Opening and summit introduction

Dr. Bredesen, you need very little introduction. I think many people here have read your books, including your your initial stand out New York Times bestseller at The End of Alzheimer's.

And they're coming here to this incredible summit that I have the privilege of hosting with you to learn more, to get the latest on the science, to get the updates, and to learn how they can really practically apply all of those insights that you've collected in your in your three books and in the research that you've done and across your career.

So I'm hoping today that we can dig into some of those highlights and talk about why this is. You see this as the golden age in terms of Alzheimer's awareness and what we can do about it.

And also the latest in terms of the research that you're excited about and what's on the horizon for you. So, so thank you. Thank you so much. Heather and I look forward to reading a lot of this in your upcoming book, Reversing Alzheimer's.

Very exciting. So thank you for spearheading this. Now for this is your third or fourth year in a row. Fourth year. Fantastic. Thank you. It's just such a great job.

I'm thrilled to be part of this. And, you know, let me just start by saying there has been pushback. People, you know, if you had this ten years ago and you said, we're going to talk about we're going to you know, we're going to have a symposium on Reversing Alzheimer's or a Summit on Reversing Alzheimer's.

People say, what are you talking about? And we still get pushback, as you know yourself. And I just have to I have a quote for you, which is mediocrity excels at a single endeavor protecting its own interests.

And we see this from so many practitioners, from from so many neurologists from the pharma industry is, you know, we want to protect our interests. We're not going to look at the data.

Even though you're generating data, you're publishing data. We're not going to look at this. But I think you hit on a really important point. We are leaving the dark ages of Alzheimer's where, you know, since 1906, when it was first described and of course, Ayurvedic medicine describes something that is very much like Alzheimer's.

So this has been around for quite a while. And to be fair, it's on. It's on the increase. It's been worse because of me, of modern industrial issues. But after many years where we just couldn't do anything.

There are there's a whole series of changes that are really bringing this to the fore. And we should be able to reduce the global burden of dementia dramatically.

And here's what I mean by that. The first thing you and I and everyone knows that chronic illness, you want to get in as early as you can and that it's best if you prevent it.

So now for the first time, we have blood tests. Wonderful blood tests. P-tau217, GFAP, Neurofilament light. My argument.

Why Alzheimer's care is entering a new era

I'm going to get the I'm going to get the these tests in just a couple of weeks here. They're just being rolled out to make it really easy. And we've got a very, very good price from Neurocode.

Some of these others are charging, you know, massively over $1,000 for something which is ridiculous. So we

have a much, much better price. And so I'm very excited about working with neuro code and Dr. Hans Brickman, who's fantastic and making it so that we all know, you know, at 41 should find out there.

There P-tau217. At 50 and then 55,60. And it's something if you actually have the you actually have symptoms, you want to follow it every year. The great news is you can see things coming and you can now use it to follow.

You can see as you're doing better that it's getting better. So that's a game changer. You don't need to do serial PET scans and you can actually you've got something where you can follow it quantitatively, which is exciting and relatively inexpensive and can save hundreds of thousands of dollars on the other end for nursing home.

So everybody now, you know, we say now that Alzheimer's is literally becoming optional. If you just get on active prevention. So that's the first thing.

The second thing, we're now seeing long term improvements. So we have a paper that's just been accepted with some very minor editorial changes that will be coming out in a few months where we document people for over a decade sustained improvements.

And in fact, the very first patient I saw, Patient Zero, is just turning 80 in April and she is 79 now and doing very well. She's been on for over 11 years and doing very, very well.

So very excited about that. And then this paper, one of the things that we found that was really interesting was that some people will go along. There's no doubt you've seen this as well.

They may go for two, three, five, six, seven years and then have a secondary decline. But when you then reevaluate, you find, oh, something either new happened or something that was missed initially.

And as an example, Sally, who's also in the film, you know, Memories for Life Reversing Alzheimer's, Sally went along for six years when she was film for that.

She was in the year four, I believe. She went along for six years and did great. Then she had a little bit of secondary decline, wasn't horrible, but there was a little bit.

And so she was evaluated again and she ended up having three things. She had a new sinus infection that was Cryptococcus Lorenzi, an uncommon one. She had Mycotoxins exposure with a new leak in their home.

And she then interestingly, she had severe sleep apnea that hadn't been realized initially how bad it really was. And so when she addressed those three things, right back up again, doing great once again.

And so she's now had seven years of doing absolutely great. So the second point then is, you know, you can get long term improvements and that is so important because you can get a short term improvement sometimes with things like, okay, some some people get a little bump up with Aricept, but they go right back to declining because the underlying process is still going on.

And as has been pointed out, you know, once you go on Aricept, if you look five years down the road, they're doing worse than people who were never treated.

