Intermittent Calorie Restriction: Beyond Traditional Fasting Transcript

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Summit Introduction and Guest Background

Welcome to the M. S. and NeuroImmune Summit. I'm here with my friend and colleague, Dr. Will Hsu. Now, Dr. Hsu is a neurologist. See he trained at Yale and then did his specialized, through a fellowship at Harvard.

And he was a professor at Harvard for many years. and he, then went on to join L-Nutra and, did further investigations with the Farsi American diet. and we're going to dive deep into the research around the Fasting mimicking diet, and we'll talk about how I use these concepts, myself, in my healing journey.

And I use them in my clinical practice as well. well, welcome. it is everything that I left out from your, bio that you'd like to add. So now that that's plenty enough.

Dr. Wahls thank you for having me on your summit. So let's talk about the fasting mimicking diet. What is it? Yeah. So it's just the name suggests that fasting mimicking diet is actually a structured meal plan, consisting of five days that, when you consume, mimics many of the benefits of of a prolonged water, fast and more without the burden of of having to fast with water for five days, which is, honestly really difficult.

Right. And also, it could be challenging for people with conditions. So it's a five day, you know, we have days to think everything is planned for you.

structural meal plan kit and, structured meal kit that basically has been developed scientifically. It's patented. And, it really was born out of, university laboratory, with clinical sciences.

And everyone I've done water fast. I've done five day water fast, seven day water fast. I even did 110 day water fast. That was really tough. and I did five day water fasts once a month, for a year.

and then I was introduced to the American diet, and I tried the fasting mimicking diet, like, oh, my gosh, it was so much easier. It was so much more pleasant.

and now as I'm aging and I'm over 65, it's really important, to not water fast because I don't want to lose muscles. and so I am very careful to no longer do any water fasting, although I will still do, things with a fasting mimicking diet.

So, let's talk about some of the research.

What the Fasting Mimicking Diet Is

I believe, if I remember correctly, the bottle, long ago started out in cancer research and longevity research. Right? That's right. and then, so, really, very nice results.

Can you not talk about that at a high level or some of the great biochemical changes? Yeah. So the first American diet was developed, by Professor Valter Longo at USC.

And it is his passion was about how do we how do we elongate human life. And in his research, he also found that it could be, the same technology could be used in patients with cancer and very quickly into diabetes and then into autoimmune conditions.

And then the latest research focus is around neurodegenerative conditions. And then so you wonder like how is it possible to have one technology that addresses so many different types of health condition?

Well, it has really to do with not tackling diseases as they're progressive, from early stage to end stage, but rather

focusing on making the cells younger.

So the idea that could we. Repeat that again, that's a really profound statement, could just say that again for our audience. Well, let me use a different way of saying it.

You know, all of us as clinicians, we practice medicine separately, as if all the age related diseases separate. But if you think about it, the primary driver of the age related conditions like cardiovascular disease, cancer, diabetes, and a lot of the autoimmune conditions and even the the neurodegenerative conditions like Alzheimer's are driven primarily because we get older.

Right. And so if you address aging as a primary cause of these age related conditions, then one intervention can have many downstream effects. And that's where Valter Longo, Professor Longo has spent over 25, years of his professional life looking at that technology.

And so the fascinating technology was born out of the lab, really studying the intersection between fasting, nutrition and aging. And what is the kind of nutrient intervention that mimics fasting that allows us to turn back the clock of time.

Right. And so it sounds like amazing or too good to be true. And and I would be the first to admit that as a scientist, as a clinician, right. You need to have the evidence.

And I'll just quickly say that, earlier this year, we published a paper in Nature Communications, one of the, top tier, journal that really testifies to this hypothesis.

Right. So what we did was through through two studies in in the publications, we use three cycles of fasting. I remember I mentioned fasting mimic that is the five day cycle, right?

Five day of kids of food that you consume without eating anything else, just five days a month, three cycles a year. We showed that we were able to reduce biologic age score by two and a half years.

And then when you do that three cycles per year from age 50 to age 70, the study with the model predicts that that that could reduce biological age by 11 years at age 70.

And so so now we have evidence to show that fast mimicking die and not only changes, for example, metabolism changes the pro-inflammatory cytokines, but the primary mechanism of action is actually changing or reducing the biologic age, of, of a body of a, of a person.

So that is a very revolutionary thinking that we're tackling a lot of the age related conditions person, primarily by driving a cellular renewal, rejuvenation, by making the cells younger and everything else gets better.

So I'm going to. I want to repeat this at a sort of a high level.

Research Origins and Biological Age Reduction

So a five day kit that I take in January, then come back and take it again, in April and then take it again, in July. So I've done it three times this year.

