last hour, we will first learn this amazing journey of years coming from leaving Harvard for this, it seems, fasting and making nutrition technology.

We learn about the value of fasting, not just into weight loss or the tradition intermittent fasting, you need to lose weight. You talked about rejuvenating cells and the body.

And I'm pretty sure there's a lot of emotional even benefits there. The mental clarity you mentioned, the performance, And you said this is essential for the treatment of diabetes because you're making the body the engine younger.

You're preserving the engines, the muscle, and you are losing fat and reversing insulin resistance. And this leading in diabetes is very critical in diabetics, leading to reducing medication for first time to talk about regression of the disease, giving a new tool in the clinics and to people to think about when am I going to get out of diabetes rather than How am I going to add more drugs into my diabetes and what's my next complication?

This is amazing and you're referring people to LneutroHealth.com to go and subscribe to this program. So I hope. In the last hour, it was planned to be 30 minutes, but this is so disruptive to medicine.

This is still disruptive too. The way we practice medicine into the life of patients that we probably took a full hour. But hopefully we changed the lives of thousands and thousands of people.

I mean, even if you don't have diabetes, the entire summit is going to talk about the value of fasting to aging and longevity of If you have fasting and if you diabetes and your wife does not have it, it's okay to do it together for her own aging and vice versa.

If your spouse, your man doesn't have, you know it is okay together so that people actually you benefit from the rejuvenation and healthy aging. Dr. Shai, I cannot thank you enough for showing up today and explaining this disruption that's happening now to the diabetes disease management and to medicine.

Any final word before we close here? Joseph, i really appreciate the platform you've provided for me to talk about my life journey this far and my encouragement for your audience would be May diabetes remission your new end goal and hopefully we could be a partner for you on this journey.

That's fantastic. I appreciate you so much, Dr. Hsu, and thank you very much for this wealth of information. And I'm pretty sure we're going to see you again at some point and appreciate it and have a great day.

Thank you, Joseph. Thanks for listening to The Longevity CEO. Follow the show and join us as we rethink what it means to live longer and healthier lives.