So it's a horrible situation and you can address these things and you should be able to keep them in good shape for the rest of their lives. That's the goal.

We'll see how long that works. But so far, it's very, very promising. So, you know, we're we're we're getting to the point where we are seeing that this is becoming an optional disease.

We're also understanding it better, as you well know. And then, of course, I would include in this golden era, Marama, what you have put together. So people who are now having problems can actually have a place to go and either stay doing very, very well for years to come, or in some cases get better and become independent and the

whole idea of becoming independent once again, again, something that people didn't even think about years ago, and now you're obviously the first one to be seeing it.

So there I think this is a very, very exciting development. It's such an exciting development. And I would agree with you, the past four years compared to when we started this summit four years later, the biggest change I've seen is the acceptance in a new narrative that when you published your book in 2017, I mean, I was one of the people very skeptical.

I showed up to hear a talk you gave. And I thought, like, this makes biochemical sense. This makes sense in my paradigm, the way I was trained is a natural path to start these interventions, to focus on what supports neuronal health at a very causal level.

And yet I had never seen it in practice and I was very skeptical because I had been told so many times it was impossible then having the privilege of watching miracles happen before my own eyes with patients getting better and seeing this over and over again, my worldview started to change.

And what I've seen is that the the worldview is now shifting and, you know, more slowly than you or I would like. But when people are coming around, they're looking for answers, they're looking for hope.

And then they are seeing the results. I want to go back to Patient Zero, because she really is a pioneer in this space. She took this on. You said, I think 11 years ago she had been one of your initial papers herself.

She dug through PubMed and found it and I had the privilege of meeting her at the screening for Memories for Life, and I think her story is particularly compelling because she's taken a big career shift.

Would you let everyone know kind of what she's done? Yeah. You know, she was working for the government, being sent overseas, preparing reports. I won't say the three letters that are associated with her job, but it was a government position.

And as you know, she was she was very seriously considering suicide.

Patient Zero and long-term recovery stories

And after she got much, much better and she talked about this and she said she got up to one day and it's like, oh, my gosh, my memories are coming up.

One of the most exciting things for me is when I hear from people who actually kind of recognize a time Debra was driving along and you not only had lost the ability to play the piano, which she then got back, but she also, as she was driving along, was getting back her Chinese and she, like, pulled over to the side of the road because it was like she could just see all these words flow flowing in.

It was amazing. So but to your point, Patient Zero has become a Brain Health coach. Yeah, she's she's she's got a you know, she's got a wonderful job.

And she really can tell people, yes, you can do it because I did. And so it's great to have someone who has firsthand experience with getting better with the protocol.

I have to admit, part of the reason I became so excited about Alzheimer's is like you would never want a doctor who's already had Alzheimer's to be your doctor, right?

So it's like, okay, I won't be that person. You wouldn't be looking for that in your doctor, that experience. But how phenomenal that now this is something that we can sort of look for is personal experience reversing Alzheimer's.

I don't think that anyone sort of expected that that might be one of the accolades you would look for in a coach or a doctor in the future. No question.

And I think, you know, we are all seeing what it takes so you can see the people who do best tend to be diligent detail, though. They're the ones that are focused, whether they have a health coach that helps them.

And again, that's why she's so helpful. She can tell you these are the things you've got to do, the ones that can actually get themselves to be metabolically flexible, get their ketone levels up, whether exogenous or endogenous, they get their inflammation down, address their their various pathogens and toxins and, you know, kind of keep optimizing.

And, you know, one of the things that I've noticed has been very interesting this is much more like a surgical procedure than a prescription pad, internal medicine, because what I see is there are certain physicians who are getting most of their patients to get better, and there are others who are getting very few, if any, of their patients to get better.

So it really does having experience kind of focusing on things and getting the right things, getting the right team together, the right nutrition part of it, the right health coaches.

It really does make a difference. It's like a surgical team and it really does make a difference. And we're learning more and more about when things don't go as well as you'd hoped.

What's going on? What was missed is it because you are very far along? Is it because our you are exceedingly toxic? And you know, I mentioned before that I, I got a nasty email a couple of years ago from a husband and he said, I'm the husband of the patient with MOCA score of zero.

How dare you tell people that you should get in the you should only do this if you get it early. So my wife had a moca score zero. She's done much better on this.

Now she doesn't have a MOCA score that's very high. It's still very low, he said. But she's interactive. She's part of our family again. She's talking to me.

She's engaging. It's like I have my, my, my wife back, even though her MOCA score is not back. And so I don't ever want to tell people don't do it. But there's no question the earlier you start, the easier it is.

Oh, Dr. Bredeson, it's early February right now, and after seeing some patients right after the holiday, I saw a family. And that was exactly what they said.

