Summit Introduction and Speaker Credentials

Welcome to the reverse Alzheimer's Summit. I'm your host, doctor Heather Sanderson, and I could not be more delighted and more privileged to welcome Doctor David Perlmutter today.

He is a board certified neurologist and five time New York Times bestselling author. His books have been published in 32 languages and include the number one New York Times bestseller, Green Brain The Surprising Truth About Wheat, Carbs and Sugar, with over 101 million copies in print.

He's also recognized internationally as a leader in the field of nutritional influences on neurological disorders. Hence why we have him here today. He serves as a member of the editorial board for the Journal of Alzheimer's Disease, and has published extensively in peer reviewed scientific journals, including the Archives of Neurology, neurosurgery, and the Journal of Applied Nutrition.

Doctor Perlmutter is the host of a great podcast called The Empowering Neurologist. I listen to every episode. I'm a huge fan, and also the video series The Science of Prevention.

He's been interviewed on many nationally syndicated television programs, including 2020, CNN, Fox News, The Today Show, Oprah, Doctor Oz, and many others.

Doctor Perlmutter, thank you again for joining us. Welcome. I'm so delighted to be here. Thank you for having me. So we met in person briefly at a recent conference, and it was hard for me to pin you down because you kept taking off to go hiking, which I love.

But there is something really compelling about taking advice from someone who actually lives it. The things that you and I talk about, they're not always easy to implement.

So we're asking people to get more exercise and make better decisions around food and diet. In the face of a culture that has sugar and alcohol and sitting on your butt.

It's really easy to just do that, right? What do you think are the most important lifestyle choices that you make every day, or at least most days, right?

Lifestyle Choices and Brain Health

We're not all perfect. I think it'd be great just to let your audience know that where you and I had that conversation was in the parking lot, and, the Venetian Hotel in Las Vegas, Nevada.

So when you talk about alcohol and sugar and sitting on your butt all day, that you know what else could come to mind? And you're right. So with my wife and I decided and son, he visited as well, that we were going to get out of town.

And we went, hiking and at Red Rock. So the point is, it's it's really important. We are kind of inculcated with the notion that we should live our lives come what may.

And then once things start to happen, there'll be a magic fix, no matter what it is. Yeah. You know, you cannot take care of yourself and ultimately have degeneration of your hip.

And you can get a new one or a knee or whatever. But you can't really get a new brain. And it's really, so important that we realized there's nothing pharmaceutical available as you and I have this conversation right now.

You know, we think back of what happened in February of 2021 with this aduhelm drug was, you know, it was the rave, but actually it didn't work. So, we have nothing, in the pharmacopeia to, to treat this incredibly pervasive, situation called si.

Now, dementia of the Alzheimer's type now affecting some 6 million Americans highly, you know, it's 50% of people who are age 85 or older. So in that age group, it's you couldn't call an epidemic.

It's way beyond epidemic. And yet no one talks about it and no one talks about it until a loved one is involved. Or, you know, or it's your choice of profession, or in my case, both.

So it, you know, we have the data and we've had it for a couple of decades. That lifestyle choices that you bring up are exceedingly valuable in choosing a more appropriate destiny for our cognitive function.

And it's the mission, then, to get that information out to people. And, you know, that's that's why you and I are doing what we're doing today, because, you know, there are powerful, there's powerful scientific research that supports exactly what it is that we will talk about the idea that physical exercise can preserve the brain.

The idea that keeping blood sugar under control, reducing inflammation, reducing stress, getting a good night's sleep, involving a ketogenic diet from time to time.

There's so many areas to explore. And and yet, you know, again, most people ask themselves, well, why bother? Well, you begin to wonder why you bother when you're faced with Alzheimer's for or cognitive dysfunction for yourself or your loved one, and then you wish you would have heard this information.

So there's a lot to talk about, that's for sure. Yeah, there are so many people who are still told that there's nothing you can do for dementia, and yet there is so much that you can do that it can sometimes get a little overwhelming.

And especially if you're in the the position of being maybe the loved one or the child of someone with dementia, potentially there are genetic predispositions that you may have at that conference.

I heard you mention that you think almost 100% of dementia can be related to genetics. Can you explain how you got there? Yeah. And that raised a lot of eyebrows, and I'm glad I was.

I always like to do that. You know, traditionally we have said about 3 to 5% of Alzheimer's may be genetic or have a strong genetic component. And that, you know, I think traditionally that's valid.

We know that there are certain genes in gene, the AP, array, I have a role to play in terms of risk, no question. They predispose, they don't determine.

They're not determinants. But through the lens of how we are currently challenging our highly refined genome, that has served us well for millions of years, how we're suddenly challenging that genome and all of its downstream attributes with our current lifestyle.

Genetics, Uric Acid, and Metabolic Risk

That's where I, I make the statement that the the issue relating, genome to Alzheimer's or diabetes or obesity or any of the chronic metabolic issues, is this inappropriate relationship between our current environment and our evolution, in other words, what our genome wants to see or should see and what it's actually seeing based upon the lifestyle choices that we are making and what I was speaking about.

And, you know, I've been speaking about this in terms of blood sugar for quite some time, but what I was speaking about at the conference, that where we ran into each other was the idea that humans were put under environmental pressure.

Actually primate, our primate ancestors, long before they were humans, 14 to 17 million years ago, with a time

when the Earth became cooler and there wasn't as much food available.

And it was a very powerful selection, input. In other words, it tended to select those individuals who could make a little more body fat and who could raise their blood sugar just a little bit and might have even had a little bit more inflammation to help protect them against infection.

