Introduction and Dr. Bredesenu2019s Background

We've had a passive system that says, just shut your eyes, put out your hand, and we'll hand you the drug. And that is just the wrong way to go about complex chronic illnesses and aging.

This is Doctor Talks, real talk from real doctors on the issues that matter to you most. Today's guest truly needs no introduction. Many of you have already heard his name many times.

In fact, it is the name that comes up more than anyone else on this podcast. Dr. Dale Bredesen is not only a mentor of mine, I feel super fortunate to call him that, but he is a trailblazer in the field of neurodegenerative disease.

He's changed the way that we understand and approach not only Alzheimer's, but many neurodegenerative diseases. He's the bestselling author of The End of Alzheimer's, as well as his new book, The Ageless Brain.

He's also the developer of the Bredesen Protocol, something I have never heard him call it, but what people commonly refer to as the Bredesen Protocol is this new approach to treating the root cause of neurodegeneration.

His work has brought people not only hope, but tangible outcomes, real results for patients and their families around the world. More than that, Dr. Bredesen represents a vision of what is possible as we age, not just in avoiding decline, but in embracing vitality, purpose, clarity of mind.

And I am deeply, deeply honored to welcome him to the show today to reflect not only on the science, but on the legacy of a life spent pursuing the reversal of one of medicine's most daunting conditions.

Dr. Bredesen, welcome. Thanks so much, Heather. It's great to be with you. I want to first ask you to look back at the beginning of your career. Did you initially think that you would end up in a place like this, really shaping the global conversation around Alzheimer's?

You know, I just was interested in the brain from the age of 18 when I read the first book about the brain. And I just, at the time, I was interested in computers, actually.

And I read the book about the brain called, it was from Dean Woolridge. And Machinery of the Brain was the name of the book. And I was a freshman in college.

And I read this and I just got hooked. I thought, this is so fascinating. He was talking about how insects have hard wiring, that they have certain behaviors that they don't reason.

For example, they had one where they would pull a prey down into a nest. And then if the scientist would reach and pull it back, it would just repeat that a hundred times.

It never reasoned that, wait a minute, something's moving this. And he talked about electroconvulsive therapy and how memory works. It was just so fascinating.

And I thought, I need to understand the brain better. And so I took at Caltech, I took all the courses they had in neurophysiology and brain related subjects and neuroscience.

At the time, I thought this was interesting. And then I did not realize at that time when I went off to medical school to study brain diseases that this is the area of greatest biomedical failure.

This is an area where Alzheimer's, nothing to do. Frontotemporal dementia, nothing to do. Lewy body disease,

nothing to do. So that's why I thought, okay, we really need to do some research and understand what are these diseases?

I mean, that's been one of the interesting things, as you know. that people just don't understand these. They say, well, you know, maybe it's about herpes in the brain, and maybe it's type 3 diabetes, and maybe it's free radicals, and maybe it's misfolded proteins and amyloid and tau.

As you know, it's just on and on and on and on and on. So at the time, I didn't think that we would end up coming to such a different conclusion than the standard of care that was dictating.

But once you see it, as you know yourself, once you see it, you can't deny it. It's just like, okay, this now is changing things. And I don't want to say for a moment that we're at the end of the road.

There's so much more to be done. This is just the beginning. But I think the beginning has to be to recognize that this standard that has been operating for so long, trying to rip out the amyloid and trying to get rid of the misfolded proteins, is really a misguided effort.

You are expanding this in your work currently, I know, into other neurodegenerative diseases.

How Neurodegeneration Works Across Diseases

So outside of just under the Alzheimer's box, can you draw the lines between the dots here, help us connect that? What is the overarching theory around neurodegeneration?

Yeah, so that's a great point, and thanks for asking. So if you look at what these things are, and they are relatively common, about 15% of the population will die of Alzheimer's disease.

And now that we understand it better, it should be much, much lower than that. And about one in every 700 people will die of ALS. About a million people in the US have Parkinson's.

About a million have Lewy body. And so you just go right down the list. So these are relatively common problems. So if you go back to as our brains have developed and as we have evolved, what's been fascinating is through evolution, of course, You have a repeated selection for performance over durability.

So you end up with these unbelievable brains. I mean, you can store more in your brain, store more information than over 2,000 home computers. When you look at how you can amplify the output going from a thought to maximal muscle contraction, That is more amplification than you get from stomping on the accelerator in your car.

It's amazing what the human nervous system can do. But it is therefore it therefore has these Achilles heels. And what's interesting is in each of the sub networks, it's a different Achilles heel.

So, of course, in Alzheimer's, we see frequently things like insulin resistance and inflammation and reduction in energetic support and things like that.

With the sub-network involved with fine motor movement and motor control, which is the one that goes awry in Parkinson's, it's really mitochondrial complex one.

It comes back to that again and again and again. If you look at the ALS, for example, where you're looking at that amplification, it's really about the glutamatergic uptake.

You're using this excitotoxic transmitter. It's almost like you're cooking with gas, but you have to be careful. You've got to turn off the gas and put out the flame after you're done.

And if you don't do that, it can spread and can damage you. And that's what we're seeing. The great news is we now understand these and we can start to look at how we address, how we identify what's driving in each person,

what's driving the problem, address those things, and then optimize the status.