My my mom was back. She was there for Christmas. She got to participate with us. She picked out gifts for her grandkids. And having that that extra holiday, that extra anniversary, that extra celebration with a loved one is just absolutely priceless.

It gives me chills just thinking about the impact that you've made on so many families. I also want to go back to the blood test because, you know, one of the themes that throughline of you, your training for doctors and what's in your books is that we need to focus on the causal level factors, those holes in the roof as you describe them and the blood tests are looking at downstream effects.

Is it correct? So what do you need them in our arsenal of testing so that we can track change over time, how do you kind of see that in terms of cognitive testing, looking at causal level factors and then measuring these really exciting new parameters through blood testing, how does that all fit together in your mind?

You know, that's such a good point because it is really important for people to understand this is a complimentary test in terms of being a different piece of information.

It does not take the place of looking at the causal factors. So in other words, the ones that we've done in the past and we will continue to do tell you why you have it or why you are at risk.

This one tells you whether you have it. So we've talked a lot about synaptic blast signaling, making new synapses

and synaptic elastic signaling pulling back.

And so what this is doing when you pull back, of course, what happens is you've put out these new rights, you've got these processes and they are stabilized.

The microtubules that are the structure behind these things is stabilized by bolts that are called Tao. Those are the bolts that stabilize the structure.

Now when you are getting signaling because you've got inflammation, because you're you've basically switched essentially from connection to protection.

And that's really what we're seeing, that your brain has gone from a connection mode, which is where your app is believed to make the two good guys to a protection mode where you're now trying to fight with these various pathogens that are entering your brain.

When you do that, you put your resources into protection and you now pull back. You say, no, you're not going to get that. I'm pulling back.

How blood biomarkers fit into diagnosis and tracking

It's very much like a scorched earth pull back in war. You're pulling back. And so what you do to do that rapidly, you phosphorylated your Tao very quickly and when you do that it pops it off.

So you literally change the structure of these bolts and they fall off. And so what do you do? You collapse the structure. So therefore, when you're measuring phosphorus, how you're measuring this ongoing thing, synaptic plastic signaling in your brain, so great when we treat you, we want to see now that you're this is going to start going down and down because you're now going to be more on the synaptic blasting side.

You're going to be making synapses instead of having to put your resources. And so you're absolutely right. We want to then know, why do you have insulin resistance?

Do you have various infections? Do you have a change in your oral microbiome or your sinus microbiome? Do you have leaky gut all the things that we've talked about for years, these are the things that drive that.

But what hasn't been available before is to tell you where you stand. So we've always kind of been in the dark. We say, well, the best we can do is check your cognition.

But the cognition, you know, that's a that's a can be relatively subjective at times. So of course, symptoms are important. Cognitive testing is important also electrophysiology, but many places are not doing that.

And it's a little bit of a pain to do that. But the thing that's really nice is you now have a blood test. Now, it doesn't change overnight. You want to give it about six months or so to give it time to improve.

But if you're now doing the right things, the great thing is it's going to say, Oh, Heather, you're going in the right direction with this person, but you're not going in the right direction with that person.

So now you can see who's going in the right direction, who's face photo is coming down. You're now going more into the synaptic blasting. So that's why I think it's such a promising test.

The other thing is it will tell people early on you are in the earliest stages is just like going from looking at fasting glucose now to looking at home air where you now you're looking way upstream at changes in your you know, in your insulin resistance.

So this is a great situation where we can get people. My hope is that anyone who has a family history of Alzheimer's will come in when they turn 40. Check and see.

Is my photo going up? Okay. Even if it is, don't worry. That's the that's the news. Don't worry. There's lots we can do to get you back on the right side and get it back down.

So this is really going to change the equation. Oh, exciting. So do you see this? I know you have an entire interview with Dr. Raji Raji, who is an expert in the imaging.

Do you see these test replacing, imaging enhancing what we understand about imaging being an alternative to them? What does that look like? It's a great point and I see it as complementing the imaging.

So this will give you a quantitation. Are you on the right side of the wrong side? It won't tell you how long you've been there. It won't tell you how you won't tell you really how far along and it won't tell you where in your brain.

You know, one of the things that's been so fascinating, certain people get more of a temporal presentation with memory loss. And then there are the people that get more than non monastic presentations, more of a parietal view.

And you know, my current speculation on this is that when you have APOE e4, you are a hyper responder. So the disease, although you start with infection, etc., the disease part is mainly this hyper response.

That's what happens with AP where you're driving it. That's more of a temporal disease. Whereas when you're APOE4 negative, as many people are with the non amnesic, not all of course, but many that is saying you don't have so much the hyper response.

So this is more related to the underlying insult is more of a parietal insult and we'll see if that pans out over time. But the point is that that the imaging will tell you where, it'll tell you how far along, it'll tell you how severe.