Not a lot, but just enough that they were the ones who survived and the others perished. So whatever gene changes this group was experiencing would be passed on.

And ultimately, we've determined that one of the gene mutations that happened, some 14 to 17 million years ago in our primate ancestors was, the gene array that deals with the formation of an enzyme called europace that breaks down uric acid such that it became less functional, meaning that these ancestors had higher levels of uric acid.

Now, most people have heard of uric acid in the context of gout. Sure, but now we know that uric acid is a central player as it relates to our metabolism, that uric acid is playing a major role in our blood pressure control, our lipo genesis, how much fat we produce, how much fat we burn, our metabolic state, even the production of new blood sugar called gluconeogenesis and insulin resistance are all highly influenced by our uric acid levels.

Those of our ancestors who had slightly higher levels of uric acid survived and passed on to the next generation. That mutation, the uric acid gene there actually several of them mutations.

And each human today walking the planet has that mutation such that we are predisposed to make more fat, to raise our blood sugar, to raise our blood pressure when we consume certain foods like fructose, fruit, sugar, the consumption of fructose millions of years ago and continuing on to our Paleolithic ancestors allowed them to survive.

They'd find the berries in the fall, eat that level of fructose. They would make it through the winter when they couldn't find food. So it's been a wonderful adaptive, genetic scenario nowadays, with the incredible change in our diets, with much higher levels of fructose, higher levels of other chemicals that make uric acid like purines and higher levels of alcohol, we're making uric acid left, right and center.

And it's telling our bodies to make fat, make blood pressure higher, make blood sugar higher. And so in a very real sense, then these metabolic diseases like cardiovascular disease and Alzheimer's and some forms of cancer, and certainly diet type two diabetes represent a genetic issue.

They relate back to these changes in the human genome that we're for 99.9% of our time. Survival mechanisms. Now, when they're challenged by our current environment, they're leading to these metabolic issues, these chronic degenerative conditions that are ranked by the World Health Organization as the number one cause of death on our planet right now, not some kind of infection.

It's actually the chronic degenerative conditions. Good news is that these are related to our lifestyle choices, and we can bring them in when we make better choices.

And that's what you know, the messaging is all about. That's really exciting that we have control over a lot of this. I know that you get into this in the book, but I want to give our listeners some of that kind of tangibles.

What is the ideal range for uric acid, and how frequently do you suggest testing that, especially if you're going to make one of these lifestyle interventions.

Can you start reversing this in 12 weeks? Can can this be resolved much sooner than that? You can you can reverse your uric acid or begin to, institute change within days.

That's the good news. One study actually in England, looked at 22 young men who had slight elevation of uric acid and put them on either quercetin 500mg a day or a placebo, and in two weeks their uric acid levels came down 8%.

That's that's dramatic. So, you know, when you couple to that, question and you couple to that lowering your fructose consumption, making other dietary changes, you can really have an impact on uric acid very, very quickly.

So I generally check my uric acid, not that frequently because it generally is remaining low. I check it at home with a uric acid monitor. Happen to have it right here on my desk.

And there it is. And my last level was whatever that says 4.7. And so to answer your question about what it should be when you go to the, doctor's office and you have your uric acid level, check the lab that it spits out will tell you that the normal range is seven or below.

And I have a problem with that on two counts. First of all, I don't like normal range for my patients. Normal is lame, I want optimal, I want tip top.

Tony. I want people to be really achieving extraordinary health, not just average, which is what normal is, right. And the other thing is that number 7.0 was derived based on gout, based on risk for gout, and based upon the level of uric acid in the blood where it begins to form crystals, which is what gout is all about.

Although now we know that people have elevated uric acid, actually have crystals forming in their blood, vessels in their heart, and even in the prostate gland.

So it's something beyond just your great toe. For example. So we're targeting a level of 5.5mg per deciliter or lower. That's the level below which, we begin to really have an impact on risk for cardio metabolic issues, risk for neuro metabolic issues.

I know that's not yet a term, but I'm going to throw it around and hope that it gains traction. Neuro metabolic. You heard it first. And so it's it's certainly a lot lower than what was determined to be the cutoff in the past.

And gratefully so. You know, what I love about this as a provider is that it's so simple and cheap and easy. If a patient walks into my office, I mean, we can get this done through LabCorp or quest.

It's widely available, usually covered by insurance, very inexpensive. And that, you know, as you know, I work closely with Doctor Bredesen and have been implementing this protocol, doing a lot of the the testing, which is very, very extensive, and it's not accessible to everyone, but something as simple as uric acid that gives us so many insights into this neuro metabolic state is, it's doable, right?

It's that simple ability to do it and take action and use that data to make some lifestyle changes and then get the feedback that makes all the difference in the world.

The feedback especially. I mean, I am really, very much enamored with the notion of having, data on myself and others, that allow them to know what is the effect, on my blood sugar today, based upon the fact that I stayed up too late last night, or I ate dinner or too late, or I didn't exercise.

And what how, is my blood, uric acid level doing lately? Because I've had a little bit more, whatever the food may be aged cheese, for example, whatever it may be.

And, how did I sleep last night? What does my ordering tell me? You know, how much heart rate variability am I having? What's my oxygenation? What's my performance based on my Apple Watch and all these things are really incredibly valuable.

And there's certainly a, an, a move amongst mainstream medicine to rein this in. There was an interesting editorial appearing in the Journal of the American Medical Association last year, really saying that if you're not diabetic, why would you want a continuous glucose monitor?

