The Real Reasons Brain Health Declines—and What You Can Do About It Transcript

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Introduction and Research Background

Welcome back to the conversation. I am now joined by doctor Dale Bredesen, M. D., who is an internationally recognized neurologist with specialty expertise in the mechanisms of chronic neurodegenerative diseases.

He is the senior director of Precision Brain Health at the Civic Neuroscience Institute, and the chief scientific officer at Apollo Health. Doctor Bredesen has contributed significantly to medical knowledge and literature over the 30 patents and nearly 250 papers.

Notably, he put much of his findings in research into the 2017 New York Times bestseller The End of Alzheimer's. Doctor Bredesen, welcome. Thank you so much, Jason. Great to talk to you.

Yeah. And I guess we're going to have to add to that list, because you have a new publication that I'm really excited to dive into. But for those who may not know your name, I first heard about you, I think in maybe 2010 when I think your original paper came out, if I remember correctly, detail or maybe 2014 something, or in that range.

The first paper was the first report of reversal of cognitive decline in people with Alzheimer's we put out in 2014. So yeah, great memory was 2014. I actually saw the first patient in 2012 and in 2014 wrote up the first ten.

But we've come a long way since then. You know, we had a paper with 100 documented improvements in cognitive decline. Then we had a proof of concept trial that was published in 2022.

And then doctor Heather Sanderson published a confirmation she did her own trial and got virtually identical to results to what we had. And then what I'm excited about is we just finished a randomized controlled trial at six sites around the US, and we had the best results ever published.

So this is now in peer review. But the preprint is already available and had over 14,500 downloads. So very excited about that. And also, I have to say, I'm honored to work with the six clinicians who were involved with this Doctor Kat Toups, Doctor Anne Hathaway, Doctor Christine Burke, Doctor Craig, Tonio, Doctor Nate Bergman and Doctor David Haase and really fantastic results with the people in this particular randomized controlled trial.

So very excited. And we saw improvements in their in their composite memory, improvements in their executive function, improvements in their overall neurocognitive indices.

So very, very enthusiastic about that. And yet. Of course, in the trial, 90% of people showed some improvement. Now some of them dramatic improvement, some of them modest improvement.

And then, of course, there are the 10% that didn't show improvement. So we want to understand why did some people do so well and some people not respond.

Typically what we've been finding is the ones that don't respond are the ones that simply aren't doing the protocol, or the doctor really hasn't looked into what are the critical drivers of the process?

I mean, this, this all this work all came out of 30 years in my lab looking at all the things that drive this change and what we found. You know, Jason, what we found is really fascinating.

Just as you go from sleep to wakefulness. So you have this mode switch. You know, a whole set of things, hormone changes and of course, gut changes. All these things that are changing as you go from sleep to wake from the ceiling, your peristalsis is changing all these things.

What happens is you have a connection mode where you have your tau is not phosphorylated. You're not making these prions that are damaging the brain. You're not making a lot of amyloid.

You're literally focusing on connection. Your amyloid precursor protein is cut at a single site, and you're making things that make new synapses. So you're literally in connection mode.

On the other hand, when you have these various insults, leaky gut viruses coming up, your virus or bacteria coming up your vagal nerve and into your brain stem, which changes in oral microbiome, chronic sinusitis, tick borne illness, toxin exposures.

From Drug Discovery to the ReCODE Approach

You literally have this beautiful biochemical switch that takes you from connection to protection. And what's amazing is you can follow the molecular biology, the change in phosphorylation of tau, the change in neuronal signaling, the change in synaptic versus synaptic classic signaling.

It is remarkable to see. And when you look at Alzheimer's, all it really is, it's put you it's a chronic situation where you're in that protection mode and away from the connection, so you're not making new connections.

And in fact, you are sacrificing the connections that you have made in order to protect your brain against these various pathogens, toxins, metabolic change, gut leaky ness, all these sorts of things.

So we're really understanding the biochemistry of what happens in your brain. And what's important is that this really comes back to just brain health in general.