So there's no question it's helpful. But for example, some people will say, yeah, but I don't want that imaging either because my insurance won't pay for it.

It's expensive and so forth and so on. We know how insurance handlers can be sometimes, so this gives you a nice way that's much less expensive than imaging.

That gives you a quantitation about where you stand. And by the way, if you don't do anything, it will continue up over time as you get farther and farther along in Alzheimer's disease.

So bringing it down is huge. So that on the testing front, there's some really exciting new things that have come out in the last year. Now, what about on the treatment front?

I think it's always important to talk about these conventional medications as the the antibody therapies, because they're getting a lot of press coverage.

And in fact, I sent you an article the other day about, as you can't imagine, Aduhelm being dropped by Biogen because of the well, because it doesn't work very well, quite frankly.

But I'm curious, can you help our listeners and some of the attendees just understand kind of where that fits in the context of your work? Yeah, that's such a good point.

So I think it's important to say upfront that none of these antibodies has ever made people better. It's never made you stay the same. The best ones ever have slowed a little bit.

The decline with major caveats. And I should mention an article just came out and then I believe this is Annals of Family Medicine where they review two all of the antibody studies, including Volcano MAB done in everything and they said there is no clinically significant benefit to any of these, including the ones that have been touted.

Now, you mentioned Aduhelm has been pulled. I wish I could say that was because it wasn't very good. The

reason they pulled it was because they have another one looking about where they're going to make a lot more money.

It clearly did a little bit better. So in the tests and at the best aducanumab slowed the decline by 22%, looking at by 27%. And so they're like, okay, this is a little bit better.

Now, there's some caveats here. Number one, in women, which of course make up two thirds of Alzheimer's cases, 11% slowing. So minimal enable for for people and they actually make up 10% of the Alzheimer's cases because they have such high risk, even though it's only 2% of the population, they have a very high risk.

It actually accelerated the decline in that group. So you don't want to use this on APOE E4 for patients for sure. And you probably want to think twice in women at the same time.

It's very expensive even with Medicare coverage, you're still going to spend something like $8,000 a year without the coverage. You're going to spend more like 40 or $50,000 a year.

It causes brain bleeding in some people. It causes brain edema in some people headaches. I mean, and we've seen, of course, we've all seen the occasional case where you actually get the antibodies injected and you get worse with each injection.

It's interesting. They've kind of buried that and really not said much about it. But we have experience and this is a good example. Sally was the one.

It was one of the many people where she did get antibodies. She was in a trial initially. Now, to be fair, that was a different antibody. That was Solanezumab, but another anti-armor Loyd antibody.

And she got clearly worse with each one. And what happens is they typically get worse within a couple of days after the injection. So it's very temporally related.

Then they slowly kind of fight their way back to almost where they were. Then they get the next injection and it goes and it just and she went through eight injections and finally said, this is making me worse, not better.

One of the very first patients I saw had gone with during the injections. She had a year and a half of injections. He'd gone from a MOCA of 22 to 6.

Limits of antibody drugs and access barriers

So when you're getting worse with these, you know, listen to yourself and, you know, and maybe consider looking at other possibilities. So I think that's the point about these.

The problem is there is a huge amount of money that's gone into them. So there is a lot of PR, there's a lot of there's a lot of corporate push to sell these drugs, despite the fact that we know we can do much better.

I do think in the long run, combining certain targeted pharmaceuticals with personalized protocols is going to be the optimal way to go. Another couple logistics that patients of mine have run into is that they kind of think of that as a last ditch effort because they're aware of the Arias or the these side effects that can be potential brain bleeding or swelling.

And so they wait and then they're not eligible because it's really only design or only approved for mild cognitive impairment or those earlier stages, not severe Alzheimer's.

So and then the other logistical issue that comes up is that you need to be within a certain radius of a pretty big hospital system because then the need to track for the the side effects to arias the brain swelling and brain bleeding.

So you need to get regular MRI's, get regular checkups, and many places just don't have that available. So patients who aren't within 100 miles or 50 miles of a pretty big health system just won't be able to get these medications.

So I think instead of using them, I've had some patients who think, oh, well, we'll use that later, we'll go to that later. It's going to be our miracle drug.

And I think that there's a big misconception out there about that. And it's actually relatively limited in terms of who can even get access because of the costs, because of the logistics, and because of when in the disease process it is approved for.

This is such a good point, because, you know, there's been this misunderstanding. We've got these things that when the when the drugs were first used for Alzheimer's, they would use late stage patients and they were just weren't seeing anything.

So they kept lowering the bar, lowering the bar to make money. And now they're like, okay, well, we start MCI. And of course, as you probably know, there are now trials in asymptomatic people, which is crazy.