You shouldn't have one. But my my point would be, if you don't want to become diabetic, then you should have a continuous glucose monitor and you can figure it out right away.

You'll learn real quickly what foods are particular for you that are raising your blood sugar, or how your blood sugar might respond to the fact you didn't sleep well last night, or you didn't exercise, or you have a lot of stress.

All these factors play into blood sugar long before the doctor says, it's time to pop you on medication because you've got diabetes. Now, you know it's not.

Diabetes is not like being pregnant. You know, being pregnant as you either are or you're not. Diabetes is should be looked upon as a continuum from having normal blood glucose, though the blood insulin level is now elevated.

That's already getting to a situation that is paving the way for diabetes. The pancreas is working overtime, creating higher levels of insulin to bring the blood sugar back to normal.

In that case, your blood sugar is not really that valuable in comparison to looking at the insulin level. So I'm all for people really knowing what's going on in their own bodies, for crying out loud, and being able to make these changes.

You know, the argument was, oh, people are going to become neurotic. Well, maybe that wouldn't hurt a little bit to become a little bit more involved in understanding your personal physiology.

One of our favorite games to play in my office is the provider state. Okay.

Monitoring Biomarkers and Continuous Feedback

If we had our levels at testing cortisol for our patients and for ourselves and blood sugar and ketones, we just start adding this wish list of all the things that we would love to get real time information on, and so we might experience with wearing a continuous glucose monitor.

I changed my diet completely. I didn't realize how my blood sugar was spiking with my morning matcha. And so I had to switch that up a little bit. But certainly the personally, I've seen it, I've seen the benefits with my patients.

And, so I thank you for being I think you're involved over there, with some continuous glucose monitors and having people like you suggesting that that our patients take the reins.

Right. Like modern medicine isn't doing the trick. We're not getting healthier people. We're actually having a population that's less healthy. And we if we can get the power and the information in the hands of people who can then respond to it and use it, we're going to get a healthier population.

Right? And basically, modern medicine is focusing on the smoke, not the fire. I gave a lecture a couple of years ago to, I guess it was a group of, doctors, in a large, medical group up in new Jersey of under 400, in the same under the same umbrella.

And I asked the audience, what is your go to treatment for, type two diabetes? And, you know, summit were, you know, talking about this medication, you know, stuff on your ears, metformin, whatever it may be.

That's the best thing we can be doing. And then I said, okay, great, great, great answers. So I didn't believe it. But I said, what happens when you stop the medication?

And uniformly they said, well, the blood sugar is going to go up. And then I said, then did you really treat the underlying problem? Did you really treat the diabetes or just managed their blood sugar?

They realized they weren't treating the problem. They were treating the manifestation. They were treating the the smoke and not the fire. And then I presented the work of Doctor Sarah Hallberg, using a ketogenic diet in diabetes and and getting people off of their medications, and keeping them off their medications and allowing them to maintain normal insulin levels, normal blood sugar levels.

That's treating the problem, that's putting the fire out and not just fanning away that the smoke. Right. And, you know, you have a book called Brain Wash and a lot of what you're talking about there, the pattern that comes up is that modern society doesn't really support the healthiest humans.

Your current book is also called Drop Out. And so before I leave this, what do you think about psychedelics as a neurologist because of the title drop?

Yeah. I and you were at, probably the same lecture that I was at, at that last event, which was interestingly given by our son, Austin Perlmutter, M. D.

and, I think that as he well explained, there is huge, huge potential here. And when we recognize historically what got in the way of this research and the clinical research, and how that sidetracked us for 30 years at least.

And now the pieces are being picked up. I think there's there's really incredible potential to, reconnect us. We wrote, Brain wash about this idea that we had called disconnection syndrome, whereby inflammation, brought upon by, you know, the various metabolic things that you and I are talking about right now, inflammation tends to segregate our brain away from being able to tap into the prefrontal cortex and kind of locks us into more primitive, impulsivity type thinking, which is self-centered, not thinking about others.

Don't think about the future as opposed to being able to use this prefrontal cortex and bring the adult back in the room and I think that one thing we see with meditation is that it tends to light up that prefrontal cortex and psychedelics as well.

So, I think that, moving forward, we're going to see that there'll be a lot of empowerment derived from the appropriate, judicious use of specific psychedelics in certain circumstances.

You know, Austin talked about how various, psychedelics or things that are somewhat characterized as being psychedelics are proving useful in certain clinical, issues.

So I think we're going to we're right at the very beginning of, of understanding what where clinically that can go. But I think overall I'm very, very bullish on I think it's going to be a huge, a positive way of really unwinding a lot of issues that people have with respect to brain functionality and with dementia in particular, that disconnection, that and not having that social interaction can be, and then that leading to depression, anxiety, those are all risk factors for dementia.

So using whatever tools we can to combat and especially after a pandemic or going through a pandemic like the one that we are in right now with Covid, these these things are all, a bigger and bigger problem that we need to find solutions for.

So thinking outside the box, and especially hearing it from a neurologist that psychedelics might be something to delve deeper in, in terms of the science and certainly doing that in a safe way with, somebody who's well trained ketamine, it tends to be something it's sort of in that category that's relatively accessible.

Do you have any thoughts on ketamine and particularly. Yeah. And again, talking about, ketamine. You know, one could argue the fact that, well, it's not really a, a hallucinatory psych, psychedelic per se, but I think, you know, the data coming out with, with, major depressive disorder, is really profound.

I mean, far more successful than any, pharmaceutical intervention currently, you know, approved for use SSRI or other forms of, of, antidepressants. So I, I am very, very, excited about the role that ketamine might, might have, in, in that regard.