There are all these interesting paradoxes that we can now begin to address as we understand this. And one of the paradoxes is every one of these major neurodegenerative diseases has at its heart prions, you know, proteanaceous infectious agents.

These were discovered by my postdoctoral advisor and mentor, Dr. Stanley Prusner, who won the Nobel Prize for his discovery of prions in 1997. And why would that be?

So the problem is, there's no evidence that in the vast majority of cases you're actually catching these from somebody, and yet there's no denying these proteanaceous infectious agents are there in these diseases.

So how do we reconcile that? And what we've realized is that these are not just proteanaceous infectious agents, they are also antimicrobial peptides and antimicrobial proteins.

And that's true for amyloid. It's true for tau. It's true for alpha-synuclein. It's true for TDP-43, which is increased in ALS and frontotemporal dementia.

So these are all coming back to the same idea. You are addressing these insults. And so these things that do that can give you problems in the long run with inflammation if they're overrun.

The second thing we realized is that these things are fascinating in that we've vilified over the years, people have vilified these collections of amyloid and tau and alpha-synuclein.

When in reality, what these things seem to be doing is they represent a pre-inflammatory component of the immune system. So before the adaptive part, before the innate part, you have a barrier function, which of course things like cerumen do that in your skin and things like this.

So these things, like amyloid, They sequester, they bind, they surround, and they kill these various microbes. And of course, now we know that your brain has got a normal microbiome.

So in fact, you are dealing with things like oral organisms and sinus organisms and blood-borne organisms. You know, you were talking earlier today about Bartonella and Babesia.

So when you're exposed to these things, like a tick-borne organism, all of these things are ultimately able to gain access. I'm always impressed by the study that showed that it just takes a few minutes for Candida, even though it's systemic, to gain access to your brain despite the blood brain barrier.

The great news is we have this wonderful way that we can deal with these for decades. And people have amyloid in their brains for decades. That's been also one of the paradoxes.

Well, now we understand there's an ongoing pre-inflammatory and inflammatory dynamic there. And so if you now come with more and more pathogens, of course you ultimately flip over.

If you have a predisposition genetically, APOE4 being the classic example, you also tick over into that more pro-inflammatory and damaging component earlier on.

But for most of us, these help us over the years to avoid having the inflammation and the cognitive compromising and the neurodegenerative component. So we can really see these coming.

And so now that we can see these coming earlier and earlier, great new blood tests for Alzheimer's disease. Of course, there's a skin biopsy for alpha-synucleinopathies.

I really look forward to what's coming, which is the mass spec analysis, a relatively simple analysis from sebum to look to see whether you are headed, even before you have any motor symptoms of Parkinson's.

So as we get better and better in earlier and earlier tests, just like looking at things like getting a calcium scan for your coronary arteries, we'll be able to see these coming years ahead of time.

And really, these should be rare diseases. So I think we're really seeing a paradigm shift in the way we think about these diseases, the way we evaluate diseases, the way we prevent them, and the way we treat them.

I think we'll look back on the period of trying to wait until very late in the history of these things, very late in the progress, and then say, okay, let's give a single drug, which really doesn't address what's actually causing the problem.

We'll look back on that as the dark ages. You and I both are very much aligned with this paradigm shift, but not everybody is with us. Can you speak to that?

What do you see as sort of the forces at play preventing this from being adopted more readily? Yeah, you know, there's a rational part of the pushback, which is we'd like to see more information.

Okay, I think that's fine. We've gone from, you know, anecdotes, reporting anecdotes, and then reporting a bunch of anecdotes, and then reporting a proof of concept trial, and then of course you reported your observational trial.

So I think A reasonable person would look at all of this and say, it's clearly published. If you look at all the published results, this approach has given the best results to date, better than any drug, better than any antibody, any of that sort of stuff.

So I think you have to say yes. And so therefore, I think a rational approach is, sure, we'd like to see more data, but for compassionate use, let's start looking more carefully at this.

Unfortunately, there's also a business approach, which is we don't want to in any way compromise the possibility of selling more drugs. So let's knock down anything that has the potential to reduce the interest in drugs that have so far been ineffective?

Why would you pay $50,000 a year for an ineffective drug when for a fraction of that, you can get much better results with fewer side effects? I mean, that just seems fairly clear and fairly obvious.

So again, I think that we have to remember there are some kind of rational pushbacks, which, okay, yeah, we all would like to see more data. Let's fund some bigger trials.

And we are in the middle right now of a randomized controlled trial. The great news is we already have statistically significant results. There's no question you see the people in the standard of care just going down, down, down, as we already know.

The people who are on the protocol are going up, up, up with their cognition, improving their memories, improving their executive function, and improving their cognition overall, reducing their symptoms.

And if you look at what are all the things that actually prove this, I mean, we see improvements in quantitative EEG, in evoked responses.

Pushback, Evidence, and the Paradigm Shift

We see improvements in biomarkers. We see improvements in MRI volume metrics. So there's just no question. Of course, it's not 100%. There is nothing in medicine that is 100% effective 100% of the time, yes.

But in our trial, 84% of the people improved their cognitive status. I know you had very similar numbers. You reported in your paper 74%. the clear majority of people are improving.