The idea of of, you know, causing micro hemorrhage in people who are asymptomatic just drives me crazy. So they kept lowering the bar. So here's the thing.

Now that we know now case for MCI, I made a list of things that worked that showed better in their own trials than Lacombe. Here's the list. Ketones alone brain training alone photo bio modulation alone.

Extra virgin olive oil alone, of course, recoded, personalized protocols. All of these things performed better than these antibodies. So what they're doing is just saying, well, we're going to kind of ignore everything else and we'll just sell you this extremely expensive drug, but will do it early enough on that we can get a little bit of bump, but again, it's not a bump up.

It's just a slowing of the decline in the best case scenario. So I think that that's you know, that's really a concern. There's so much better that we can do.

And of course, we've all published papers showing that there is there's more that can be done. And, you know, to the critics point, we need more research, we need more data, we need controlled trials.

And you are in the process of doing one. Would you update everyone on where we are in terms of the research? Yeah, it's a great point. And so this is ongoing.

We're at six sites, so very excited about that. And of course, in 2022 we published a successful trial. You published a successful trial last year as well.

We're seeing, I think, very, very similar outcomes in these patients. And and we're understanding better, you know, how far down on the mokka, for example, that you can go and still get good results.

And then what do you have to add to do better in the ones with the lower market? So the one now is going on in six sites. So for anyone who lives close to Hollywood, Florida, right down there in between Miami and Fort Lauderdale or Nashville, Tennessee, or Cleveland, Ohio, or East Bay here in the Bay Area or San Rafael, which is where Dr.

Anne Hathaway is, or over by Sacramento, which is where Dr. Christine Burk is. We just I'm I'm thrilled Dr. Kattouf is involved as well. Dr. Nate Bergman, Dr. David Horsey and Dr.

Craig Tonio, so really thrilled to be working with six fantastic physicians who are doing this randomized controlled trial. It's what an all star team and it's so exciting to have another data set.

So just to recap for everyone who hasn't heard about the two papers that you referred to, so the 2022 trial, that was the paper that was published in the Journal of Alzheimer's Disease, Katz, who is the first author on that.

And we'll have links, I'm sure, in the show notes to those to both of these papers. So there were 25 participants that went through a nine month intervention.

And this was all in the midst of COVID mind, you know, 84% of those participants improved their MOCA scores or improved their cognitive scores. And correct me where I am wrong on the details there.

That's correct. So, yeah, 84% improve their cognitive scores. And this was the main thing we use with CNS Vital Signs because it is more sensitive than MOCA.

But we also did you did MOCA and 76% of them improved their MOCA. Interestingly, they all improve their brain training scores. So there's no question that they were going in the right direction.

And this compared to what we were just discussing on the the antibody therapies, where what you get is a slowing of disease. So these are in different categories.

They don't even compare. So a slowing of a tortuous process is what the antibody therapies offer. Whereas the discredited approach this to this protocol, the Recode process offers the potential to improve cognitive function and not for some people but for most people.

So in the clinical trial that I had the privilege of publishing in 2023, we had 23 participants who went through a six month intervention, very similar to the other paper that was published, your trial.

And 74% of them got better and we actually recruited patients who had lower cognitive scores to begin with. So it kind of makes sense. We had a quicker intervention.

We were expecting miracles in six months instead of nine months, and we took patients with MOCA scores down to 12. And we also studied we had not just MOCA scores, but also Cambridge Brain Sciences, which is a battery of cognitive testing.

And we showed that in both both of those scenarios, whether we were testing MOCA or Cambridge Brain Sciences, where we had more detail, we got the same results of that improvement in cognition.

So this is possible, this is replicable.

Clinical trial updates and outcomes

We can do this in multiple settings over multiple trials. This has been shown. And then I'm so excited that you guys are adding that randomized control data to the mix.

I hope that that will be helpful. So let me flip the script here and ask you, because now you've got all this wonderful experience with your mirrored cases.

So in Rama residents and I, my hope is that, you know, we will see this, you know, everywhere the places where, you know, as a neurologist, we always could see that when someone went to any of these facilities, they were about to do that, unfortunately.

And so to see people actually doing better is just amazing. It's wonderful. Let me ask, when you are looking at people, what are the things that you have seen?

Do you like it? What do you like? Photodiode modulation. Do you like exogenous ketones? What are the things that seem to help your residents the most?

And obviously you've got a tremendous situation with nutrition and and chef and all this sort of wonderful stuff. I've seen some great, great pictures.

And of course, I was there the day you open forum. I'm very, very excited to be there. So tell me about what you've seen that has really helped people.

Yeah, you know, it's so interesting. It's because we stack all of it together and we're doing it in this very controlled environment where people are getting exposure to the new food and the new social atmosphere and the photo bio modulation and the UI and the, you know, and this on it all at once.