But, you know, there's a unifying feature I think, amongst many of the things that you just mentioned, and it's inflammation, whether it's, dementia or depression, anxiety, inflammation is always hanging around.

And, you know, whatever it takes to rein in inflammation may prove, may prove effective. I read an interesting

article this morning proposing the use of helminths, or small worms in eggs, giving eggs of small worms to people to help reduce neuroinflammation, in that it may prove helpful with these particular issues that we've just talked about.

So, you know, I think the bigger issues relate to, you know, diet and elevated blood sugar and obesity and changes in the gut bacteria and how those all play into augmenting this inflammatory cascade that seems to underlie many of these problems.

What we described in brainwash was this fundamental role of upregulation of inflammation, separating or disconnecting the term.

Ketogenic Diets, Inflammation, and Psychedelics

We used the prefrontal cortex from having influence over the more impulsive, shortsighted amygdala. So we can bring that connection back online. And I think, you know, that's the real mission that will then allow better decision making, thinking about the future instead of just today.

Now we are, you know, given this notion that just do whatever you want and we'll fix it. And, we really need to bring that prefrontal cortex online and embrace the fact that the future is coming and there is no treatment for Alzheimer's, from the pharmaceutical industry.

And it's really up to us. So we really have to leverage that ability. We have to embrace the idea that first we are responsible. And, second, that we're choosing our cognitive destiny, in a very real way, aging versus dementia.

So is there some normal thing about cognitive decline as we age, or do you think that people should be able to maintain and maybe even achieve higher levels of cognition as they get older?

You know, I think dementia is a pathological state. There's nothing supportive, nothing good about dementia. There's no attribute about becoming dementia.

So I think it's pathology. I think it's not just part of growing, it's just not old timers diseases or or, you know, acceptable, senior moments. There is no such thing as a senior moment in terms of writing away this notion that suddenly you don't remember your grandchildren's names.

That's that's clearly, pathological. We are living longer than we ever had. That's for sure. And, you know, our bodies and brains, one in the same, manifest the accumulation of various things over time that are not necessarily supportive of structural or functional continued, activity, that, you know, compared to younger reproductive years.

But there is an interesting, idea, that that the dementia that we have is characterized by kind of shortsighted, risk taking, not leveraging prefrontal cortex cognitive function as much as it's as you should as possibly being adaptive.

And let me walk through this because just a little bit needs a little bit of unpacking when the brain activates what's called the polyols pathway. So it's converting glucose into fructose.

Ultimately that leads to a situation of compromising functionality of various parts of the brain and reverts the brain to, what is called foraging activity, a situation whereby we act impulsively.

We're not thinking about the future, we're just looking for food right now because the brain thinks the body is starving by virtue of the fact that the fructose level is higher.

And that could have been a survival mechanism, obviously, to be in that foraging behavior, you know, it's more characteristic of of rodents in the laboratory setting when you give them higher levels of fructose, for example.

But nonetheless, we know that the Alzheimer's brain is a brain that is characterized by much higher levels of fructose, as much as five fold increase fructose produced within the brain.

How do we know that? We know that because glucose to fructose has an intermediary called sorbitol. And sorbitol levels are very high in the Alzheimer's brain as well.

So the fundamental here of Alzheimer's may be that it was, I hate to say, designed, but was preserved as a way of enhancing foraging activity, limited activity, less thinking about things, less, you know, being able to cogitate, as a survival mechanism.

So, of course, in today's world, the, you know, the higher levels of fructose in the brain, lead to things like insulin resistance, even higher levels of glucose, upregulation of uric acid production, therefore more inflammation.

And as such, you know, are fundamental towards this notion of a a bio energetic defect or a defect in the way brain cells are able to utilize energy. Why?

Because your mitochondria have been disrupted by the higher levels of uric acid, and also by fructose metabolism, which is an energy consuming ATP to AMP activity that ultimately results in defective mitochondrial function, as does uric acid by its augmentation of free radicals challenging the mitochondria, and what happens when mitochondria become, not as functional?

A couple of things happen. First of all, they, replicate those dysfunctional mitochondria A and B mitochondrial dysfunction is sensed by the nuclear, DNA, to trigger caste based enzymes that ultimately leads to preprogramed cell death.

So that defective might a contra ultimately leads to neuronal death. So this is the downside consequence of this bio energetic defect, whereby brain cells are seen on these Pet scans that look at glucose utilization, that the brains of Alzheimer's patients show areas where glucose can't be utilized. Why?

Because those neurons have dysfunctional mitochondria and insulin isn't working as well as it should. And so, you know, this gets back to this so-called bio energetic defect that I think is very, very, very fundamental as it relates to Alzheimer's and can be bypassed by a ketogenic diet, as was recently demonstrated by Doctor Matthew Phillips.

Demonstrating cognitive improvement in mild to moderate stage Alzheimer's patients on a ketogenic diet. And you can show that on brain imaging that looks at radio nucleotide labeled the pseudo acetate versus glucose.

You can show that whereas these areas are not utilizing glucose, they can utilize ketones really well. So they're functional but not functioning to a certain extent.

So it it speaks to then mechanistically, you know, what has happened over millions of years, if you will, in terms of something being adaptive versus something, now in the face of our current environment, being threatening similar with respect to the ApoE e4, predisposition for brain degeneration.

Well, there must have been an upside or we wouldn't have perseverance of AP for 25% of our population carrying at least one allele. Why would it be there if it's always going to make people demented?