Now, to be fair, if you start with a MOCA score of zero, the improvements that you're going to see are things like

improved engagement and things like that.

We don't see people yet coming from zero to perfect scores. We do see people coming from fairly poor scores like 18 up to perfect 30, but we haven't seen someone from zero.

And that's one of our research interests. What would be required to take someone all the way from a score of zero to 30? But I guess the thing that concerns me, number one, this pushback that is business related.

Oh, you know, this is going to impact drug sales or that sort of thing. And then the other thing is people who just say, in fact, this came up yesterday, from the San Diego part of the Alzheimer's Association, the San Diego chapter of the Alzheimer's Association said, it is not possible to reverse cognitive decline.

Well, that goes directly against what has been published in peer review journals. At the same time, what they are saying is, but don't forget to sign up for this multimodal approach that's being done at UCSD, where we're doing things like diet and exercise and lifestyle and stuff.

So on the one hand, they're pushing back against what's already been published. On the other hand, they're saying, but don't forget to do our knockoff version of this thing.

So we are in a very interesting time when there is this paradigm shift. And to me, the good news is things are making rapid progress. I mean, look what we have now that we didn't have 10 years ago.

Just 10 years ago, we had virtually nothing. I saw the first patient in 2012 And she improved between 2012 and 2013. And we published it in 2014. And then it's really taken off.

Your book, obviously, Reversing Alzheimer's has done great. And people have said, yeah, we get this. This is a very reasonable approach to do this. I recognize a lot of times what we've published has been more on the conceptual side, on the science side.

That's my interest. And so we need people. And as I've said before, Teams like your team, you and Dr. Huesner, who are doing this really well are worth their weight in gold because it makes the difference between successful outcomes, literally between dementia and coming back to doing very well, literally between life and death.

We looked at the six different sites that are in our trial. Four of the sites are getting fabulous results. And unfortunately, the other two sites are just not getting good results.

In one case, it was a lack of training for the doctor, unfortunately. The only doctor in there that had lack of formal training. In the other, it may be a health coach who doesn't have the training.

have a really good team like yours, it just makes all the difference. And we just need to see more teams that are really good at this, that are able to interact, that have the right health coaching, and the right nutrition, and the right detox, and the access to all the different things that are used.

But as you know, we're finding out new things. As you've pointed out, The efficacy of PCIV is quite striking. As Dobry-Kiproff and others have pointed out, there are times when plasmapheresis turns out to be very helpful.

I think there's a tendency, though, to say, I'm going to grab my procedure. plasmapheresis, what have you. And I'm just gonna focus on that. And that's not what gets the best outcomes.

You really need to look at the whole person. And this is a personalized precision medicine approach to each of these diseases. Now we, as you mentioned, we can now start to adapt these to the systems involved with ALS and frontotemporal dementia and macular degeneration and Lewy body disease.

Now we've seen some good results with Lewy body already. We've seen the beginning of some good results with macular degeneration, to some extent with Parkinson's, although there's still more that we need to understand

there.

ALS is just being started. As you know, Healing ALS is a wonderful site. Coco Newton and the whole gang over there, they've had some nice results. And so I think for all of us, we're starting to understand these in a new light.

And it's allowing us now to get outcomes that just haven't been available for. And that's why, you know, groups like the Alzheimer's Association and San Diego chapter just don't believe it.

It's been published, but they just can't believe it. I keep saying, well, please talk to some of the patients and talk to some of the doctors. I want listeners to know that there are lots of places to find the nitty-gritty details of the protocol, of how to apply this, of how to get into the toxins and the nutrients and the structural issues and the stressors and the infections and the signaling issues that can come up as we go down this path.

But in this forum today, I really want to focus on sort of a larger philosophical picture. And I'm curious about your life, Dr. Bredesen, about you personally.

And are there any habits or philosophies that you personally think in this space that maybe you're using that are underrated keys to staying cognitively sharp and feeling emotionally fulfilled as we get older?

Yeah, it's a great point. Definitely, I've done a lot of things wrong because I was trying in the past to get that grant out. I would stay up all night finishing grants.

And of course, I did that a lot as a resident and as an intern. So that was not so great. And of course, I'd stay awake with things like Coca-Cola. you know, which I haven't had in years, but that was something that was, you know, you get used to this stuff.

And so, you know, when's the next brownie? Hey, it's time for some pizza, you know, all that sort of stuff. So Aida, my wife and I, and Aida has taught me a lot about this.

She is an integrative physician herself. And so she's taught me a lot about this area. And yes, definitely. I've tried to do the basic seven, the diet, exercise, sleep, stress, brain training, detox, and some basic supplements.

So I, for example, sleep has always been an issue. So I do check my Apple Watch and I try to make sure to get at least seven hours of sleep at night, at least 90 minutes of REM, at least 60 minutes of deep sleep, and at least 94% oxygen saturation.

But I do have nights where the deep sleep is 20 minutes or 30 minutes. So I need to keep on and it's interesting that you can see when things are, when things haven't gone as well.

You know, one thing I found is typically after late afternoon, I make sure not to have anything that I basically focus on salads and water, that sort of thing.

It just, it helps me sleep better. It helps me have, you know, fewer issues. I had a couple of years ago with COVID, I had some atrial fibrillation. And I actually talked to Dr.