If I did that every year for the next 20 years, instead of aging another 20 years, I am 11 years younger. And so what I, I instead of aging 20 years, I only aged three years.

Right. So so it was actually the studies were was done consecutively three consecutive months in one study, four consecutive months. And another study, when we combined the study two studies together.

That's exactly what we we show. We show actually instead of accelerating. Right. You have a reduction of 11 years, okay. In biological age. Now obviously you're still racing against time and we don't promise, a, you know,

that, that, that this is a intervention on mortality, but we're slowing down the aging instead of 20 years, right?

In increasing chronological age, you know, reducing the biologic age by 11 years. Now, a year in biological age doesn't equivalent it's not equivalent to a year of chronic logic age.

But that was the translation, the reduction in 11 years by, biologic age score to be translated into almost five years in life extension. Well, I think that's the important part, that we have life extension and we probably have, most importantly, health extension.

That's exactly right. We talk about lifespan. I care much more about my health span. How long I can still be jogging. How long I can still, be managing my own finances.

They'll still recognize my children, my grandchildren. You know, that's what we all care about. That's right. And wrong. So engaging in controlled fasting mimicking diet, is one way of doing that.

That's way, certainly way easier than the water fasting. and for those people who do water fasting for its health benefits, what's the downside of a water fast?

Well, we recently there was an abstract, at the American Heart Association, and touting sort of the 16 a race of 16 hours of fasting with eight hours of eating window was associated, actually with a higher mortality that it brought.

It was a shock to the world. And that was because they felt that that the association was due to a drop in muscle mass with these chronic, prolonged fasting.

And we will agree with that. The reason why we come up with this series of protocols, the fast lifting diet was really meant to achieve the goals of intermittent fasting without actually allowing you to fast for that long.

Think about it if you're always 16 hours, 18 hours, 20 hours of their stress per day, it is not very good chronically for the body to be in that chronically, heightened state of stress.

Right? The first in mimicking diet is very different because there's only five days in a year. Basically, you're stressing the body. So so the cells think that, well, my goodness, there's no energy.

I how do I how do I survive. It's going to look you morally for sources of calories that you can survive long. So it begins to shoot up. the, the, the, the parts of the cells that are a little bit older.

for example, the misfolded proteins, dysfunctional mitochondria, they've got to chew them up as a source of energy to sustain itself during times of starvation.

But that should not go on for too long, because starvation is never good for for any biologic, life forms. Right. It's actually the this action of shrinking because the cells are eating itself up.

It's called cellular autophagy. Now, that's only part of the story, right? As the cells shrink, surviving, hoping that food will come the next day when the food eventually comes.

What does the cell do? The cell actually grows back when it grows back. But what you have done is you have replacing the old parts of the body that are less functional now with new parts.

And you're you're completing the cycles of cellular rejuvenation. And that is the amazing work of autophagy, that which really earned Professor Toomey the 2016 Nobel Prize.

And so this is a very different mechanism, right, than a purely water only fasts for 16 hours every single day. Very, very different. We try to fight the system right by causing the cells to go through autophagy just a couple of times a year to drive the desired result, rather than an ongoing, ongoing fasting, 18, 20 hours a day for, for for for a long time.

It's a very different concept. So, what I, what I think in I'm hearing is part of the magic is we have a little bit of stress with reduced calories, five days, and then we have probably controlled food when I get my calories back and my cells are and are restoring themselves with, younger parts of the cell process.

Autophagy, Cellular Renewal, and Stem Cells

So I have younger mitochondria, probably, younger lysosomes, and younger, when I have younger ribosomes down as well. Would I, I don't know. Yeah. I mean would the magic.

It is because the, the stress of no food is universal. It applies to every organ system, every cell of the body. So every system has to rejuvenate itself.

So it's a universal impact. and that's why we're beginning to show a lot of benefits right in and for example, in the muscles and the fat in the blood.

And so it's a multi-system systemic impact through the fasting and the diet. It's also remember, when you only water fasts, you're also not getting the nutrients.

So it's very hard to sustain yourself. That's in contrast the fast significant where we're providing nutrients. But just enough right enough not to trigger these nutrients in the cells so you can get the benefits of fasting without the burden of plastic that that was.

Let's go ahead. Well, I was going to ask about stem cells. What happens to stem cells, during this whole process. Yeah. In the in the animal models, it was very clear that when you fast, the cells are stressed, right.

They're depleting themselves by burning up these these, less functional parts of the cells, the first part of autophagy, they're very clear when food becomes available, the cells got to grow them back.