And that wouldn't be a good thing? Well, why would it persevere first, if it's going to cause dementia? Generally that's past our reproductive years. So that's one explanation.

But the other side is that it may confer upon us an increased level of inflammation, which traditionally was probably a good thing because it would help us fight infection against bacteria and parasites.

Aging, Dementia, and Brain Energy Metabolism

We know, even now, that there is a strong representation, of ApoE4 being protective when parasites infest individuals in certain equatorial tropical regions and offering them protection against dementia, carrying the AP for a little when they have parasitic infections.

So, you know, it's time to take a step back and really take a deep breath and look at all this information that we have and look at it in the context of all of these things, possibly offering us a survival mechanism now in the form of these individuals living in these tropical areas.

But certainly all of us historically, when the world was much different. Right, right. I'm so glad you mentioned that. Know study, because what's happening, what you've described is that the fuel isn't being used efficiently in the brain.

And so what can you do? You can switch the fuel. Right. And that can be you get almost the opposite of this foraging response that you were describing where you're just thinking about right now.

You just need to eat. In a ketogenic state, many people actually have mental clarity. They stop being hungry. They're not as desperate for to find that sugar rush.

And they are able to think more clearly, of course. And they have less anxiety. They start to sleep better. So you see a lot of things resolved. Now, I wouldn't argue that people should be in ketosis forever.

Probably just as bad as burning sugar for fuel would be always burning fat for fuel, but some mix of going back and forth and getting the brain healing benefits.

What? When I think about ancestral diets, what was consistent about them was inconsistency. Absolutely. Flexibility. Flexibility, adaptability. And this kind of goes to that comedic effect. Right?

A little bit of stress on the system can actually increase our ability to respond to changes in the environment. And so wherever we can do that, we find that that the brain responds to that.

So with a, calorie restriction or a fasting mimicking diet like the ketogenic diet with hot and cold therapies, with oxygen, sometimes even, of course, in the right context, in a, in a safe place.

But there are ways that we can exercise is a phenomenal example, like one of the best where we stress the system a little bit and then get this response that's so good for long term health.

That's right. But it all requires action and is here's the big divide. Is my action going to the doctor and getting a prescription? Or is my action utilizing the very things that you are talking about today?

And that's the great divide. And, I think people need to come upon that intersection and ask themselves, you know, two roads diverged in the wood here.

And by and large, it's a lot easier to say I'm going to continue doing my, you know, live the life that I want and to my life, you know, I'm going to choose my to do the things I want to do.

And then when the time comes and I'm having a problem, then I'm hoping that there's going to be something out there for me. And, we see that play out quite a bit these days in terms of how people make certain decisions and do certain things.

And then when they don't, they don't play out exactly right. They're suddenly requiring, you know, an, an intervention. So that said, in the context of, of Alzheimer's, you know, affecting now 6 million Americans, for which there is no treatment.

Yet we know that lifestyle choices are powerful levers to pull, in terms of reducing a person's risk for an incurable situation. I think we need to present it like that.

We need to let people know this is an incurable situation. It's a one way street, but you don't have to go down that street. Well, I would I would beg to differ a little bit because I'm seeing dementia reversed in my office regularly.

No, I'm talking about from a pharmaceutical perspective. There is no pharmaceutical fix now, to be sure. I mean, we talked about the work of Matthew Phillips.

We can certainly talk about the work of doctor Dale Bredesen. If we get away from this model of a pill, or perhaps two pills and recognize that in each individual we can identify areas that may be contributing to this brain decline and remedy those.

If people are willing, then absolutely. I mean, you know, Doctor British and wrote a book about that recently, you know, the the people that he reverse.

I wrote the forward to it. As a matter of fact, that he's reversing dementia and, and and, you know, I wrote the forward saying that this is landmark.

I mean, it really it's incredible. If I were on the Nobel Prize committee, his name would be right there on the table because he's he's done it. He has done it with a totally different paradigm that doesn't hope, put hopes in $1 billion, multibillion dollar blockbuster drug that's going to give shareholders a great return on their investment, but rather leveraging as many as 36 different endpoints.

That can or in influxes that can have an impact on changing what may be a skew in the brain. It's a tough concept to to get people to get their arms around.

But your point is certainly well-taken that it is happening. Maybe the ketogenic diet is not for everyone, and I don't think that it is. I think in individuals whose brain metabolism might be normal.

Or can we fingerprint people based upon their glucose scan versus their keto scan, and determine who then would, would best benefit from a ketogenic diet?

But we need to also look at the other inputs. Are there infections going on? Is there chronic Lyme disease? What's the blood sugar? What's insulin sensitivity looking like?

What is the uric acid level. You know, all of these things are extremely valuable in and of themselves. They might be playing the lion's share of role here, as it relates to that particular person's individual, issue.

You know, I, I think of the, the person who says, doctor, my feet are hurting. I walked five miles a day and look at the blisters that I have in my responses.

Well, you wearing shoes? And he says no. And so I give him some shoes. And the next time he comes back, he has blisters again. And, I said, well, why didn't you wear the shoes?

He said, well, I have a size ten, foot, and you gave me a size six shoe, and, he didn't fit him. And, I and my response as well, most people, that's the size most people wear.

So that's really your problem. So that's what we're trying to do though with Alzheimer's. We're trying to put everybody into one size shoe. And as Doctor Bryson made very clear, people have different requirements, different needs in terms of, first identifying what's going on in their particular situation and then providing that suite of remedies.

So one of the very, you know, appropriate criticisms of Doctor Medicine's approach, what I do every day in my office, is that there's not enough research if you are very research driven.