Mimi Guarneri, who was fantastic. And it's so interesting because each of these things turns out to be multifactorial. So it turned out there was a combination.

I did have some genetic predisposition. I did have some GERD, which turns out to be incredibly common as a cause. In a European study, 28% of people with atrial fib, just taking some antacids, got rid of their atrial fib, which really surprised me at the time.

As she pointed out, it's very common to be low in magnesium and potassium. So I take magnesium, potassium, and taurine. Those are the big three for atrial fib.

Not had a problem in years now because of that. And COVID definitely can give you a myocarditis, as we all know. And unfortunately, it can be very damaging.

So those are some of the things. And then of course, I do take some targeted supplements. I do take some, typically I take some resolvins, I take some vitamin D, things like that.

I've looked at my VO2 max, it went down when I got COVID. And so I've been slowly fighting to get it back to where it was. And so do more hill climbing and things like that.

I think that's really been helpful. So definitely I'm trying to live more to give myself a brain span that is equal to my lifespan, which is what I wrote about in that book.

And I do think, you know, people will act like it's crazy to say, well, you can prevent this in the vast majority of cases, but we know that you can. In fact, I asked all the doctors who are doing this sort of protocol, I asked them, have you ever seen somebody who started when they were asymptomatic, did the right things, optimized their various things, and still developed dementia.

Nobody has ever said, I've seen a single case of that. Now, I'm sure we will someday, but it's pretty clear that you get started early, it's much easier.

And as you've seen yourself with your patients, if you start someone who's either asymptomatic or who has SCI, these people do well. Or I would even go so far as to say a MOCA score in the 20s.

Yeah, exactly. And that's significant MCI. These people do very well. There is some interesting, as we've all noticed, around a score of 16 or so. something changes and it's harder.

You still can get improvement, but it doesn't come all the way back to normal the way it could before. I would love to understand what that is. It may be that that is the prionic threshold.

These prions get more of themselves. You get past a certain threshold and it's just gonna continue.

Personal Habits for Brain Health and Aging Well

And so I do think reducing that requirement and reducing the presence, and there are things like curcumin that can help with that. as well as these anti-amyloid antibodies, which I hope will be very effective one day when utilized appropriately instead of at these very high doses with nothing else and just ripping this stuff out of your blood vessels and causing microhemerges and brain swelling and things like that.

So I think that you're right, we really have to start reconsidering the whole field, what these things are, what to do about them, and consider the fact that really nobody should get this.

It's almost like when people first started looking at any sort of prevention, whether it was Pap smear or PSAs or now the new blood-based biomarkers for Alzheimer's, Any of these things where you can see early changes, it should make it so that people never wait.

In fact, I've got a couple of people to talk to tomorrow who found out, oh my gosh, my p-tau is a little bit high. Oh, I didn't know. In fact, one of the guys has some mild complaints, but has very good scores.

Okay, great, 20 years ago, This would have never been known. He would have waited more and more years and found out, oh my gosh, you know, I've got Alzheimer's and there's nothing to be done.

Well, now it's just like finding out pre, pre-diabetes with some insulin resistance. You shouldn't worry about it. There's so much that can be done. And the A word, you know, shouldn't scare people anymore.

You mean Alzheimer's, right? Exactly, yeah. Some people are getting this diagnosis with an elevated p-tau, some

changes in the brain. They're getting a diagnosis of Alzheimer's, which can be extremely terrifying, right?

Exactly. And it causes them to lose sleep. And I think that we're entering an era where we are detecting things so much earlier that my hope is that it becomes empowering.

All right, I've got these numbers. Let's turn them around. Let's do everything we can and consider it a luxury that we know this at this stage so we can be proactive.

Part of the problem has been Alzheimer's was defined as a pathology, of course, by Dr. Alzheimer way back in 1906. So unfortunately, we've also used it, not just as the pathology, we've used it as a clinical diagnosis.

And so you can have the pathology and have no problems with your cognition at all and never get any problems with your cognition. So that's what we want to say, look, this is just a pathology.

It's not going to hurt you if you get on now. I like the idea of just as we tell people you've only got pre-diabetes, I would prefer that we tell them, you don't have Alzheimer's, you have pre-Alzheimer's, and there's a lot we can do to make sure you never get it.

Unfortunately, as long as we adhere to the idea that this is a pathology, then by definition, they do have a form of Alzheimer's, but it's not what it was in the past.

It's an early pre-condition. And again, something that nobody should worry about any more than you worry about pre-diabetes. You've mentored many over the years, including myself.

I feel very fortunate to be in that camp. And I'm curious what you've learned through teaching others this work. And if anything has surprised you about how the next generation is carrying your legacy forward.

Yeah, that's a great point. You know, one of my very favorite sayings actually came from a rabbi who said, you are not expected to complete your life's work during your lifetime.

Neither are you excused from it. So what I really have loved is, as people like you and like Dr. Anne Hathaway and Dr. Kat Toops and Dr. Craig Taneo and all these people who are getting outstanding, just they're saving lives day in and day out.

As Stephen Gundry said to me a few weeks ago, I don't give up because even though I'm working seven days a week, he said, I'm seeing things on a daily basis that 25 years ago, I would have considered a miracle.