How do they grow them back? There's stem cell activation. We see that in a lot of the inflammatory models. and we're yeah, we were seeing that, for example, in the, in, in the, in the inflammatory bowel disease, models where we're also seeing this regeneration, of stem cells.

We're also seeing a shift in microbiome as well. There's a, a systemic impact, that that comes out of the, the fasting in between diet. can you explain what do you think's going on with the microbiome?

It's very interesting, you know, in the inflammatory bowel disease model, right, where there's inflammation of the colon. this is in animal model. We saw very clearly.

We did a head to head trial between one only first versus the FMD, or the fascinating diet. This was published in in cell Report. back in, in 2016, I believe.

very interesting. Right. So the FMD cycles actually partially reverses the pathology compared to only, water, only fast because it has some nutrients that allows healing to take place.

Number two, it also promotes the expansion of specific microbiome, specifically the little bit Bacillus species, the bifidobacteria occurs. These are beneficial.

Gut microbiome actually gets supported with the FMD. But actually because what only fast kills everything, right. Because there's no nutrients, it good and the bad ones die.

But with FMD because it's a plant based, we promote a good species to survive during that time. So it's both a hit and a nurture, right? You hit by the the process of fasting, but you nurture it because of its plant based components.

So this is very, very interesting. That's the first thing in between. Diet is not only mimicking fast water only fast, but

now adds additional benefits because it's plant based, ingredients.

Now let's talk about, that Choy paper when we studied the first American diet in animal model of multiple sclerosis. that was a very exciting paper. I loved reading that.

So, can you review that for our listeners? It's very interesting. Right. So, obviously we cannot cause exact model of multiple sclerosis in animals, in humans.

So we did a or the University of Southern California through the Ago that, did a rodent model just as close as possible to the human model and the multiple cycles of the fasting and diet actually reduced the disease severity by, by suppressing the auto immunity.

Okay. And also, similarly, this three mile ization, in and there's a technical term these oligodendrocyte, these are are the, the cells that produce this myelin sheath.

Because regeneration in those cells, in the model, it's amazing. You know, it also suppresses immunity autoimmunity by inducing lymphocyte apoptosis. So so this program cell death in the in the very cells that causes these immunity, it suppresses in a controlled fashion.

these apoptosis. And, so it was we also in the paper, we also, show a early human clinical trial to ensure that this was, potentially safe and effective in Ms.

patients. We still need to expand this study so that it becomes, a more definitive. But early human trials showed that it could be done safely in humans.

and, I, I'm recalling that, maybe incorrectly, that the also measured stem cells in that the stem cells increased, in those rodent models, am I? Yeah. This one.

Yeah. This study, did not focus so much on the stem cell, but the inflammatory bowel disease model that that I spoke earlier did show, a jump in for in the stem cell.

Yeah. okay. Okay.

Microbiome and Autoimmune Research

Now, I know that in multiple sclerosis and actually probably many of the neuro immune conditions that also have, neurologic and psychological symptoms, there's a higher rate of insulin resistance, a higher rate of obesity, higher rates of high blood pressure, higher rates of metabolic syndrome, prediabetes, diabetes, obesity, and severe obesity.

and if you have any of those conditions, you have a more aggressive disease course, earlier time to job loss, earlier times to, loss of independence needed assisted living or nursing home care.

What does a fast American diet do for those comorbid conditions that I just rattled off? Yeah, I'm glad you brought this up, because this is an area where we have already advanced from research to actually making the program available for people, and this is the metabolic health program that we have, under our new health.

and so in, in what we have, to support this program launch, we actually have, have, published for studies alone the natural history of, from people being overweight to insulin resistance to, to type two diabetes and to even 14 years with type two diabetes is, you know, that about syndrome.

It's a continuum, right? People start, from being overweight to show endothelial dysfunction and insulin resistance all the way to beta cell fatigue, and then and then they become diagnosed as a person with diabetes.

And then and over time, the body's ability to make insulin decreases. And and now I'm happy to to share that. To

people with any symptoms. And during that continuum.

So people listening with they have symptoms that they could know like maybe I have this. Yeah. Actually the most common symptom is no symptom. That's part of the problem.

That is so so that is you can know it's a very easy blood test to check right from hemoglobin A1 C to to glucose level. But people just feel fatigued.

They feel heavy. But people could also attribute that to stress of everyday life. And this is the biggest problem. Most people with prediabetes don't know they have diabetes.

People with diabetes actually, about a quarter of them actually are not aware of the fact that they have a diagnosis of type two diabetes. And this is this is why education programs such as this is so important.

Awareness is number one. Okay. So be sure to be talking to your physician asking to please be screened. Could have diabetes, could have metabolic syndrome.