So you can see that, you know, if you are having metabolic syndrome, if you've got a poor gut function, if you've got a, you know, an abnormal microbiome, these things are all giving you brain health compromises, even if you're not all the way to having Alzheimer's yet.

So there's a lot we can all do. We have a guy recently who went from those guys out working usual, you know, normal person, but he scored 10th percentile on his memory studies.

We put him on the program. Turned out he had some especially some metabolic abnormalities, horrible insulin resistance. For example, five months on the program, he's now scoring 91st percentile on his memory.

So, you know, all of us can do better with our cognition. That's remarkable. I mean, you know, and I'm going to go back to that kind of 2012 time timeframe.

I think what's fascinating to me is, you know, you've been looking at neurodegeneration. Yeah, most doctors, especially in the the research world, really look at it from a perspective of how can I find a drug to address these things.

What was it for you that kind of really I mean, look, you're kind of a renegade, I guess, in the medical world to kind of look at diet, lifestyle supplements, nutraceuticals.

Very. You know, when I saw this, your original work, I said, yeah, this this makes sense. This is amazing, you know. So in one sense, it was like, I guess, kind of obvious in a sense.

But on the other side, it was it was revolutionary in the field of neurodegeneration because at that time, at least as far as I was perceiving, there was a general acceptance of dementia and Alzheimer's.

It's a one way street. This is how it goes. At best, we can manage. Try these drugs. Yeah, sure. You know, change your diet maybe, or sure. Try to get some sleep and exercise.

We all know that's good, but there was no real intervention and certainly no plan in place to to actually come up

with a trial or a study to look at this stuff.

So what was it for you that, like, really drew you into pursuing that in a very research minded way? Yeah, a great point. And of course, then every expert said the same thing.

There was a standard tag line and you could actually see it on the Alzheimer's Association website, and it said there is nothing that will prevent, reverse or delay Alzheimer's disease.

Like that's it. If you got it, got it still persists, right? Like even with your work, this is still the prevailing paradigm in the medical community.

And I would say largely in the in the general population. Yeah, it's actually amazing. So what we were doing at the time was what just what you were describing.

We were looking for drugs. And so we had discovered in the lab that there was this switch back and forth. We were just looking at a tiny little piece of it, which was app signaling.

So you have this amyloid precursor protein. It sticks through the membranes of your neurons and to a lesser extent, other cells. And it's especially at synapses.

And it's clear that is the parent of the amyloid itself, the little, little peptide. And so we were looking at this switch. And so we said okay let's look for drugs that keep you away from the amyloid side and put you on to that sap alpha, that side that seems to be associated with anti Alzheimer's effects.

And we were screening through these drugs. And so we actually had one very interesting one that we identified called tropism Tron. It was available in some other countries for other things not for Alzheimer's.

Nobody had ever looked at. So it would be a repurposed to drug. And we thought, okay, we need to set up a trial for this. As I was sitting, I was actually sitting in my office looking at the whiteboard.

We were putting all the stuff down for the trial and I thought, well, wait a minute, that doesn't get it. All the pieces. I thought, you know, maybe we should add like brain training, because professor Mike Merson was the is the godfather of brain training and the one who developed brain HQ, which still has by far the most data associated with improvement in cognition.

And I started thinking, well, each of these things alone is not perfect. I thought, well, now what if we started adding, you know, what if we started adding like some exercise?

And then of course, after about 3 or 4 of these, the light bulb went off. And I thought, now why would we withhold anything if we're talking about this network insufficiency, which is what we realize in the lab, if you if you graph out, if you look at all the molecular species, you know, there are over 25 molecular species that just interact just with AP alone.

It's a it's an integrator of all these different things. And, and you can literally follow the molecules. You can see estradiol binds its receptor goes into the nucleus, it changes hundreds of genes.

And one of the ones is the one that cuts the app to go toward connection. So you can literally see this beautiful ballet playing out in front of your eyes.