And I think that's what drives all of us. My favorite thing is reading the testimonials and seeing people talk about, oh my gosh, my life was over. I had one recently from one of the early patients who said, I've gone back to school.

I've started a new nonprofit. I've started my new life when before I thought I was going to die of dementia. And it's just so great to hear that. There's so much that can be done.

So I would say, What has been interesting to me is that how different it is, as I mentioned earlier, there are people who've run with this and really helped so many people.

There are others who have kind of grabbed onto it as a cash cow without really helping people. And of course, that's disappointing to see that. There is, understandably, there's a natural temptation to go out and say, okay, I'm just gonna grab one little piece and I'm gonna just turn the turnstile and keep generating cash.

And I think that's unfortunate because as you said, this is a disease that has killed so many people and so many people are at risk. The currently living Americans statistics say 45 million of us will die of Alzheimer's.

Now that we understand what to do about it, we should be able to reduce that number dramatically. And I recognize you've done a fabulous job with writing a book about it, helping people to be able to prevent this, setting

up Murama, which I think was just brilliant.

And I'm so excited about the new Murama. And really, this needs to be something that's available in every state throughout the country so that you have assisted living that's doing the right things, that's able to help people.

And even though if everything is done right, people shouldn't even get to assisted living. Of course, they always will. So there will be people coming to assisted living.

And as a neurologist, we would always see people would be going downhill. They would go into assisted living, as you know, and they would just go right downhill.

They're now getting drugs to control them, zombifying them. They're getting horrible diets. They're getting a lot of stress. They're getting poor sleep, and things just go downhill.

Now at your place, at Murama, they're actually going uphill. And at the very least, they're not going down here. They're staying the same. And so they can interact.

I mean, the families always want more interaction. When we come, Will mother or grandmother recognize us? Will she be able to love us and interact with us?

And that hasn't been available before. And you've made it available. So I think that is really fantastic. And I think the excitement is to see how each person takes their own skill sets and says, OK, this is my thing.

I'm going to go this direction. I'm going to go that direction. That's been really, really exciting. This is just the beginning of a new era. I look forward to the day when no one has to worry about ALS or any of these frontotemporal dementia.

We're not there yet, but I look forward to the time when nobody needs to worry about these things. So speaking about worrying and also thank you for your kind words.

It means more than you know to hear that from your encouragement. So if you could go speak to your 30-year-old self. You've had this 40-plus year career.

I'm wondering if there's any advice that you would give your 30-year-old self. Were there things that you used to worry about that you kind of wish you hadn't?

Or are there things that you prioritize differently now, looking back in retrospect? Yeah, it's a great point. And definitely, I frequently look back and say, well, you know, what did we do right?

What did we do wrong? And, you know, I have to say, though, we probably made a few mistakes in terms of pushing back against the establishment and maybe a little too early.

I went through the standard, you know, I served on the National Institute of Aging Council. I wrote grants for years. You know, I reviewed grants. We published over 230 papers from the lab.

So I was very much part of standard academics. Of course, I'm in my mid seventies now, but when in my mid fifties, I remember thinking, hmm, okay, I'm a full professor.

I have tenure. I don't have to worry about things. I should be able to do the things that seem to be most important. There is unfortunately, I think, too much of a group think when it comes to scientists because your results and your papers have to be reviewed by people who are your competitors.

So the easy way to get through that is to be more on the vanilla side. And we could see at some point that things were not supporting the classical view of these problems.

And so I guess I perhaps should have stayed with academics a little bit longer instead of just saying, guys, hey, this is not working. And we're going to do something different.

But actually, that was pushed by patient zero. I was still at the Buck Institute full time pursuing an academic career. And it was kind of foisted upon me by a friend of patient zeroes who said, would you see my friend coming out from Washington DC And I was like, come on, you know, I'm working on fruit flies.

I haven't seen a patient in 20 years. We're working on transgenic mice and cell culture models and all that. And do you really want me to talk to your friend?

But we had just been turned down for our first clinical trial because it was too complicated and was, you know, multi-dimensional. They wanted us to do one thing and isolate one thing.

And that's not the way the disease works. So I said, sure, I'll talk to your friend. And that turned out to be Judy, who's now walking across the United States.

She's about to hit a thousand miles, by the way. She's already made it to Texas, starting at the Pacific Ocean. She's amazing. And she just turned 81 a couple of days ago.

So I am still amazed by her. So I told her friend, okay, I'll talk to her. And we spent two and a half hours going through all the stuff that you and I have talked about.

And I thought, I'll never hear from this person again. I told her, look, she took all her notes. I said, go back to your doctor in Washington and anything else I can do for you, let me know.

And then she was so diligent about stuff on her own. Thank goodness. She was so diligent that three months later, she called me up at my home and said, you know, things are, I said, my memory's better than it's been in 30 years.

I'm doing so much better. And I was like, oh, great. That really supports what we were planning to do in the trial. So we went back to, okay, let's start to, you know, let's start to collect these cases.

And so I actually talked to Jeffrey Bland at the time, the group that he had at the beginning of PLMI. And he said, let's get some more. So David Jones would put people in his car in Oregon and drive them down to the Buck Institute.

This was way back in 2012, 2013. He and I would see them together and talk to them. And that's where we got these first 10. So he had several more that would come in.