And then so please talk to your, for your medical team, ask to get screened. And then if you do have metabolic syndrome. Now tell us what what can the first American diet your program.

Know is very, very, very interesting. You know, we we published a paper about two years ago in the journal JCI. And and using the fast and the the King diet.

So we're talking about five days of nutrition intervention. No drugs, just five days. And for the rest 25 days of a month, people actually go back to to living their normal life, no special diet.

They go back to eating whatever they were eating. So in that randomized controlled study, right. The intervention included the FMD every month for six months.

So that's a six cycle program there versus the standard care arm. And we showed number one that there was a 1.4% of one C 1.4. That is a powerful drop in your blood glucose right.

Hemoglobin A1 C is a measure for your average blood glucose. We know for example, one point drop in A1C is equivalent to almost 30% reduction in long term complications.

And we show 1.4 that that can rival any medicine. And we talked about five days of no drugs, five days of nutrition interfere with our FMD. Five times six months, that 30 days of effort to do that.

But at the same time. And those are people with, diabetes or prediabetes. With diabetes, actually with diabetes, in that study, they had 14 years of diabetes.

You know, we used to think that once you're further along in type two diabetes, you cannot reverse it. It's it's wrong. Through the FMD, there is this rejuvenated, aspect of this.

So so that's that's glucose control number two in the intervention. A lot of people actually lost about 22 pounds. But more importantly, they kept their muscle.

They did not lose the muscle, unlike a lot of the drugs out there with GLP one agonists like Ozempic and others, that often is associated with about 30% muscle loss.

Right? So that's a big to 30% of their weight loss was due to muscle. The FMD actually preserve lean body mass mass. I think that's so, so important, especially for patients with Ms..

So so lose that fat without losing the muscle. That's second point number three.

Metabolic Health, Diabetes, and Clinical Results

In the same study we show that there was a reduction of insulin resistance markers of insulin resistance by 59% by er doctor, as you probably know, when.

You explain, what that marker is because our audience don't know. So the incidence resistance marker, we use a way of looking at, how much insulin was secreted to, relative to how much glucose is in the body.

So, for example, if it takes a lot of insulin to drive the glucose down a little bit, that means the insulin is not very efficient. And when we have a turn we call that insulin resistance.

It takes more insulin level to do the same amount of work in lowering the glucose level. Okay. And so we're able to show a 59% reduction in the human eye are a marker of insulin resistance, which is which means that we are addressing the root cause of type two diabetes rather than simply drive down the glucose level.

Right. So that's also another very huge aspect. And then lastly, I think, the most important thing for me as a clinician is the fact that people who were in the study, 67%, that means two thirds of the people in the study were able to experience a reduction in their medications.

So think about that. A lot of times you'd want to drive weight loss. You want to drive, in one see reduction or blood glucose reduction. What do clinicians do?

Clinicians increase their medications. But in this study, we were able to see two thirds of people were able to reduce the medication without sacrificing their control.

In fact, they lost weight inside, the glucose got better and they used less medicine and they reduced the resistance. But what does that say? It says that we are doing something very different.

We're treating the root cause of type two diabetes. We're preserving the lean body mass. And in fact, we know now through the H paper that I share with you in the beginning of this program, we help the cells to become younger, right?

When you make the cells younger, every organ system gets better. And that's why you see the muscle preservation. You see the A1 is getting lower. You see the reduction in medication.

Because now, as I'm listening to you talk about type two diabetes, I'm thinking about my patients who are overweight, thinking about my patients who have prediabetes, who's A1, C might be, you know, between, you know, 5.9, 5.8, 5.6, 5.7, they would very.

Commonly. I'm thinking of my people with metabolic syndrome who have a big belly, low HDL, high triglycerides, that they would all benefit. Yeah. That was I mean, that's about 95 million people in the US that that fit that category.

So again, if you were listening to this and you have M. S. or a new immune condition, you can look at your belly. Is your belly bigger than your butt? what's your most recent blood pressure?

Over 130 over 80. you could look at your lipid values because most of you probably had lipid values with your primary care doc. Were your triglycerides elevated?

Was your HDL low? If you have those one or more of those conditions, you're on your way to developing metabolic syndrome. And then doctor shoot, what would this program be suitable for those individuals?

You know, based on these four studies, we have developed a program, specifically whether you have type two diabetes or the half metabolic syndrome or prediabetes or simply wanted to lose weight, we use in all natural FMD based programs.

But then we also bring on a full time dietitian to support that individual through that entire journey. And so and if you have a, diabetes as a condition, we, we also partner up with telehealth companies that have, physicians specializing in lifestyle medicine to make sure that your medication is decrease appropriately throughout this journey because it works.