And so I thought, well, if this is if we really believe and if the if all the data are showing that this is a network insufficiency, you don't take a hammer to those things and whack them and say, okay, just do one thing and everything's going to work.

It's kind of like trying to fix a country or a company. You've got to tweak here and tweak there, and you got to look at all the things. What actually drove this problem.

So we started saying, oh, okay. And then of course, Patient Zero came to see me in in April of 2012. And she was from the CIA, actually, and was ready to commit suicide because her mother had died of Alzheimer's.

She'd watched her mother die. And then she was she had now been to her doctor, and her doctor said, you've got the same thing your mother had. There's nothing I can do.

Key Drivers of Cognitive Decline

And then I got a call from her friend who happened to be near where our institute was and said, you know, you were going to do this trial, but it got turned down by the by by the IRA that we were the trial was actually supposed to be done in Australia, because that's where you could get easy access to trapeze Tron.

And it was going to be trapeze Tron alone versus placebo. And then the whole set of things with or without trapeze tron. So the idea was, could we see this additive effect of the drug candidate with these various other pieces?

And the IB said, no, you can't do something that has that many pieces. It just has to have one thing that's and you can kind of just see the people who were on the IRA after they turned it down, contacted us and said, can you help us do this in our own patients?

And we said, guys, let us do the trial, please. So, you know, this has been as you said, this has been a real slog because I r BBS and medical standard of care is to do one thing.

But these diseases, like Alzheimer's and other complex chronic illnesses are not one thing diseases. They are multifactorial. And so you really do have to chase down, although there's some basics that everybody can do.

You've got to chase down the things. If this person has a tick borne illness like Babbage or Bartonella or beryllium or Erika or Anna plasma, you got to chase it down.

You got to treat it. And by the way, Doctor Richard Horowitz, the lime expert, as a remarkable case recently, someone who had chronic Lyme and the Alzheimer markers went up.

P t is the classic one p tau 217 as he treated the chronic Lyme, the cognition got better and the Tao came way down. So it goes right back to what we've seen for so long.

There are multiple things that contribute, and you've got to identify them and you've got to go after them. The typical thing we see is severe metabolic dysfunction, damage gut health.

And then on top of that, some toxin exposure. When you address those things, these people, one after the other after the other get better. And it's really great to see.

Yeah. It's interesting. You know I in the work that I do, I, I kind of phrase this to my clients and students that there's basically the body knows how to be healthy and there's these blocking factors.

Right. So we have our habits right, which we can all control. Right. They may be difficult. They may be difficult to change, but that's under our realm of control.

And then we have these blocking factors that are kind of getting in the way of, as you said, this sort of connection, right, versus versus protection mode.

Right. And that's really what we see, the nervous system level. We see it even at the mitochondrial level. We have these kind of two modes of operation in.

The body's always going to choose survival first. Right. And it's going to stay sort of stuck there or remain there or be conditioned there until we can get these blocking factors out of the way and restore some of this healthy function.

But again, I'm kind of I want to go back to this for you. So you're whole breeds and protocol, which I really that's what everybody calls it, you know. And we can call it that.

Was it the recode. Was that what it is? Yeah. We could for reversal of cognitive decline. Yeah. Which is a great name. But I think people just say, oh, this is breathable because because it was so revolutionary.

What are some of the key factors for in the British and protocol that I guess made this so revolutionary in the medical world? Yeah, I think the key was that this actually is what fits the research.

If you actually look at the idea of anti amyloid antibodies sucking the amyloid out of your brain, it makes no scientific sense. It was you know, it was 1990s thinking.

And it just took a long time to develop the drugs. And they're actually been over $40 billion put into this now. But it doesn't make your cognition better.

That's been shown again and again and again. So the idea is we want to look at the common things and we want to figure out. So the bottom line is you have assessment and then you have treatment.

On the assessment side you want to look at three key groups. So anything that reduces your energetics you saw what happens. You've got 500 trillion synapses in your brain.