And I saw right away they would talk to each other. And it really showed me, yes, having groups and having people talk to each other, really a good idea.

Teaching Others and Building the Movement

So again, this is something that you guys do so well with having your support groups. And people share information and share their support to say, hey, you can do this.

So if I really look back on things, I wouldn't have done things differently. We kind of did what we needed to do for the basic research. We translated it when we needed to, and we kind of left the confines of academia to start doing what this would not allow us to do.

Once we saw that, yes, we really need to do a trial, We really need to get this going. We really need to start teaching others how to do this. And that's, I guess, 2016, I think, when we first started that at the Buck Institute.

And that continues to this day. So I guess the answer is there's not a lot that would have changed. Yeah, I can imagine the incongruence of knowing you had this answer, this solution for people who are suffering.

If you couldn't share that for years, I just can't imagine living with that, right? As soon as I saw that this could work, that this could reduce suffering in the world, there was nothing else I could do with my life, right?

I mean, I don't feel trapped in it at all, but there's just not another option when you see how effective this can be. and how meaningful the intervention can be for families.

Exactly. And clearly, there's room to grow. Clearly, we know that we can get better and better. And that's why I'm so interested to see who's responding, what do we need to change?

Are there things we can advance? I think there's so much that can be done. But you're right. The tough part was, Imagine you spent your whole career as an airline pilot, and you had crash after crash from people, and you're like, but you were part of the airline pilot's group, and you finally realize we're flying the plane wrong.

And so now you're saying, no, we have to do it this way. All the other airline pilots are saying, you're an idiot. What are you doing? Like, wait a minute, but these planes aren't crashing.

I always go back to Semmelweis. who was taught a certain way, this is the way that you deliver babies. And then people were dying fairly frequently from purple fever.

And then he said, wait a minute, we gotta change the way we think about this. It's those medical students interacting with the cadavers that is killing these women.

His colleagues said, you're out of your mind. There's no way that a tiny, tiny amount of something from a cadaver can kill a whole human being. because they didn't understand germ theory in 1820. So I see this as being somewhat like that where you've really got to, you're unfortunately going against the people that have been your colleagues your whole life and hoping that at some point they would kind of wake up and see that you are getting better results.

And I think for now it's just keeping on with it. But I do think also times have changed. You know, if you read the results, if you read the original paper by Dana Farber in his group, there was nothing in 1948 for people with childhood leukemia, nothing.

And he had noticed, he was a pathologist, and he had noticed that people who took folate as part of, because they would get anemic and things like that, And he said, well, maybe since those people seem to have an acceleration of the disease, what if we gave an anti-folate?

It sounds counterintuitive, but he gave aminopterin. And out of the first 16 people, and he reported this in the New England Journal of Medicine, it was an uncontrolled trial, but there was nothing for the disease.

And 10 out of the 16 had temporary remissions. They were only temporary. But it was better than anything else at the time. And we're sitting with the same thing now.

It's not perfect, but it's better than anything else that has been published. So it suggests that we're all going in the right direction and we need to continue to optimize things to see if we can get it.

And the idea of compassionate use really becomes important for all of us. I mean, you haven't just gotten pushback from colleagues and friends. There was also a recent article in the New York Times.

Can you speak to your experience about that? Yeah, I have to say that was a depressing experience. It took me a couple days to kind of get back on the saddle and say, OK, this is part of life.

This is part of what happens. The reporter called me eight months before the article and said she wanted to do an article for the New York Times about Alzheimer's and about the approach we're taking.

And I knew at the time that she had written some negative things about, for example, supplements and things like

that. First, I asked her, are you funded by the drug companies?

And she said no. By anything from Pharma, she said no. It turned out it was not directly from there, but it was indirectly. Okay. I said, look, I'm willing to talk with you if you are willing to talk to multiple physicians and patients who have firsthand witness and read the papers we've published, and I'll send you data from our controlled study that's ongoing, all of which I did.

I know she talked to you, and she talked to a number of other physicians, and she talked to a number of patients. So there's absolutely no question she knows that there aren't better results, that in fact there are repeated improvements.

She knows all of that. None of that was included in the article, which simply said, this is an expensive and unproven approach. She really cast it as quackery.

I mean, she didn't use the word quackery, but that was the implication of the article. And unfortunately, it came out on the front page of the New York Times.

So of course, I ended up having to go hire a lawyer, and we've already sent a retraction requirement to the New York Times. They haven't replied so far.

We'll see. I mean, it's very hard. And of course, the damage is already done. There's no place you can put this that's going to say, no, we were wrong.

This is really something that works. It's unfortunate that's just the world we live in. As I wrote in the blog recently, Walter Cronkite is dead. The era of impartial journalism is over.

It's now about opinions and about business and about getting your point across. That's what journalism is today, unfortunately. So in the long run, things will change.

We're going through that period. They go from, they ignore you, to they fight you to, you know, they change. The third one, they just say, what do you mean we've always known this?

And so we're in the second one very clearly right now. We're getting a lot of fighting from groups that are, you know, they're not happy with the idea that what they're doing is wrong.

I don't blame them. They're saying, look, we're telling them their life's work is going in the wrong direction. And although we're not saying that out loud, that is the implication.