And one of the things I appreciate so much about you is that when the data changes, you change your mind, right? Which is what any rational person should do.

And I get criticized for it, but that's okay. Well, I, I'm here to tell you how much I appreciate it. So when the data changes, hopefully there will be a groundswell of support for this from, from neurology offices, from primary care

offices where they will say, hey, there is something you can do.

It's not just aricept and I mean that there is a lifestyle that you can choose to follow, and you may get benefits from it, and not just with dementia.

But hey, your hemoglobin A1, C is going to get better at that gout may go away. You're going to see resolution often of blood pressure. And so what do you think would be the research.

What is the paper that you would need to see or read? What is the study? What would be the design of the study that would make you fully convinced that this is a I'm going to have to tell you that I'm, I'm embargoed from answering that question right now.

I will say that it's it's it's been written, and I'm going to have to leave it at that. There are a number of things that I do, that, I'm going to have to, I would just say be confident.

I can't really take it further than that right now. But, you know, unfortunately, the research has already happened. Books have been written, and it, you know, it's so frustrating that it doesn't seem to move the needle because, you know, mainstream doctors are told this is the pill we're going to.

And if it doesn't work, hang on. We got a new one coming down the pipeline. You know, Pfizer abandoned, medication research for Alzheimer's because it wasn't they just weren't finding anything.

They were losing, you know, millions and millions of dollars. So, you know, what Doctor Breton has come up with is a different or a totally different paradigm.

I think coming up against mainstream medicine and specifically mainstream neurology is is very, very compelling and very challenging. And I, I would hope that, this would rise to the top and people would pay attention to it.

But, you know, hope is not a strategy. And I don't know what the right strategy is. I mean, I've talked to this, about this topic of doctor medicine on any number of occasions and we've said, yeah, you know, published the research.

We had got to write a book. And now he's on his fourth book, I guess, and, it's happening that he's doing these things, but, it's very frustrating because he's getting the results that nobody else is getting.

And yet, it's so challenging to get people to pay attention to that. And here is a guy who's heart and soul in this, you know, he dedicates every ounce of his energy to this whole, idea of a multifaceted approach in terms of identifying causality and then rectifying whatever is askew.

Personalized Nutrition and the Gut-Brain Connection

And, and, you know, you couldn't ask for a more dedicated individual in your corner and yet, you know, I think he's making progress. I think more and more people through, the work of, of other doctors who are using his protocol, like yourself, who are following the protocol.

I think that's certainly helping a lot. You know, percentage wise, it's not a huge number as they say, Alzheimer's patients who by and large are going to take the aricept and the namenda or nothing, hopefully. And, but, you know, we got to stay with it.

I want to stop you there. You said aricept namenda or nothing. Hopefully. Tell us a little bit about why you would prefer a patient take neither. Well, the research shows that neither is the best choice, that these drugs don't work there.

So she was side effects and publishing in, Jama network several years ago. Richard Kennedy, indicated in looking at, you know, a fairly large number of individuals that those individuals taking at least, the Collins inhibitor aricept, actually demonstrated a more rapid decline cognitively than those who did not.

Here's a drug being given to Alzheimer's patients to slow down their cognitive decline. And lo and behold, they decline more rapidly. And yet it's still okay to write prescriptions for this drug.

I, I would say, don't get me started, but you are. I'm started, that's for sure. Well, you know what I just offer? I have seen patients who have started on those drugs, and then when they come off of them, when they try to come off of them, they get precipitously worse.

And it's no question, I mean, what happens when you, you know, when you're working at the NDA receptor or you're inhibiting, cholinesterase and therefore building up, acetylcholine?

What happens when you stop that? I mean, you know, there's rebound effects and it's been well-described and I don't think that, the manufacturers don't know that because, you know, people say, well, we'll stop the medication, see what happens. Bingo.

People get worse. So, you know, I, I, I don't see the sense in using them. That's my opinion. I can back it up, but I want to, you know, I want to look at the glass being half full and focus on these ideas that we really are getting our arms around these fundamental mechanisms that are leading to brain functionality decline.

And now that they're being addressed where they're infection, toxic, metabolic, degenerative in terms of being related to other degenerative conditions, what they may be and identifying them and then remedying those underlying problems and seeing the results that Doctor Breton is, is describing.

That is to me, the glass half full of the glass is really almost pouring out the top. It's that common sense, right? This, this paradigm that instead of naming a disease based on what the symptoms look like, you start to ask the question, why?

Why did this happen? And you even mentioned inflammation is one of the potential causes. And I want to just push back a little bit on that because I think this inflammation is downstream.

That's right. I agree with you. There's it's mechanistically very important. But I think it's clearly downstream from many of the, upstream mechanisms, including metabolic dysfunction, possibly even infection.

I mean, the notion of infection being related to Alzheimer's has been around for a long time. I think Doctor Ruth, the recent Serkis work in At Cambridge, was published 25 years ago, identifying one particular organism, herpes simplex virus type one, being Co localized to beta amyloid and inducing an inflammatory response.

But I think the biggest player, clearly in our modern world in terms of inflammation has to do with our glucose, insulin, dysregulation model. And, you know, that is so cat wampus these days.

And it's downstream issues that further augment inflammation, like obesity and, disruptions of the microbiome, leading to gut permeability and upregulation of, of LPs transgression across the bowel lining and therefore, you know, even higher levels of inflammation.