It's really hard for me to tell at Miramar what particular pieces making the biggest difference. I will say that there are people who have moved from a home atmosphere where they've been trying to basically do as much as they can do at Miramar, and then they show up at Miramar and there's this benefit, and I suspect it's the community.

Yeah. I think it's that social network of cheering each other on, of connecting with other people or feeling like you have, you know, the caregivers and that support behind you that you're expected to improve, that there's no naysayers around to drag you down, that everybody is really on this collaborate live team supporting you to get better and you feel that.

But I will say from my clinical experience, it's a little bit more controlled, right? I've seen people add different pieces. And one of the biggest impacts is the ketogenic diet, hands down, getting into ketosis, whether it's through exhaustion as ketones or getting those ketone levels up through through changing your diet, that I think has the biggest, most dramatic impact.

The fastest. Yeah. The other thing that's made a really big difference that I think is sort of underutilized is this contrast oxygen therapy. And I know you've talked about cuts to and and and what there's different ways to kind of apply the same idea.

But essentially what we're doing is we're increasing oxygen delivery. And so people talk about hyperbaric sets also on this kind of spectrum of of oxygen delivery and doing that.

Well, you are actively exercising, right. While you're increasing the load, if you will. If you're increasing utilization and increasing activity, I see an even bigger benefit to increasing that oxygen.

And then when you add contrast of restricting oxygen and then adding oxygen, concentrated oxygen, you get this hermetic effect where you're stressing the system a little bit and you get more resilience in it.

And that I've seen really profoundly impact people when they've been doing everything right. They're they're doing the diet, they're doing the exercise, they're doing the brain games, they're taking all the supplements, they're taking the hormone replacement, and then they change this piece and it's like, okay, that level things up.

That is really interesting as I've worried about this, the hypoxia part of this, because you figure they've already experienced that part. You know, we think about the big three energetics from the from the from the scientific equation side.

You know, this is about energetics. This is about inflammation and this is about toxicity. Those are the big three. And so there are lots of ways to address each one of those.

And so understanding what's what's the problem here for each one is so helpful to get best outcome. So I've worried about when you're now taking someone who's already energetically challenged and now you're taking away their oxygen to be hermetic.

If it's an Olympic athlete who wants to, you know, bike in the Alps, that's one thing. But if you're trying to do it for someone who's already already on the edge, I've worried about that.

So it's good to hear that you're getting good results with that. Yeah. And I think with the doctor supervision. Right. Make sure that this is something that your provider thinks is appropriate for you.

And I think that there are, you know, like hot and cold therapies. Of course, if you if you have a neuropathy, you know, it's not appropriate. But this kind of getting outside of our comfort zone.

Yeah. And challenging the system a little bit. I have seen that make really big impacts for people who are willing to go there. It doesn't feel good. Right.

It I've been on the bike and I've done it and it's a little anxiety provoking and and it's uncomfortable. But watching the people change is has is what has right.

It's this personal experience of seeing people get better that makes me a proponent. It's really interesting. You know, as you'll recall in the in the film, the So Boo who is from Japan said that he would flick his father's nose because that seemed to bring him back.

And what happens is, is just like taking Adderall, anything that drives up the adrenaline briefly is going to get a little bit of an improvement. And of course, as he said, ultimately it did work.

But at the beginning, that's the way he could bring him back. And the thing is that if you look at what actually is lost initially, even in many cases prior to the end to renal cortex, it is the locus soleus in the brainstem which provides AIDS nor epinephrine to the cortex.

So these people do become passive. And this is you talk to them and they look at their spouses for all the answers and things like the so-called head turning sign.

What helps patients at Miramar

And so anything that drives that up and certainly cold is a great example. And you're improving your mitochondria, you're making new mitochondria and things like that.

Certainly could could give you a boost. So that is really interesting to hear. It's all so much fun. So I'm curious from a therapeutic perspective, on your end, have you seen is there anything new in the past year, anything that you're more excited about?

Yeah, great point. So there are a couple of things I'm really excited about. One of them is Homo Torrey, which hasn't been used a lot by people so far.

But what it the the testing looks pretty promising. And what it does is it prevents the oligomerization of the amyloid. So we know that when an old gum rises, it is go it is going to be pulling back on your synapses as well as to be fair killing bacteria.

It is an anti-microbial peptide, but they saw some good results in APOE4 positive individuals with homo story. And I think as part of an overall protocol, it could make a lot of sense for us to include at times, especially for people who have significant amyloid burdens and certainly for people who are apoe E4 positive.

Another one that I'm really excited about, which unfortunately is not available yet, but it's on the way. We spent years in the lab looking at how APOE E4 gives you Alzheimer's disease.