You have the ability in your brain to store more information than over 200 home computers. It's incredible actually. So you've got all these, you've got all this incredible ability to store information.

And what's happened is that as you now decrease the support, so energetic. So it's sleep apnea. Very common contributor to cognitive decline, poor blood flow, sedentary lifestyle, poor mitochondrial function reduced oxygenation.

So I check every morning I check and see okay, how is my oxygenation? When I was sleeping last night or sleep? Another great one. Another common one. So energetics number one.

Number two is anything that induces inflammation. So what happens is the inflammation can come from, as I mentioned earlier, tick borne illnesses. We see it all the time from bio toxins.

We see it from a leaky gut. Maybe that's the most common of all. We see it from poor dentition. We see it from chronic sinusitis, which often patients and their doctors ignore. Yeah.

You know, I've had a little sinusitis for years and years. Well there is it's been shown now that there is tremendous interaction between what's going on in the oral cavity, in the sinuses and in the brain.

And in fact, you can literally trace as these things go back. And in fact, there's a normal brain microbiome. And that that's the opposite of what I was taught in medical school was supposed to be a sterile organ.

Well, that turned out to be wrong. And what do you find in the brain as a normal microbiome? A lot of stuff from the oral cavity. So it's common. So, you know, period.

On Titus, a gingivitis, you know, a deep abscesses that you may need to pick up by convict of course mercury another big one airway issues. So the oral cavity is a huge player in cognitive decline.

So anything that is inflammatory that's the second piece. And then the third big piece, which really surprised me because I wasn't taught this in medical school or in neurology residency or fellowship.

And that is toxicity. And so, you know, there were some you know, there was a question about aluminum and questions about mercury, but nothing about bio toxins.

They turn out to be so common, so important. Nothing about microplastics, of course, nothing about anesthetic agents, organics. So we think of the toxins, then the toxin exposures as three different types.

It's the inorganic air pollution has turned out to play a big role. Second one is the organics toluene, benzene, anesthetic agents, as I mentioned, microplastics.

And then the third group is and maybe the worst of the three is bio toxins, incredibly common trichomes scenes. Okra toxin a interestingly, is one that is particularly damaging to the hippocampus, the very area that's so important in memory and so important in Alzheimer's disease.

And so we see this all the time. And of course, not only do you get the toxic effects of these things, but you also get this pro-inflammatory effect. As Doctor Richie Shoemaker described years ago, this is a as he called it, chronic inflammatory response syndrome.

So it is an inflammation that is been driving anything that is driving inflammation in your brain. And that includes things like mast cell activation, various chronic infections, again, leaky gut, all these sorts of things.

This will enhance your likelihood of developing cognitive decline. So that's a lot of things you've got to be careful about. And you just have to find them and address them and people again and again and again we see these miraculous improvements or things that were years ago, miraculous people with cognitive decline actually doing better.

Now, of course, as you can imagine, as you lose more and more synapses, you got a longer and longer way to come. And now then the idea of removal, optimizing things and then rebuilding, resetting and rebuilding the rebuilding becomes a bigger and bigger issue.

And then you're looking at, you know, stem cells and hormones and all these sorts of things and trophic factors and, and all these sorts of things that you have to do to kind of get back to where you were.

But this is why if you come in relatively early, there is so much that can be done. You know, if when you develop Alzheimer's, you go through four phases.

There's the pre-symptomatic phase and the great news we can pick that up now with simple blood tests, you can get literally go to get a brain scan and pick and get this up.

I just had mine check my tau 217 checked a couple of months ago. If from between 35 and 60 check it every five years. You don't need to do it often. If it's just like hemoglobin A1, C for the brain.

So it's telling you are you headed in the wrong direction here so that you can catch it before their major problems? The second phase is CI subjective cognitive impairment by definition.

You know, there's some problems. You may have some trouble with things like coming up with the right word at the right time, things like that. But you're still able to score normally on cognitive testing.