But I agree, it's a downstream issue. And I think to approach it appropriately, we have to look at those upstream issues like uric acid, like blood sugar, like fasting insulin levels, not necessarily glucose levels, you know, more tangentially, looking at, a1, c at body mass index, all of these things that clearly, pun intended, feed into, inflammation, which ultimately, you know, the brain becomes the brain is inflamed, it's on fire.

That's the meaning of the term. And then the downstream effects of that being, things like upregulation of free radical production, compromised, mitochondrial function, and ultimately this energetic issue.

I want to talk a little bit about Green Brain. You published this originally in 2013. It's been wet. It's coming out at some point. It'll be a decade next year.

And it's right, like you like we've already talked about. As the data changes, you change your mind. So you've

made updates to this and I'm curious. I mean, in 2013, you were one of the first people saying that even if you didn't have celiac, you may want to consider getting away from gluten because of this downstream affective inflammation and leaky gut.

And there I'm sure you got a lot of criticism and pushback. I can only imagine you, which is a good thing, right? You know, if the course if you're putting things out and there's no pushback whatsoever, then you're you're at the status quo.

If everybody says, yeah, I got it old news and you're not helping to move the ball down the field, well, you certainly did. And you continue to. I know that the updates in the latest edition include things like the microbiome that you started to talk about.

So I want to understand with your, just assessment of the literature where things are right now, what is the best diet for our brains. And I would tell you it depends on who your, who is your patient.

So you know, it's often said that it's more important to know the patient who has the disease rather than the disease the patient has. So I think, you know, we are now in the time of personalized medicine.

And I think it's not appropriate to be very specific about a dietary recommendation per se for any individual. But I think we should have dietary goals.

What are those goals? Our goal should be to, make sure this is a diet that's going to be really effective in helping keep blood sugar normalized, that's going to keep down inflammation, that's going to provide the suite of vital, micronutrients that we know are important and will certainly nurture the gut bacteria as well.

Now, might that be different based upon your unique polymorphisms in terms of how you, produce, B vitamins or how you, are able to detoxify certain toxins to which you are exposed and therefore you as an individual might need upregulation of certain pathways.

Might you then want to concentrate more on cruciferous vegetables or etc.? You know, that's where the personalization comes into play. But I think the fundamentals are those goals we want insulin sensitivity should be improved and then maintained.

We want to nurture the widest array of of gut bacteria. We want to reduce gut permeability. We want to be sure that we are not creating a situation where we're actually enhancing in the brain fructose production through the polyols pathway.

We don't want to increase fructose production anywhere in the body. So our goals of reducing inflammation and reducing, free radical mediated stress, etc.

are the end points. And how we get there can be through multiple roads leading to Rome. In other words, again, what works best for you? And that's where the notion of wearable devices, continuous glucose monitoring, etc.

comes into play. Because then I'll know what Heather may need, in terms of her specific a diet that might well be different from what I might need, right?

Right. And what what were some of the things that have surprised you over the past ten years? As you've kind of dug deep into this, what are what are some of those tenets that you sort of let go of and, and are now using?

Well, I've never admitted this before, but I will right now. And that is I was more taken by, the, the, the role of our gut bacteria in terms of overall health and certainly brain health.

That was more, of a revelation to me then. The notion that gluten can have neurological in some people can cause neurological manifestations. You know, that was simply reading research, you know, primarily a researcher in, at Oxford, Marios, Joselu, who started publishing this stuff.

And I thought it was really interesting. I started getting results in my practice by reducing gluten in patients diets and their headaches would improve, etc.

but the microbiome relationship no one was talking about and you know it. To me it kind of stood to reason if glucose disregard, glucose homeostasis and inflammation were sort of cardinal players in brain degeneration, then making the leap to the role of disturbances of the gut bacteria in those two parameters.

But at that point, people were starting to realize that changes in the gut bacteria could predisposed to type two diabetes, and even that things like fecal microbial transplants could help with type two diabetes.

Whoa. If it'll help with type two diabetes, then there may well be something going on in the gut that relates to the brain. So that was the bigger leap for me.

Over the years. I think that some of the things that have changed for me before green brain, well, before Green Brain, was the adoption of, the recommendation for more levels, higher levels of fat in the diet.

You know, 25 years ago, I was sort of parroting the the standard discussion of low fat diet being a good diet. And I realized, you know, we all realize where that actually came from and how what a disservice that was for those was practicing, clinical medicine or nutritional counseling, you name it.

So that was a big shift for me. That was prior to Green Brain. That's for sure. So the diet moving forward with time has become much more plant based.

And there's still room for meat in my diet, but much more plant based, because I've realized that a dietary fiber is so underrepresented in our, our modern world, and is yet fundamentally so important to nurture our gut bacteria so they can help resolve inflammation, they can help with production of appropriate neurotransmitters, appropriate B vitamins.

We can help produce serotonin by down regulating pathways that take tryptophan away from serotonin, the urinary pathway. So many different things that our gut bacteria do.

They you know actually are involved in changing gene expression, for crying out loud. So yeah, I was just going to ask you exactly that question, like in a nutshell, or in the most instinctive way possible, what is the gut brain connection?

And you already mentioned neurotransmitter balance and genetic transcription. Like, can you say to synthesize for us, I think we hear that term. It's very trendy gut brain connection. Gut brain connection.

But like, what does that mean? Well, I would say, frankly, that we shouldn't be even having this discussion, that they should never have been segregated.

Right. When did that all begin? You know, with Descartes and the idea that while we have, you know, we have the bellows, which are the lungs, and we have the pump that's the heart.

And there are these independent parts that, you know, ultimately come together to form the body.