So I'm hoping that we spend less time on pushback and more time on, look, let's all get together. This is the sort of thing that should be ongoing at academic neurological centers where people are looking, okay, is this better?

Is this better? Can we do this? Because we need to bring more academic research toward these network approaches saying that they're less scientific because there's more than one variable.

That's, that's, I think inappropriate. Yes, it's harder to do good science when you have more than one variable. Of course it is. But if you're getting best outcomes, you simply cannot ignore that.

A complex system deserves a complex solution, a complex intervention that includes those variables. That's the real world. So I'd love to hear your vision.

If there were an institution like this, can you describe what that utopia would look like? Yeah, that's a great point. And you know, that's what I had tried to create at the Buck Institute when I set that up way back in 1998. As I said to the other scientists that I hired there, I want to create an institute that's of the scientists, for the scientists, and by the scientists.

That was the idea. Of course, what it turns out is, you know, if you're a scientist, you've got to get your grants. And so you have to please the people that are reviewing the grants.

So it doesn't allow you to make those paradigm shifts that are sometimes needed. I see the future as, number one, I hope that this will become part of academic medicine, that there will be just as, you know, over the years, we've all learned medicine from people who are teaching it and that the people who are teaching it will, you know, will embrace these complex chronic illnesses.

You know, one of the leaders I approached when the first book came out, 2017, I gave a copy to one of my old friends. who was a world leader, one of the most outstanding medical schools, who is, you know, his big thing was education.

And I said, you know, this would be something that would be so helpful for the medical students to understand. And he said, you know, we would love to teach, quote, he called this kind of medicine to our medical students, but we can't do it until all doctors believe in it.

Well, the doctors won't believe it until you teach it. So you're kind of stuck in this outdated, I know, you're stuck in this outdated mode. And, you know, I think that things will slowly change.

We're already seeing that people are starting to look at, now, what if you do, there's a whole project now on ketones. Okay, so they're kind of knocking off one little thing at a time saying, what if we use ketones?

What if we did plasmapheresis? What if we did this? At some point, I think there will be an embracing of, let's get the best outcomes we can. The other thing is that I hope that there will be much more in the way of early detection and prevention of symptoms.

It's not exactly prevention. pre-symptomatic treatment. You've already got the underlying pathophysiology, but you haven't suffered from it yet so that you can already begin to get on appropriate early treatment.

And as you mentioned, you just see such good outcomes in these people. And I think that that will be standard of care. Right now, Nobody sees it as standard of care.

I hear this all the time. We never heard of what you're doing. My doctor says he doesn't believe in it. My doctor says, on and on and on, this sort of thing.

So I think that that's going to slowly break down over the years. And of course, the pharmaceutical approaches should be fused with the personalized precision medicine protocols.

We have a really exciting drug candidate right now. It's just been published. that negates the effect of APOE 3. Very exciting. And so anyone with APOE 4 could be on that as prevention and as part of treatment, but it's not yet available because we've got to get it into a clinical trial.

Future Vision, Prevention, and Resources

Once it's in a clinical trial, again, then compassionate use should be available to people. And I think that's a way to go. So I think that there are going to be exciting new candidates that will combine as part of this overall personalized precision medicine protocols.

And I think that we're really going to see a breaking down of this idea that the neurodegeneration, you just can't do anything about it. If every household could adopt just one thing from this approach or one principle from your decades of research and what you've learned, is there one kind of shift that you think has an outsize effect?

I think that the first thing I would say was just to recognize this is not hopeless. I think once you get over that hump, that is so important. And then I would say the one change would be to be aware And this is what naturopathic medicine is really all about, of course.

To be aware of what we think of as the basic seven, these are so important. And boy, I just took it for granted. When I was in medical school, there was one course offered only on nutrition.

And I took it, and I learned one thing, that vitamin C is thermolabile. That's all I learned. Oh my gosh, there's so much you could spend your whole career and beyond that, multiple careers, looking at just that.

There's so much that is important about nutrition, about exercise, about sleep, about stress levels. And to be able to monitor these, I do think wearables are changing the world.

You know, we're able to see when things come in, all the, you know, the CGMs and the Apple watches and the Oura rings and all these things, we're able to do so much more than we were just a few years ago.

So I guess the one thing would be responsibility for your health. Take some responsibility. We've had a passive system that says, just shut your eyes, put out your hand, and we'll hand you the drug.

And that is just the wrong way to go about complex chronic illnesses and aging. Now, I hope that you win the Nobel Prize before the end of your career.

Thank you. And I want to know what you hope for in 50 years after you're gone, when your kids and grandkids are maybe still here. Is there a way that you hope your contributions are remembered?

Yeah, thank you. I appreciate that. My hope is just that we will see a dramatic reduction in the global burden of neurodegenerative disease. And I think that this is a, you know, that takes a village sort of project.

You know, it's going to take people who are looking at big projects. It's going to take the, you know, some of the tech people to be involved. It's going to take algorithms.

It's going to take AI. It's going to take better medicine training in medical school. It's going to take In fact, this is something I've been hoping the movement toward better health would embrace this sort of thing.

We'll see. You know, unfortunately, another one of the principles that I've seen over the years is that nobody ever makes a decision that is not in their own best interest.

Sad as that sounds, pessimistic as that sounds, you see it again and again and again. So I keep on saying to people, well, wait a minute, you can help all these people.