That's called CI. And by the way, it lasts about ten years. So you really have a tremendous window. Those first two phases 100% of people get better.

Assessment, Treatment, and Early Intervention

The third phase is called MCI mild cognitive impairment. And as one patient said there's nothing mild about it. So that is something where by now, by definition, you do have trouble with your cognitive testing, but you still able to take care of yourself.

And then the fourth and final phase is dementia, where now you're having trouble with activities of daily living, balancing your checkbook, driving home, taking care of yourself, all that sort of stuff.

So we don't want to wait until that fourth phase, right? We want to get it, preferably in the first two phases. In our trial, we only took people in the third and early fourth phase simply because that's what the same time as the drug trials.

So we're looking at does this work better than worse than whatever. And what we found, in fact, is that this was this had the best outcomes of any protocol to date.

This is a precision medicine approach where you actually address the things that drive the problem, and we get better outcomes than anything else. Well, look, I followed your work for quite a while, I guess fairly loosely, but but, you know, I'm good friends with Heather Sanderson, too, so this type of stuff.

But I didn't realize how much we are on the same page. Like you're speaking my language here and not enough, in my opinion. Not enough people are really aware of this, primarily what you mentioned in the mouth and the nasal passage and I run I frequently run tests for, for nasal swab.

And what I find is Markham's, which is multi antibody resistant, coagulated negative stuff, I find mold, I find Klebsiella and other. I mean there's so much going on in the nasal almost nobody's looking.

And look it's got a direct line to the brain right. It's like right there dysregulated the immune system creating inflammation. And then the other area that I send people to and make them aware of is, is their mouth and really advise them to go to a biological dentist if they've had crowns or, or root canals in the past that weren't properly done, or they have some suspected issues going on there, and of course, mouth breathing at night. Right.

Which is kind of that sleep apnea changes the oral microbiome. Right. Creates that elevated inflammation reduces sleep. So I mean to me like these, these two areas that you mentioned that you kind of lead with are dramatically underrepresented or under discussed in the realm of, of really immune function, brain health and overall health like that is so critical that you mentioned that.

So just to kind of recap, we got the nasal passage to to to look at opportunities, nasal passage, the mouth, the gut microbiome are huge. Your habits. Right.

And looking at those blood sugar regulation metabolic health. Right. Which we've we've kind of there's loose loose sort of descriptions of Alzheimer's and dementia being type three diabetes.

Right. Which is kind of colloquial discussed. But but really the part of it invading the message. Right. Which is to say that blood sugar is really important to, to overall health and particularly the brain health in this regard.

Anything I missed in there that's like a primary opportunity. And of course, metals and cleaning up and facilitating good detoxification. And for me, I don't like to aggressively go after things like heavy metals.

I think they're a huge problem. But really, I like a more gentle approach and helping the body to naturally let these things. I mean, they're really significant, right?

If we've got lead stored in the bones, if we've got aluminum, which kind of takes the place of calcium in the gut and other places, this we don't want to move these into the system aggressively.

That's really disruptive. The body has a natural sort of pacing with this stuff. And I think that that becomes an important thing, but super critical to get them out.

Absolutely. No doubt to get them out slowly, as you say, one of the things that was fascinating to us when I started looking years ago at subtypes of Alzheimer's.

So we see a more inflammatory subtype and we see a more atrophic subtype, and we see a more toxic subtype. What we found is that many, many people, and it was typically women who were presenting in their early 50s around the time of menopause and perimenopause with this toxic subtype of Alzheimer's.

And we realize this is this is during that so-called osteoclast burst, where you're now rereleasing some of these toxins that have been stored in the bones for years.

And so you have essentially sequestered them, and now they are reappearing. And it's the same sort of thing that does happen if you are overly aggressive with detox.

So, as you said, you want to move out slowly. And we talked about the testing. They put that into a therapeutic approach. We have the seven basics and the two specifics.

So the seven basics are plant rich mildly ketogenic diet, exercise, sleep, stress, brain training, detox and some targeted supplements. The two specifics are what are the chronic infections?