Reframing Alzheimer's Prevention and Hope

That's never how the human body was looked upon prior to Descartes. You know, we it's always been looked upon as sort of a unified whole and, dare I say, a whole list, a holistic perspective.

So the notion that, you know, I'm trying to defend that there's a relationship between the gut and the brain, which, you know, I'm not being, you know, that's something I have I've done countless times.

So there are multiple levels by which they're connected, but ultimately they're all part of the same, that everything

is, is responding to the same influences that the gut represents.

A powerful this is a great place to start, a powerful way of informing the brain as to the external environment. That's really one of the most important things that the gut does.

It informs the brain as to what's going on in the outside world in terms of the environment, in terms of food availability, in terms of, even, water availability in terms of threats, for example, but, you know, there are physical connections, of course, there are immunological connections that are profound.

There are chemical connections that we are just beginning to understand, in terms of things produced in the gut, that directly, moment to moment to moment influence brain.

Functionally, there are relationships and mechanisms. Have we talked about earlier, like inflammation and glucose homeostasis, that are profoundly influential in terms of brain health and functionality.

And there are, top down issues as well, related to the gut, from the brain, again, physical as well as chemical, hormonal. So the relationships are multifaceted.

And, you know, I've at multiple levels. So, you know, to me, why should it be a surprise that it's now, as you say, trendy to to conceive that the gut is somehow involved and influences the brain.

It's only been in the past couple of hundred years that they were segregated. And, it's now time to, you know, really recognize that we, our entire bodies are functioning, as a content with just continuity between all seemingly disparate parts.

And this is where that bread us and paradigm shift around dementia starts to make a lot more sense, right? In that idea that we're putting the body back together and myself as a natural path, you know, that's the way I've been trained.

So I sort of take it for granted. We have to put the body back together, the person back together that integrate reintegration. Yeah, exactly. And that, that even though many people end up with the same diagnosis, you know, we like this from an ICD ten perspective, from an insurance perspective that fits the model.

But when we can set that aside and say, okay, how did you arrive at this in balance? What are the things we need to offer to the cells, to the body, to the system to help optimize function?

Well, then we can change the conversation from talking. Adele, reticent to talking to somebody like David Sinclair, where we're saying, okay, how do we live to be 150 and really have these fabulously wonderful lives where we get to show up at our great grandchildren's college graduations and be part of, of really just enjoying our elder years and, and contributing in our elderly years that that wisdom and experience is so valuable not only for one family, but for society as a whole.

And so when we have people with sharp, clear minds who are able to show up at work or at church or at family gatherings, that we there's so much we're throwing away when that's not happening.

And yet it's all possible today it is, and it really is. And, if you want to blame somebody, you can blame me for for not being as totally effective as I could be and blame Dale Bredesen because we can't get the word out.

And we're trying some people over here. But, you know, that's the issues that we are up against, incredibly powerful forces that would have us believe that Alzheimer's is simply a loss of acetylcholine in the brain, the colon, acetylcholine hypothesis, the collinear hypothesis.

And that if we can put the acetylcholine back, then everything's going to be just Jim Dandy or amyloid plaque or amyloid or Alzheimer's is simply the accumulation of beta amyloid in the brain.

If we can keep it from happening or take it away, problems solved. And that's the the narrative that is that makes its way, certainly to the general population.

But much more importantly is what doctors are being, told in their journals, at their meetings and then through the advertising for the drugs that target those specific activities, it's hard to go up against that because, you know, truthfully, doctors want, to practice medicine within a 15 minute window that you've got you name the problem and then you have a pill.

And as it relates to neurology, oftentimes it's diagnosed scenarios because there is no pill. But, you know, in other specialties it's oh, you have high blood pressure.

Here's your blood pressure pill. See you later. You have, you know, you have diabetes. Here's the drug. Take the drug. As long as you take that drug and keep filling that prescription year after year after year until you die, we will accomplish our task, which is getting your blood sugar under control.

No, that is not the task. That's not the challenge. The challenge is to treat the diabetes, to treat the fire, and not just the smoke. And we know Doctor Sarah Hallberg has shown us that you could put diabetics on a ketogenic diet, and they can come off their drugs and not ever need them again.

That's treating the fire not just the smoke. It's it's a tough road. But, you know, we're still, in the batter's box, and we're going to keep swinging as long as there's there's something to hit.

And once in a while, we we hit. And, you know, in my life, for example, you said a lot of people have read Crane brain how many will act upon what we wrote about?

Not everyone, that's for sure, but a percentage of people have read it and a smaller percentage of them will act upon it. But, you know what? If one family can be spared the agony of Alzheimer's that I went through with my father, then it's worth it.

At the end of the day, at the end of my life, it's worth it. My agree with you completely. Alzheimer's is optional. There are things that we can do today to prevent it for the vast majority of people.

And if we can spare one family from the torture that is dementia, then it's worth showing up. Thank you so much for showing up here today. For lending your time and expertise to this and for inspiring, all of our listeners who are joining us.

Thank you for having me. And, I sure appreciate the opportunity. And my, my hope is that, you know, there's something here that people can hang their hat on just as a way of just opening, a little part of your mind that there may be another way out there, and that, frankly, we are each involved in choosing our brains destiny.

It's not a, you know, it's not something we can outsource. I'm certainly inspired by the sheer volume of phone calls that we get both at my clinic and at Marama, the residential care facility.

And, how many? It usually it's a daughter, but they, they come in through the astic and ready to get started and, really and inspired not just the caregivers, but the patients who are the pioneers in this space who are showing us what's possible.

It's incredible. That's right. Thank you.