And actually Rahm Rao, my colleague, have been published a paper we published a paper together years ago showing that this actually interacts with your DNA.

It turns out that there are specific post-translational modifications. So modifications of the APO E4 itself that are driving that. And so we then screened for a drug candidate that essentially turns apoe e4 into an oppo E3 like effect.

So it doesn't have that same impact. I mean, this is something that should be ultimately taken by everyone who's APOE E4 positive when they're young. Now it needs to have a trial.

It needs to be shown. So far, it looks very good. It's orally, bioavailable, it's brain penetrant. It has a good impact at low doses and it looks to be nontoxic.

So my hope is that that will be available in a few years. We need to find a group that that will work with us to to to push this into clinical trials and ultimately make this available.

So that's another point to tackle. This will be a pharmaceutical. Yes. And again, I come back to the idea that in the long run, this idea of using pharmaceuticals by themselves and when it has nothing to do with what's causing the problem, silly, but using the overall protocol.

Now, if we can add targeted things that will now enhance you mentioned bioidentical hormone hormones. And I think that's a it's a great example, getting these things in the right and optimal situations, even though, you know, they're low because of who knows what reason and because sometimes it's autoimmune, sometimes it's congenital, you know, lots of different reasons.

But getting them optimal is going to be important. And I'm sure a lot of people saw the article recently on the the transmission of Alzheimer's disease.

And this is an unusual situation where people had human growth hormone that had some that had some amyloid in it. And yes, it's just like it would be just like taking someone who has disseminated intravascular coagulation with all these clots everywhere, starting to inject a bunch of clots into people. Yes.

You can now get more clotting. This is this is a system that has positive feedback. But the sense has been that people aren't out there catching Alzheimer's.

You're not catching it by something. You're breathing. You really all these things that are changing this, you know, this system so that you now have literally a network insufficiency.

And so one of the things I'm excited about is we should now be able to take this and apply it to macular degeneration, to frontotemporal dementia, to Lewy with.

In fact, we've already seen some good results with Lewy body disease. So I think the era of again, of now taking this principle, these principles and and expanding these, I'm really enthusiastic.

And of course, we're setting up the first the first precision medicine program for neurodegenerative diseases, a specific neuroscience institute grateful to David Merrill.

And obviously you've been involved as well. And we're we're grateful to have you on board. I think it's going to be fantastic. This is going to bring hope to a lot more people with neurodegenerative diseases.

So my understanding is at Pacific Neuroscience Institute, this brain health center, it's essentially it's in L. A. So it's a destination for people from around the world, right where you can come and get the latest in workup and evaluation from some of the brightest doctors in the world on and also on the at the cutting edge.

Taking all of this research and many people here, I mean, David Merrill himself wrote one of the the seminal papers on BD and F and its role in the brain.

So very impressive individuals who are there who are have this kind of some freedom outside of the conventional insurance system to really push the edge of what's possible and deliver medicine in a really amazing and inspiring way.

It's for me, I just pinch myself every time I get to come to a meeting with you guys and learn from the people who are there, just really delivering medicine and hope and solutions at a totally different level.

One of the things going on there is has also been around for a long time. It was Dr. Smoller, if I'm correct, who put

together these support groups, and that continues even after his retirement.

They've continue that program. And so groups of dementia patients, along with their partners, come in these dyads and they have several hours of brain training.

New therapies and future directions

The Brain Gym Support Group meetings. They share a meal together and as well and an amazing place. And again, like this destination for people to come and get really exceptional care.

Absolutely. And I think, you know, will be able to continue to build this over the years to say, okay, what is optimal here? Because this is going on lots of different places, but we need an academic place to look at, you know, what needs to be changed?

What what new drugs can we add? How can we continue to make this better and better and better? Doctor Bateson This is one of my absolute favorite things about you among many, many things on that list, but just your commitment to constantly improving and I feel like there's been multiple times where you've been like, who isn't getting better?

Tell me about a case where it's not working so that we can dig into it and figure out how to help that person. What are we missing? Because if it's happening with that patient in your office, it's happening with other patients somewhere else.

And so if we want to expand our ability to help people expand the impact of this work, we need to be constantly innovating and looking for additional solutions to add to, as you as you call it, our our arsenal is that you have great words for armamentarium.

Armamentarium. Oh, so that tool belt, essentially, that our providers and care partners can, can carry with them to add to get even better and better outcomes and it's just a.

Huge. Part of it. And, you know, there's nothing better than hearing, as you said in the film, you know, you were crying. And I by the way, I've heard that from multiple doctors.

The first patient they saw get better. They cried. And, you know, I feel the same way. You see people who are who've been told your life is over. You have you're not going to be able to do much with your family.

You just get, you know, get your affairs in order. And then suddenly they're given a second life. They suddenly they can do things. They can go back to work.