You have changes in your oral microbiome, changes in your gut microbiome, all those infectious related things. And then what are the various toxins that you have?

Do you have scenes at a high level? Are the is that what's moving the needle for you? What what is changing you over from that connection mode to that protection mode.

And this sort of approach is what has worked better. Then on top of that, all the things coming out great, but people will often try to do one thing and ignore the basics, and there's no question it works best.

And there are so many great new things. You know, photo bio modulation has worked really nicely. Some of the some of the magnetic stimulation. There are things coming out with plasmapheresis and new columns coming out like MT 100 that very, very promising.

So, you know, blood scrubbing instead of actually exchange. There's so many new things, all the stem cell stuff that's coming out. And again, there are stem cell trials, but it stem cell with nothing else is like trying to rebuild a house as it's burning down.

It makes no sense. Now the fire first, then you know, you got to send out the fire. It's the same analogy. Yeah, I love it, I love it. I use this all the time because this is kind of what happens if we and the things that are adding to the fire, the gasoline, so to speak, could be a certain food, but what have you. And then we blame the gasoline, right?

And my whole thing is like, great, take away the gasoline. House is still on fire. Gotta put that out first. So I love it. Yeah. So talk to me about this new research that you, you kind of alluded to.

What what's so new about it and what did you guys find it. Yeah. So much interesting stuff. Because as we're now able to see this disease in a way that we didn't before, that was unknown before some really exciting things pop out.

And I mentioned the randomized controlled trial. I mean, we had the best results in history. So very enthusiastic about that. It's out as a preprint, as I mentioned earlier.

Now we can now take this and say, okay, if we understand these molecular drivers of this neurodegenerative disease, Alzheimer's, we can start looking at are the drivers the same or different for others.

So there's Louis body disease. There are million Americans with Louis body disease. We're seeing improvements in the Louis body disease as well. But you can see already it's got different drivers.

It is more on the organic and bio toxin. It's really a toxin related Alzheimer's. And so real quick what is the sort of clinical distinction like how do you or I guess what's the presentation.

How does that look different in in in the patient or in the, in the real world. Great point. So Louis body disease is if you took someone who's developing Alzheimer's and you added a little Parkinson's, so they have some trouble

with their movements as well.

They often have visual hallucinations because they have dysfunction where they are dopamine and they're still choline. Both go down astill choline more about memory.

Dopamine more about movement. What's low in Parkinson's. But it's also about visual hallucinations. Dopamine up in schizophrenia with hallucinations.

New Findings Across Neurodegenerative Diseases

So what happens as these two go down in Louis body? If the acetylcholine goes down much more than the dopamine, you end up with visual hallucinations, which is common presentation with people with Louis body disease, they'll have a lot more change.

They'll go up and down a lot. So so-called Showtime, they're very good. And then they're really affected. They'll often have some delusions. They'll often have some autonomic symptoms that you see more on the Parkinson's and what's called MSA multiple system atrophy.

So you can start to tease these things apart. First case of reversal of posterior cortical atrophy, which is a about 5% of Alzheimer's patients present with that just recently published by Carrie Rutland.

And what we saw there with that is this person did have tick borne illness and mycotoxins. On the other hand, a different presentation, cortical basal syndrome, published by Doctor Craig Tonio.

That one was much more like Parkinson's, had the organic toxins as the drivers, not the bio toxins, not the Lyme disease. So you can start now picking these apart and looking at what are the things driving.

Why would you get Alzheimer's? Lewy body? Why would you get ALS? Why would you get these? And so I do think we're in an era where neurodegenerative diseases are going to become increasingly well understood and treatable.

One of the ones I'm particularly interested in, I think is an important concern right now is called late. Late, which means limbic age related TDP 43 and cephalopod.

That's a mouthful, but this was just described a few years ago by Doctor Nelson from University of Kentucky. And what they found is that many people and this is turning out to be a relatively common problem for especially for people who are older in their 80s and 90s.