Right. So, yeah. So, you know, we we need to safely prescribe or de-escalate your diabetes medicine. So we also have put that together in a very comprehensive program so people can naturally reduce their medications, be the root cause of type two diabetes.

And we call that ultimately getting into diabetes remission, the same goal we have for a lot of age related conditions like multiple sclerosis. Now we have a live program to drive type two diabetes remission.

So, and I'm thinking about that. You reduce blood pressure, appropriate blood sugar meds. And I would think if you're going through the first American diet program and your own blood pressure meds, that's going to be really important to work with your whoever's prescribing your blood pressure meds to let them know that you are.

And this is true for any lifestyle intervention that you do, because your blood pressure meds may also need to be adjusted as well. You're going to feel lightheaded and and we don't want you, fainting.

So yeah. How would people so we've given them some clues to think about. Do I have metabolic syndrome? Do I have prediabetes? might I have diabetes? That's not been recognized.

And they get that sorted out and they realize that they do have one or more of those conditions. How would they access this wonderful program that you described?

Yeah. Now, this program is commercially available and you can go to a website. El Dash, a Dash Neutra and ultra pulse.com in there. You will be invited to join a free membership.

And one of our specialists will will speak to you on the phone to explain the various programs. Essentially, we have a coaching program. So we we have a six month program for people with metabolic syndrome.

And we have a full fledged 12 month diabetes remission program with all with all the medical supervision dietitian and FMD all as part of that program.

And so we want to there are many choices. And that's why I take a phone call to explain that that program will be very helpful for you. It's all new to health.com.

And the first step, for those of you who are listening, is to entertain the possibility. Might I have metabolic syndrome because even skinny people can have metabolic syndrome.

So, get your lipids, talk to your crystal medical team, and ask, could I have metabolic syndrome? Could I have prediabetes? So your primary care person can start that up for you, then go to and give us that website again.

It's l-nutrahealth.com okay. Now I'm thinking that we've covered everything.

Accessing the Program and Closing Remarks

are there other autoimmune conditions that may be impacted. We talked about inflammatory bowel disease. We talked about MS I know there are other systemic autoimmune conditions that can have neurologic symptoms.

I'm thinking like, rheumatoid arthritis, systemic lupus, and of course, there are many, many, many different types of autoimmune conditions, some of which will have neurologic or psychiatric symptoms.

Is this, a potential benefit for those? But I think, you know, we are, we are constantly doing new trials, both pre-clinical as well as clinical studies.

In fact, I have 14 active clinical trials ongoing right now. Some of them involve or immune conditions that are a little too early for us to conclude.

But, you bet that this is a major focus of our investigation, so stay tuned. many resources is still ongoing. So, want to be a responsible scientist and, and just continue to, to invest in research, but until we have solid data, we'll come back to you, on the other conditions.

Now, you know, when I think about, you know, my my own experience with fasting, I, when I was quite young, I was into water fasting. and, then I discovered the fast smoking diet that was so much easier.

and I, did that for, several, several years. And I certainly encourage my patients to, lean in to the fasting mimicking diet because many, many of my patients with MS also have metabolic dysfunction.

They they have, evidence of insulin resistance that is very, very common. And there are and that is true even into my very, normal weight or thin. They would never have thought that they would have prediabetes or, metabolic syndrome.

You know, as a clinician for over 25 years, I, I have a strong passion to to really empower the patient to take their health into their own hands. Yes. I'm a physician, I prescribe medication.

So I've done it for many, many years. But it's part of these reflex, right? Physicians with with with everything. It's a drug. Everything. It's a drug. Right.

And so but now through all these years of research, we we finally, identify a way a reverse some of these, these pathologies, especially in the metabolic area, with a novel natural, drug free approach.

I just, Dr. Wahls I just want to really want to encourage your, your listeners to, to take control, to look into these some of these new innovations, they have come up that have unlock the secrets of, of science and think about you know, the cellular rejuvenation and autophagy.

We did not invent that. Nature invented it. Right. And this is part of the survival mechanism of every lifeforms on Earth. And we just we're just tapping into that mechanism, for self, healing to occur in our own bodies.

So, I would just, I echo what you said and really encourage your, your listeners to take control of their own health. For better metabolic health and finally, for healthy aging.

I I'm a grandma now. I'm so excited about that. But my plan is to live and thrive to 120. I so want to be doing, education, of students, of, post-docs, doing research, and doing summits for the public like this.

Dr. Hsu, this has been wonderful. I so appreciate the work that you do. and I am hopeful that one day we will be research partners. Thank you. We look forward to that.