They could want to they can interact with their families. And it's so exciting to see that. And on the other hand, just a few days ago, I got an email and then a phone call from, one of the very first the very first husbands who came way back in 2013.

And his wife had gone for several years. And there was a lot we didn't know in 2013 and she'd held her own, but ultimately it was too much to manager.

He put her into a care facility and that was still that was 2017. So she still she was almost as we saw, she was over seven years there. And as soon as she went into the care facility, within a month, she was much worse and she hung on.

And, you know, in some ways, unfortunately for her and for her husband now this is a woman who is a brilliant mathematician who was at one of the early computer experts in some of the things that she was doing for IBM and for other groups.

And just to lose her mind and to see this happen when this happened, she just she just passed away recently. And

every time I hear that, it just kills me.

And I want to say, you know, what did we miss? What what is there that could have been done? That wasn't done? And so absolutely that, you know, the push both on the positive side and on the horror of horror to see people go downhill, we want to do everything possible.

And there in the great news, there are new tests, there are new there are new treatments, there's follow up, there's Marama. There are all these things happening that weren't there even a few years ago.

So I do think we're going to see this dramatic exponential improvement in the ability to prevent and reverse cognitive decline. It's so exciting. I don't think I've even share with you yet.

We got our data back from the Clear Mind Center, which is our sister facility. Yeah, yeah. And so we have our first residents there who have been there for six months now.

Yeah, what we saw is that four out of the five of them improve their cognition in those six. So consistent with the data that we both published, the majority of people get better when they get the right care and it's just such an exciting time.

And, you know, think I want to take the opportunity to thank you, Dr. Bredesen. Always, but also does everyone who's showing up for the summit, everyone who is taking the time.

Time is one of those things we can never get back. It's one of our most valuable assets. And the fact that you are here with us learning and making the most of an awful, awful disease, finding ways to find solutions, committing to the process and learning you.

I want to just commend you. If you're a care partner, if you're a caretaker for someone who you love who is struggling with dementia. Thank you for showing up.

Thank you for being a pioneer in this space and getting your loved one the best possible care they can get. You are doing an incredible job. We are so grateful for you and for all of you who are looking to prevent cognitive decline.

Today is the day to get started. Take everything you learn here and implement it immediately. We know and I'm sure, Dr. Bredesen, you can attest to this, but I see in my clinical practices that the earlier we get started, prevention is so much easier than than reversal.

You know, the younger you are and the more you dove in fully, the more that you, you know, do all of the pieces stack these interventions on top of each other?

The more confidence I have. Absolutely. And there's as you say, I mean, there's so much there are a couple of interesting things currently that people may have seen on Netflix, one called diagnosis and one called afflicted.

And in afflicted. What they're showing is a series, people who just had overwhelming toxicity. And these are relatively young people who don't know it, but they're headed for cognitive decline.

And some of them they talk about they talk about brain fog, that sort of thing. So to find out early, oh, you're headed for this, which is again where the fast photo can be helpful as well to tell you early on.

Hmm, things are not headed in the right direction. You're fine today, but you may not be fine in five years.

Building the precision medicine future

This is so valuable and so you can see, do you need to have detox? Is there a chronic infection that has been missed, which is surprisingly common? You know, are there things going on?

As part of the summit, I talked with Richard Horowitz that had a great discussion and the amazing things he's seeing with tick borne illnesses and the amazing results he's getting with tick borne illnesses.

So I completely agree with you. Everyone, please, if you are 40 or over, please get evaluated, get a cognitive copy and get on active prevention or early treatment.

If you already have symptoms, get on reversal instead of treatment instead of a prevention. There's so much that can be done. And for all the providers attending with us, please head to the Apollo site.

There is a phenomenal training that Dr. Bredesen has created, and we have two new doctors joining me in my clinic here. They are going to have completed the training and was raving about how much she learned and how excited she is to put it in practice and the other ones in the middle of it.

And it's just such a great way to feel empowered and to help patients at an entirely level. Another level. And I can tell you that people call us all the time.

We're here in San Diego. People call from all over the world, literally from South Africa and the UK and Australia and Canada and all over the U. S., asking if there is a Bredesen and trained provider near them.

And so there is a huge amount of need for this. So anyone who's considering helping and supporting, whether you have a personal connection or you just want to help and support a patient population in need, please, please consider doing that training.

Great point. And I just got an email literally at about an hour ago saying, is there is there a trained practitioner in Poland? It's more all over the world asking about this and we need to keep on pushing to get people trained and to get better and better results.

So thank you for all the great work you're doing, Heather. I really appreciate it. It has been such a privilege to be working with you and to be hosting the Summit with you again this year.

Thank you. Thank you, Heather.