We haven't seen it a lot in the 40s and 50s and 60, whereas we're seeing more Alzheimer's in the 40s and 50s than ever before. That's well documented, published by epidemiological groups.

But what's important about late is that the TDP 43 is a response to a number of viruses, including Covid. And it's been clear that if you've had Covid, you're at increased risk for cognitive decline.

And it looks like some of these cases are going to turn out to be late, so-called late. So we're looking at that right now to see, okay, how do we is this going to be more of a long Covid issue.

Is this going to be more because it's Covid plus immune changes? You know, we'll see. But again, this is an era where everything is opening up. It's not this old idea of you had a protein that misfolded and therefore you got this disease.

It's about what are the drivers? And really we need to focus less on pathology and more on physiology. As you've alluded to multiple times here, it's the physiology.

What is your body doing to try to protect you as it's producing amyloid phospho two or TDP 43 or alpha synuclein

or things like that? Yeah. You know, I think what's really interesting, I think when you came out with that first sort of published research and book, you know, about a decade ago, I think what was people loved the protocol.

Now, what I'm really feeling with kind of your research and where your whole mind is going is like, no, no, no, we're going to actually look at the functional mechanisms and the drivers and the solutions.

Right? Because then then it starts to become I can see it, I can feel it. It's like it all becomes clear, like you're starting to create distinctions between what's driving what's happening and what to do about it.

Right. And that becomes and I think as that picture continues to emerge, there will be further insights into the differences. Right? Like that's what gets I don't know, I'm kind of excited hearing you kind of parse all this out, because I can really see that the future that that, that work you did a decade ago became the critical sort of inflection point in how we're approaching this.

Right? Because, as you said, it was like, okay, we're looking at things that are happening and providing drugs now. It's a completely different direction, right?

That is opening up that I'll allow a deeper understanding and how to prevent these things, what's driving them, so we can target these specific things.

And then the solutions, as you recall, just recently, Ted Turner, who is the entrepreneur who founded CNN and had the idea of CNN years and years ago, just passed away from Louis body disease.

And what's amazing, you can go right down the list here and see what Alzheimer's, what the response is. And Louis body. And just as one example, the amyloid from Alzheimer's is a response to herpes viruses.

So when you are exposed to these herpes viruses, you're making that amyloid which surrounds, sequesters and inactivates the herpes viruses. Well, when you get Louis body, you're making alpha synuclein, which is a different prion, a different immune response.

That thing targets RNA viruses instead of the DNA viruses, the herpes family. So you can see the difference here. In fact, one of the things that targets, for example, is West Nile virus.

So you can just go right down the list and you can see how the body saw different insults with the different genetics, epigenetics and various responses.

You're now having different responses for different things and ending up with conditions which again, in the past we just said untreatable. We don't know what causes it. There's nothing to do. Now.

We can really start getting to the crux of these and understanding, and that will allow us to treat all of them. And we've actually had some interesting results already with age related.

Macular degeneration is another one. So all of these things are degenerative conditions that have at their basis a network insufficiency with different subnetworks that your brain has set in, your nervous system has set up, and you can now start to look at what actually happened and do something about it.

Yeah. You know, it kind of reminds me of of years ago when we blamed cholesterol, you know, for heart disease. And, you know, then we were blaming tau protein and beta amyloid and alpha synuclein.

We're blaming these things as the problem. But in reality, what it sounds like is that these are the these are the firefighters showing up to the fire.

And we're just calling them bad because there's association that okay. Well, if the firefighters are there, they must have set the fire to the house. But the reality that we now know is there there as the solution to the problem.

And sure, that causes issues, right? Just like a firefighter spraying your house with tons of water, it's going to cause water damage and flooding. But the deeper problem was the fire, right?

And we got to get to the solution.

Future Directions and Resources

So this again, I'm just sort of saying that because just to make it very overt here, that there's a deep recognition that for somebody dealing with these cognitive decline issues, that we got to really be mindful, not to blame the Tao, not to blame the the actual proteins that are there, that they're there for a reason.