It's like, yeah, but we don't care. So I hope that we'll see a time when we really do get together. Look what happened in the 20th century with some of the very successful vaccinations.

Look what happened with the development of treatment for HIV. And actually, David Ho is one of my classmates at Caltech. who developed triple therapy.

You know, look what happened with improving cleanliness and drinkable water, all these sorts of things. We really had some tremendous groups together that really, you know, big projects that changed world health.

We haven't gotten there yet to the realization that world health can be improved dramatically by having these sorts of preventive studies set up and preventive projects set up.

We could do this by taking everyone and looking early on. We could really do this. And actually, a group from a large company in China approached me about a year and a half ago and said, we'd like to design something ultimately for the entire country, but starting with this huge area that has, you know, over a hundred million people, let's set up.

And I thought, so I was working on, let's, we can do this and this and this and this and this. And then after all these meetings and discussions, they said, we've decided not to do it.

So, which is unfortunate. I do think This is the way things are headed. And my hope is that if I can look on from elsewhere 50 years from now, these will not be issues anymore.

You are a grandparent these days. I'm curious, I guess it's a leading question, but what brings you the most joy at this stage in your life? Well, of course, we have a great time with seeing the grandchildren.

One of them is now almost one and a half, and the other one is just a few months old. And it's so interesting because they're both amazing kids, both little guys, and yet they're completely different.

One of them is, they're kind of both like their mothers. One of them is all about in your face, a bullion's running here, running there, doing this, doing that.

And the other one is all about like Yoda. It's like all about, yes, I can, and very interactive, very analytical. He kind of, he's seeing the whole universe.

It's really interesting to see. But as I said earlier, you know, in addition to that, what's great is to see that the work that we did, all those test tube experiments for 30 years, all the looking at this piece of DNA and that piece of DNA and this transgenic mouse and this fruit fly, you know, we created Alzheimer's and Mautzheimer's and all these sorts of things.

We started out to create the first cell culture model. of neurodegeneration, which we did. And we published that years and years ago. So you could put all these different genes in there and you could watch the cells degenerate.

So we based that on what happened with cancer. So to see that become human people telling me they're actually, their lives are better That just makes my day.

So I must say I'm really excited about that. And of course, it gives me more enthusiasm to hang out with the grandkids and have fun with them. So I'd say that's the thing.

Just seeing people get better when there was no hope before. What could be better than that? I mean, that's more than any award or prize you could ever get.

I agree. Because of you, I have the privilege of that experience of seeing people who share with me that they have their mom back, they have their dad back, they have their spouse back, that they're there to engage, they're there, they're present at Christmas, that they get to make these memories, they get to have these trips.

as you mentioned, that people get to go back to work, start a new nonprofit. They get to give their gifts to the world for a little longer. There is no bigger gift that I've been given outside of life itself.

And I cannot thank you enough for the purpose and the meaning and the value I get out of each day because of the privilege of getting to do this work.

Thanks so much. I really appreciate it. And again, as I've said before, there are only a few people like you that really know how to do this, get the best outcomes.

You know, we've trained over 2000, but many of them are not getting the outcomes that you're getting, obviously. You're a real expert in this. So to be able to continue to make it better and better and continue to see people, you know, it's making, as I said earlier, it's really the difference between life and death.

When someone is suffering cognitive decline, You know, things are not going to go well unless you intervene in a successful way. And so, yeah, as you've seen, there's just nothing better than seeing, oh, yeah, these persons actually got their life back.

They're now able to do things again. One of the quotes that David Haas mentioned before, which I thought was a very good point, was that the well person has many goals, the sick person only one.

And so to get rid of that problem, to get on the right track, to do better, and then to say, okay, what do I want to do with my life? My new life is just, what's better than that?

It's incredible. Thank you so much, Dr. Buddison. I want everyone to know where they can find out more about you. There are lots of resources. You have four books, at least.

Yeah. And what is the most valuable resource they could get? Is there one of those books, or where would you recommend someone start learning more about how to apply this approach?

If you're interested in how does this work scientifically and then the initial patients, then The End of Alzheimer's is the best one. That was the first book and that's now in 33 languages.

So you, no matter what language you'd like it in, it's available. Yes, that's it. Thank you. If you're interested in more concrete of where do I buy stuff, what do I do, then that would be the end of Alzheimer's program.

That's how we have. Thank you. And of course, reversing Alzheimer's, I heartily recommend that to everyone. If on the other hand, If you're not thinking so much about Alzheimer's, but you're just saying, look, I just want my brain to last as long as I do, then the ageless brain, that's the reason I wrote that.

The whole idea was, let's make it so that everybody has a brain span that is equal to their lifespan. Because so many people will live till 90, but their brains are only working till 70, that sort of thing.

And that's very sad. No one wants to live like that. Exactly. So those are part of the best places. And then also, of course, Facebook, Dr. Dale Bredesen, Instagram, X, Blue Sky, all those sorts of things.

You can get information as well. Fantastic. Dr. Bredesen, thank you. As always, it is a privilege to spend time with you, to get to pick your brain, and to continue to learn from you each day, each week.

I couldn't thank you enough for being here. Thank you for all the great work you're doing and many, many years to come. Many, many people are going to have you to thank.

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