And it's important that they're there. And we need to understand why they're there and also how to help them do their job, which is to clear this stuff that they're trying to, to, to deal with.

Yeah. Exactly. Right. And these things have all turned out to be antimicrobial proteins and peptides dealing with they are trying to protect you. Unfortunately we have things like mitochondria that descended from microbes and they are particularly sensitive to these same things.

So yeah. And again just like as you mentioned, you know, the fire same sort of thing with the police. If they're shooting, they're going to be some strays that are going to hit people.

And so they blaming the police when there's been all sorts of crime, it's not the right way to go. So where is this going? Where do you, where where in the future do you see this going.

Like where do you have your eyes on. Where's your mind going now with all this latest research and what you guys have uncovered in the past, where do you feel like this is?

I mean, look, we're kind of you can bring this in or not, but, you know, it's always crossing my mind. AI is kind of here, and it's going to continue.

There's some perhaps opportunities there. Where is this going in the future with brain research? Oh, no doubt AI will play a key role. And we have now data on over 10,000 people who've been on the protocol.

So we can start having AI sift through this and look and see what are the things that work best and worst. So there are three things. Three places is going.

One is to make it simpler to say, okay, there's lots to do here, but we can now start to prioritize. If you can just do these three things so that we'll now start to make it simpler.

And bringing in drugs so that we have some tremendous drug candidates. Now that we understand what should be drugged, that doesn't mean you should forget all the insults.

You still have to do the right things, but we're now going to be able to develop much more effective drugs, much more, you know, new generation drugs.

The second place is a global reduction in neurodegeneration to have programs, just as we had a reduction, you know, a simple one. We had a reduction in smoking.

Then we see a reduction in lung cancer, same sort of thing. We have a reduction in metabolic syndrome. We have a reduction in exposure to microplastics and exposure to these various toxins.

And we have fewer water damaged buildings. We're going to have less neurodegeneration. And then the third piece is, as I mentioned earlier, now extending this to all the other neurodegenerative diseases so that we understand what's driving each one.

It is different. Each one has its own fingerprint profile, but there is overlap in things like metabolic damage, gut health really really critical for this.

So we're going to understand better and better about what's driving what. And we should be able now to treat all of these successfully. So that's what I'm really enthusiastic about.

Amazing doctor. And this has been fantastic. Tell people where they can find if they're, you know, if they're helping somebody with Alzheimer's or dementia or they're kind of in that early cognitive decline, or maybe they just want to find resources to, to protect against cognitive decline.

Where can they go? Yeah. So any of the books that I wrote, The End of Alzheimer's, the End of Alzheimer's program, the First Survivors of Alzheimer's and The Ageless Brain, which is more for everyone's brain health, how to get this out there.

And then you can go to doctor Reticent. Also, everyone should check there's a free check for your cognition. My CQ test CQ is cognitive quotient. So my test.

Com and then as I said earlier, everybody should know what their status is with 217. Just like hemoglobin A1, C and the most sensitive one was developed by a group called neuro code.

And you can get that at get a brain scan, get a bra in scan. So any of those things will give you information. And really this is becoming an optional problem.

Cognitive decline should not be so common. It is now the number one cause of death in the UK, if you can believe that. It just shouldn't be nearly as common and we can have a dramatic effect on reducing this if we all work together.

Beautiful. And I couldn't agree more that it's really worth your time and investment to get things checked, to start to implement some of these things.

Doctor reticence books are super practical, by the way. They're not. I know he's very advanced in some of his research and technical terms, but the books are really, really easy to understand, great to put into practice.

Right. So they're not just a mental exercise, although that's good to, I guess, for the brain, but the really, really practical. So I just want I just want to put that in there that they kind of belong on everyone's shelf.

So doctor, thanks so much for coming on today and sharing your time. Appreciate it. Great to talk to you. Jason, thanks so much.